U.S. DEPARTMENT OF TRANSPORTATION

PIPELINE AND HAZARDOUS MATERIALS
SAFETY ADMINISTRATION (PHMSA)

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VOLUNTARY INFORMATION-SHARING SYSTEM
WORKING GROUP

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PUBLIC MEETING

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THURSDAY
JUNE 29, 2017

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The Working Group met in the Gallery Ballroom, Hilton Arlington, 950 North Stafford Street, Arlington, Virginia, at 8:30 a.m., Diane Burman, Chair, presiding.

MEMBERS PRESENT

DIANE BURMAN, New York State Public Services Commission; Chair
ERIC AMUNDSEN, Energy Transfer Partners
KATE BLYSTONE, Pipeline Safety Trust
BRYCE BROWN, The ROSEN Group
ROBERT BUCHANAN, Seal for Life Industries
DAN COTE, NiSource Gas
JASON CRADIT, TRC Oil and Gas
YIMING DENG, Ph.D., Michigan State University
SHERINA MAYE EDWARDS, Illinois Commerce Commission
MARK HERETH, Process Performance Improvement Consultants

LEIF JENSEN, Sunoco Logistics*

WALTER JONES, Laborers' Health and Safety Fund of North America
ALAN MAYBERRY, Associate Administrator for Pipeline Safety, PHMSA
JOE SUBSITS, Washington Utilities and Transportation Commission*
MICHELLE THEBERT, Georgia Public Services Commission
CHRISTOPHER WARNER, Mears Group, Inc.
MARK ZUNIGA, UniversalPegasus International, Inc.

PHMSA STAFF PRESENT

HOWARD McMILLAN, Executive Director and Acting Deputy Administrator
CHRISTIE MURRAY, Designated Federal Official
AHUVA BATTAMS, Office of Chief Counsel
CHRIS McLAREN
AMY NELSON
HUNG NGUYEN
CAMERON SATTERTHWAITE
CHERYL WHETSEL

ALSO PRESENT

DREW HEVLE, Kinder Morgan
NICK HOMAN, Marathon Pipeline
DAVID NEMETH, Energy Transfer
MICHAEL STACKHOUSE, Phillips 66

* via telephone

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

8:52 a.m.

DR. MURRAY: Good morning and welcome. All right. Thank you all for joining us for just our second Voluntary Information-Sharing Working Group committee meeting. We're happy to have you here. We will have committee members participating today by phone, as well as here in person.

If you are on the phone and can hear me, please confirm that you can hear me. Okay. So, we will continue to work to make sure the committee can dial in and participate. Or if you're on mute, please take yourself off mute and respond.

(Laughter.)

PARTICIPANT: Over the phone, they can hear you.

DR. MURRAY: They can?

PARTICIPANT: Yes.

DR. MURRAY: Okay, great. Diane Burman, are you able to hear as well?

CHAIR BURMAN: This is Diane, I can hear you.

DR. MURRAY: Okay, great.

CHAIR BURMAN: Can you hear me?

DR. MURRAY: Yes, I can hear you. Perfect.

CHAIR BURMAN: Perfect.

DR. MURRAY: We're going to go ahead and get started. We apologize for the delay this morning. I think we'll still be in good shape as far as time and wrapping up on-time, if not early today. But certainly we will work to stay on-track today.

My name is Christie Murray. I am the Designated Federal Official for this particular Advisory Committee and I am happy to share with you throughout the day. Diane Burman and I will help to facilitate today's discussions.

First, I want to just remind and refresh everyone, I know we met back in December on the 19th last year, that was our first meeting, so I thought I'd at least start off with refreshing what we're here to focus on as a part of this Working Group's efforts.

And basically, our role is to fulfill Section 10 of the PIPES Act, 2016 PIPES Act. Which is ultimately to consider the development of a voluntary information-sharing system that can be used in a collaborative effort to improve inspection information, to help with risk analysis work, and ultimately advance pipeline safety, and I'm paraphrasing. But also, the ultimate deliverable for this committee is to provide recommendations to the Secretary of Transportation.

Since we met last December, there was a lot of great discussion from the committee initially, robust discussion in terms of what will the scope look like, there were a lot of ideas. There were questions about whether this Working Group will focus primarily on the requirements in the mandate.

There were question around if there was an opportunity to expand what that could look like further. And the answer to that, I think we agreed to was, there was definitely an opportunity to expand beyond the mandate, but certainly making sure that we address the work of the mandate as our primary focus and then, looking to see what's appropriate to take on in addition to that.

So, that will be part of what we talk about. This particular committee meeting was designed to be both informative, educational, as well as advance this committee's efforts in terms of getting organized.

With any new group, team, entity, there's front-work around, how do we get organized? How do we maximize the use of everyone's time? How do we focus on the deliverables and the actions at hand?

So, with this meeting today, and we'll share the agenda and talk about the agenda in more detail shortly, that's certainly the intent and focus of what we'd like to get accomplished.

A few housekeeping items. First, the

restrooms, if you go straight out of these exit doors, for those who are here in person, the women's bathroom is straight ahead, the men's restroom is off catty-corner to the left.

Also, if you have not done so already, I need to make sure I did as well, silence your mobile devices, to make sure we minimize disruptions. And we have numerous people here, thank you, even the public audience who joined us.

If you could also make sure your devices are silenced and we will make sure we provide opportunity throughout today's committee meeting to invite comments and participation for those of you who are participating with us.

If you could, when you have an opportunity to speak, please hold your comments until we open the floor for public comment and keep your remarks concise, but brief.

Also, there's opportunity to officially provide written comments to the docket and the information is provided here, it's Docket

Number PHMSA-2016-0128. And, as always, participants should conduct themselves in a professional manner.

In terms of safety, we would -- in the event of an excavation -- not excavation, evacuation from the building -- I've got 811 on my mind -- but in case of -- in the event that we have to leave in an emergency situation, there are exits that are labeled to my left, but certainly behind this row to my left, and we would go down to the first floor and out to the left through the lobby and we would meet in front of the building. We'd find a place outside in front of the building to meet, in one area, so that we can account for everyone.

Next is a part of our safety-share. Okay. We wanted to take this as an opportunity to promote and highlight one of our high school 811 video contest winners for 2017. This is actually the grand prize winning video, that's why I had 811 on my mind.

I'm excited about this effort, because

we're really working to ingrain our safe digging messaging, in particular 811, as young as possible across the country. And we wanted to share this brief video with you.

And for those of you who are over the phone, you should be able to see the video, I'm not sure if the audio will come through clearly, but you should be able to see the video as we're displaying it. If you're connected to the Skype connection.

(Video played.)

DR. MURRAY: So, it's a very uplifting, compelling --

(Laughter.)

DR. MURRAY: -- powerful message, but nevertheless, it really underscores the level of creativity and talent that you're seeing even at the high school level.

So, we thought that was an excellent job, it certainly -- we had to watch it twice when we were judging this contest, because it left that big of an impression with us. So, we thought we would just share that for our safety minute. Okay.

So, getting back to our business. In order to complete the business of the Advisory Committee, we ask that all parties hold their comments until we open the floor. And as I mentioned earlier, keep comments brief.

Also, we also want to make sure that the presiding official -- in the event that we need to, we will work very much so to keep the agenda moving forward. Thank you.

Also, this Federal Advisory Committee meeting, the members and members of the public are asked to preserve order and decorum during this meeting.

No one shall either be, by conversation or otherwise, delay or interrupt the proceedings or the peace of this committee meeting, nor disturb any member while speaking or refuse to obey the instructions of the Chair or the Designated Federal Officer or Official. If someone chooses to be disruptive, we will or we may ask you to leave, depending on what that looks like.

Next up, I will introduce the Honorable Diane Burman, who is the New York State Public Utilities Commissioner. And she is with us initially by phone. She is the government representative, a government representative on this committee and she's serving as our Chairman.

Also, I want to recognize our acting Deputy Administrator, Mr. Howard McMillan, otherwise, we refer to him as Mac. He's joining us this morning to share remarks.

And, of course, our Office of Pipeline Safety Associate Administrator, Alan Mayberry. And all the other PHMSA participants, if you could just stand and make yourselves known, whether you're on the staff or -- thank you -- here to listen in on the meeting. So, thank you, everyone. So, next, I will hand the meeting off to the Chairman, Diane Burman.

CHAIR BURMAN: Hello, everyone. Thank you for bearing with me as I'm on my way. Can you all hear me?

DR. MURRAY: Yes.

CHAIR BURMAN: Can you all hear me?

DR. MURRAY: Yes, we can.

CHAIR BURMAN: Great. So, before we get started, I want to conduct a member roll call. This will help us to establish a quorum and officially call the meeting to order. So, first, if we can have and if, Cheryl, you can help me with going through the member list. There's 24 Working Group members.

If we can go in order and say a person's name, their title, the company or organization, and the representative group that they're in. And then, if they are present, to say present and identify whether they're on the phone or in the room.

DR. MURRAY: Okay. Let's start with Kate down at the end and work our way around.

MEMBER BLYSTONE: I'll try to remember everything she asked. Kate Blystone, outreach manager for the Pipeline Safety Trust. I represent the public. And I'm physically in the room.

MEMBER THEBERT: Michelle Thebert, Georgia Public Service Commission. I represent state pipeline safety inspectors. And I'm in the room.

MEMBER AMUNDSEN: Eric Amundsen, Energy Transfer. I represent the pipeline operators. And I'm in the room.

MEMBER HERETH: Mark Hereth. I'm a principal with PPIC. I represent the industry. And I am present in the room.

MEMBER BROWN: Bryce Brown with the ROSEN Group, vice president. I represent inspection service providers. And I'm in the room.

MEMBER EDWARDS: Good morning. Sherina Maye Edwards, Commissioner at the Illinois Commerce Commission. I am a Commissioner representing or, excuse me, regulating the utilities in the state of Illinois. And I'm present in the room.

MEMBER JONES: Hi. I'm Walter Jones. I am representing labor. I'm with the Laborers Health and Safety Fund of North America. And I am in the room.

MEMBER WARNER: Chris Warner, vice president of Mears Group, representing cathodic protection contractors. And I'm in the room.

MEMBER COTE: Dan Cote, vice president of pipeline safety and compliance for NiSource. I represent the LDCs. And I am present in the room.

MEMBER CRADIT: Jason Cradit, senior director of technology for TRC Solutions. And I am in the room.

MEMBER ZUNIGA: Mark Zuniga, chief information officer for UniversalPegasus, representing inspection technology vendors. And I am in the room.

MEMBER DENG: Yiming Deng, associate professor, Michigan State University. I'm representing research institutions. And I'm in the room.

MEMBER BUCHANAN: I'm Bob Buchanan with Seal for Life Industries. I represent, I suppose, the coating industry. And I'm in the room.

MR. MAYBERRY: I'm Alan Mayberry, PHMSA Associate Administrator, representing PHMSA on the committee. I guess we can go to the phone then. Those members on the phone?

MEMBER SUBSITS: Yes, this is Joe Subsits. I'm with Washington Utility and Transportation Commission. And I'm representing the National Association of Pipeline Safety Representatives. And I'm on the phone.

MEMBER JENSEN: This is Leif Jensen, senior director with Sunoco Pipeline, representing hazardous liquid pipeline operators. I am telephonic.

CHAIR BURMAN: Is there anyone else on the phone? No? So, I guess that leaves me. I am Diane Burman. I am a New York State Public Service Commission Representative and I represent the state regulators.

Is there anyone else, committee members that we need to recognize? And is there any other PHMSA staff that we need to recognize?

DR. MURRAY: No, I think we're good, Diane.

CHAIR BURMAN: With that, I do believe that there's an established quorum and I call this meeting of the Voluntary Information-Sharing Working Group committee to order. The meeting is being recorded and a transcript will be produced for the record.

The transcript and the presentations will be available on the PHMSA website and the eGov docket at www.regulations.gov. The docket number for this meeting is PHMSA-2017-0136.

I would like to remind people that they should introduce themselves each time they speak, so that your comments can be acknowledged in the meeting transcript. And we would ask that tent cards be set up on its side if you care to make a comment.

We will, in a moment, be reviewing the

agenda for Day One and Day Two. So, first, can someone pull up the slide for Day One?

DR. MURRAY: Yes, they are up.

CHAIR BURMAN: Okay. And can I ask you to read Day One's slide?

DR. MURRAY: Absolutely. So, for Day One, we've already covered the first few items. Next, we will hear opening remarks from Mr. McMillan and Alan Mayberry. Then, we will move into some of our committee management business, where we will have an overview of the FACA subcommittee requirements from our Counsel's Office at PHMSA.

Then, we'll talk a bit about forming subcommittees and what that could look like and teeing up for the group to think about over the next two days. Then, we'll move into committee business. This is where we'll get more into some of the educational and informative pieces of our work.

And we will talk a little bit about integrity management, have an overview of it and talk about different types of assessment tools, such as inline inspection tools. Then, we'll hear from operators, one will share an experience with their integrity management implementation.

Then, we'll break for lunch, we'll have an hour for lunch. Everyone should be provided a restaurant map. If not, there's one out on the registration table. But lunch will be on your own.

And then, after lunch, we'll reconvene at around 1:00 p.m., and we'll move the conversation into more of a geospatial conversation, looking at pipeline data. Amy Nelson will present on our National Pipeline Mapping System.

We'll also hear from operators on how they utilize GIS systems in terms of their implementation efforts and operator assessment tools. And then, we'll wrap up today with any action items that may have come out of today's discussion, share brief closing remarks, and adjourn.

Next, I'll go to Day Two for an agenda overview. Tomorrow, we will take roll call, call the meeting to order, recap what we discussed, some of the highlights from Day One.

We will have operators share challenges that they've experienced with integrity management, inline inspections, data sharing in general. And then, the committee will move into some more discussions around management items, such as Alternate Designated Federal Officials for PHMSA, proposed Co-Chair selection, and possibly take a vote.

Additional expertise needed on the parent committee itself, possibly take a vote on what that may look like. And then, we'll talk a bit more about subcommittee formation and planning and see if there are items that would require the committee's vote as well.

And then, we'll discuss planning for the next meeting, which we're tentatively looking at in September of this year, and we'll share more about what that could look like. And then, we will review action items, any key takeaways, and we will close out the meeting. Turning it back over to you, Ms. Burman.

CHAIR BURMAN: Thank you. Thank you so much. Before I turn it over to the PHMSA leadership for some opening remarks, I just wanted to give a brief overview of where we were and where we are now.

Legislation was passed, the safe pipe legislation, and we are fulfilling a mandate for Section 10 of protecting our infrastructure of pipelines and enhancing safety, which is the PIPES Act of 2016.

We met officially for the first time on December 19, 2016 and at that time, we had 22 present members, four of those members were by phone. At that time, in that meeting, we established many different things.

We voted on four things. We voted on approval of the charter. We voted on approving the bylaws. We voted on designating me as the Chairman. And we voted on the need for the

Voluntary Information-Sharing Working Group.

We discussed, but didn't vote on, the scope, the governance, and subcommittees. There were initially identified four subcommittees that we were looking at, but then we also discussed other subcommittees that may be necessary. We decided not to vote at that time on subcommittees, but we would be looking at it.

We also looked at the concept of data sharing, data quality. What is the data? Is the data the miss? What is actually necessary for data to be collected? What's overload for data? We looked at whether or not we needed to have a case study, integrity management issues, confidentiality agreements and Freedom of Information Act.

We were focused on best practices and common language. For example, in the airline industry, they talk about near misses and close calls. We talked about risk analysis, risk management, and technology.

We talked about the need to

distinguish between distribution and transmission. And we talked about the overall focus is on the framework on pipeline safety. We also talked about preventing the next accident and what our goals were.

The objective for the Working Group is to develop recommendations on how best to establish a voluntary information-sharing system to exchange and protect pipeline safety and inspection related data.

And the Information-Sharing Group is one that will be identifying recommendations to submit to the Secretary. I thank you for letting me participate and be a member of this Working Group and I look forward to drilling down on our goals.

Now, I'd like to introduce Mr. Howard McMillan, the acting Deputy Administrator. Followed by that, Mr. Alan Mayberry, Associate Administrator for Pipeline Safety. And if this traffic lets up, I will be there before 5:00.

(Laughter.)

MR. McMILLAN: Okay, Diane. Thank you very much. Good morning. I am Mac McMillan. I am the Executive Director of PHMSA and until we have an Administrator appointed, I am the acting Deputy Administrator.

I thank you for coming this morning and for your commitment to pipeline safety and to be willing to discuss the important need to share information and data. I appreciate your time and work on the committee and this very important Working Group.

But since this is my very first time to meet with you, I think the first meeting was on the 19th of December and I had just arrived at PHMSA on the 12th of December, so I was not able to make your first meeting. But a little background on how I wound up in what I call the best job one could ask for, in PHMSA.

And that is, initially I had spent about 30 years in the military and once I retired from that job, I became a county administrator. And then, I did about six and a half years with the Internal Revenue Service. And then, I worked in the private sector for a while.

And then, I came back to public service, because really public service is really my calling. And I served for eight and a half years with the Department of Homeland Security. In fact, I ran a program that many of you may be familiar with, it was called the E-Verify Program.

And I did that for eight and a half years. And it's still a very good program, by the way, so make sure you're -- I saw a face light up over here, so I know you're enrolled, and that's good.

And then, in December, I really got just a fantastic opportunity to join PHMSA and I've been onboard since the 12th of December. But as the PHMSA Executive Director and acting Deputy Administrator, I'm responsible for the Agency's day-to-day operations and oversee consistency of program execution PHMSA-wide.

In my few months here, there's one

thing I've noticed among the great staff that comprises PHMSA is that there's dedication, expertise, and a great deal of passion. And the passion is included with my colleagues here today, by the way.

And I always say, if you want to move an organization from good to great, you got to have passion, that's the one thing that gets you over that line. It's the passion that one brings to the office, to the job, because it's the thing that motivates people when no one else is asking.

Your diverse experiences and expertise and points of view are extremely useful to us as we work to ensure that we can meet the Congressional mandate to develop a voluntary information-sharing system as was promulgated in the PIPES Act.

The feedback that you provide, as we work to improve inspection information, is absolutely, what I call, it's indispensable. What we don't want to have are failures or releases.

And every time there is one, such as last night we had an occurrence, I send that information to the Secretary's office and she takes an interest in pipeline integrity, she takes an interest in releases, I can assure you.

So, it's important that we do what we can to make sure we don't have that next accident. And that's what this is all about, as Diane point out and as Christie has mentioned. But the feedback and information sharing with the purpose of improving gas transmission, hazardous liquid pipeline, and facility integrity.

As I've gotten onboard and my learning curve has shortened somewhat, I find that we focus on pipelines, because that's what people see and hear and can go out and touch and feel and be concerned about, especially if it's passing in the backyard, but facility integrity is also important, because there's quite a bit happening at the facilities that don't get into the public domain right away.

That's very important, because we have

mechanisms in place to contain that. So, facility integrity is important as well. So, thank you for taking that on in terms of your agenda. Your work on this Working Group is vital and will help improve pipeline safety and efficiency in our nation.

The key is getting the energy products to market and if we don't get it, some people don't make a profit and we have problems in terms of trying to manage the incidents that occur. So, I think we all have a shared objective, to make sure that we can move things through the pipelines to market without incident. And so, with that focus, I call it one mission, one focus, I know we will be very successful in doing that.

One note before I finish talking and let you get about doing your business you came for, is that I do want to give a shout-out to the Honorable Diane Burman of the New York State Public Services Commission.

She has done a great job setting the

agenda and actually setting the tone this morning. And thank you very much, Diane. And she serves as the Chair of the group and having met her earlier in another venue, I know she'll serve this group quite well.

As I stated earlier, I appreciate your efforts and I believe that the Working Group can recommend what I call smart, creative, and innovative ways for us to share information, strategies, and lessons learned across industry, government, and public safety groups.

And as pipeline information technologies continue to develop quickly, it is vital that we say ahead of the curve and work together to identify and disseminate the most effective innovation solutions for addressing pipeline safety risk.

In closing, unequivocally I believe developing recommendations to address information sharing is going to take a lot of hard work. And I want you to know we will have additional meetings of this sort, with robust discussions, to make sure that we accomplish the mission.

And accordingly, I want to make sure that we hear all of your recommendations on how to proceed. I'm committing to making PHMSA the very best that it can be and your expertise and insight will be an important part of our Agency's processes as we move forward.

Again, I thank you for your service with us today and your contribution is absolutely indispensable to the mission that we have to accomplish. Thank you very much. I am fortunate to be here. Thank you for what you're doing for us.

CHAIR BURMAN: And now we'll turn it over to Alan.

MR. MAYBERRY: Thanks, Diane and Mac. And I really only have like two minute at most, but I did want to share some thoughts, just as we get kicked off here. First off, I'm very excited about this group.

I think it dovetails nicely in with the agenda that's evolved from the new administration of a theme of really three primary areas, safety, which is paramount, I think we all agree it's paramount, infrastructure, and then, the future.

Certainly related to the safety theme, as we talk information sharing, we're talking about other ways to help ensure safety. Sharing information, if you look at a common theme around accidents that are out there, certainly you can look at specific issues that happen, but I think there's an element of how information is shared in an organization that has been a part of the reason why accidents occur.

I think we're looking at another opportunity here as a way to leverage information to that end and a way to potentially set up a system to share that information, or share information certainly as it relates to pipeline safety to help ensure safety.

Infrastructure, certainly it's important. Safe infrastructure is good business and it's just -- it's our primary focus, certainly as PHMSA, is safety and nothing other than safety. But I think as we look to -- for infrastructure, supporting infrastructure growth, just ways to make sure that that happens safely and that once it's in the ground, it stays safe, certainly is the focus and should be our continued focus.

And then, finally, future, really we're here to talk about the future. And you're part of the conversation of where we had and where -- other approaches to pipeline safety that look beyond just regulations, that has been a focus and is certainly a role we play, that will always be a role we play. But we're looking at other ways to help ensure safety as we head towards zero accidents, which we all agree is our goal.

So, I'm excited about the work that we're participating in and, actually, I have yet to be a part of as a member of the committee, and look forward to seeing what we come out with, as far as a way to set up a system that's outside of just coming up with a new regulation, but a way to -- other ways to ensure safety. So, anyway, thanks again and I look forward to the conversation today and tomorrow.

DR. MURRAY: So, as Diane, who has just -- Honorable Diane Burman has joined us, we will now move into the next section of our agenda, and we're going to move into some of our committee management discussions.

And we have Ahuva Battams, who will be joining us now to talk with us a bit about subcommittees and what the Federal Advisory Committee Act requirements are as the committee considers the formation of subcommittees to help move the work forward.

MS. BATTAMS: Good morning, everyone. As Dr. Murray said, I'm Ahuva Battams. I'm an attorney advisor with PHMSA in their Office of Chief Counsel.

And I'm going to talk about just the basics of the rules for forming subcommittees and how they are run. And if anyone needs me, there's my contact information and also, obviously, you can contact Cheryl with questions as well.

So, what is a subcommittee? A subcommittee is a group that is generally not subject to FACA's reporting requirements, which means that the group does not have to publish its working papers and is not generally available to the public, we don't need to file a Notice in the Federal Register.

And the group is drawn in whole or in part from our parent Advisory Committee, but can also have members from outside of the parent group, so that you can have expertise on each subcommittee.

As I said, subcommittees are not subject to the notice or public disclosure requirements of FACA. The creation and operation of the subcommittees must be approved by the Agency that established the parent Advisory Committee. This also includes the members of the subcommittee.

The most important thing I'm going to tell you about subcommittees today is that the subcommittee cannot be a substitute for the parent committee, it can only provide advice to the parent committee to consider and then deliberate on.

There's no requirement that the subcommittees be announced in the Federal Register or that the public be included in a subcommittee. The Designated Federal Official or the Alternate Designated Federal Official must attend every subcommittee meeting.

As I just said, the subcommittees cannot be a substitute for the parent committee, so the subcommittee cannot deliberate and then pass on its decision to just be rubber-stamped. It can only be providing that advice to the parent committee, otherwise you have to follow the standard FACA requirements of the Notice in the Federal Register and the public access.

In our VIS charter, it states that PHMSA has the authority to create subcommittees and determine how the subcommittee members are selected and what interest these members will represent.

The subcommittee will report back to our parent committee here and the subcommittee is not permitted to directly provide advice or work product to PHMSA or the Secretary.

Our bylaws also include information on creating subcommittees. Our Chairperson can also establish a subcommittee, with PHMSA's approval. The subcommittees must be listed in our charter and when it comes time to renew our charter, if that time comes, we will update that list.

Subcommittee reports must be submitted to the parent committee for review and approval and then they will be subject to FACA. So, if your subcommittee creates a report for the parent committee to be deliberating on, at that point, that report has to be provided to the public, just like our normal parent committee documents, and then it will be discussed in public at a committee meeting.

I know that was the quick and dirty, does anyone have any questions?

MR. MAYBERRY: This is Alan. There's just -- I know as we get cranked up here, I think it's obvious that we're considering some subcommittees, so just wanted to make sure it was understood, if you have any questions about that or the thought process behind that, it seems to make sense as far as dividing this up into different areas and we'll get into that tomorrow.

So, in case you had a question about why are we all of a sudden talking about subcommittees, it might be a better way to divvy up the work.

CHAIR BURMAN: This is Diane Burman. I just want to clarify. So, when we first met back in December 19, 2016, there were four different subcommittees for consideration, best practices, policy, legal, and funding, the third was data information structure, and the fourth was system development.

There were other ones that we had

discussed at that time. Again, we decided at that time not to vote on any. And then, we had a planning meeting on April 20, 2017, there were 20 out of the 24 members on that call.

It was a call, it was just about planning the agenda and also looking at some of the subcommittees. And it was determined that this would be the meeting that we would drill down.

Again, just between the charter and the bylaws, the charter allows PHMSA to set the subcommittees, but the bylaws allow the Chairman, with the approval of PHMSA, to, if it's deemed appropriate, to have specific subcommittees.

And our goal really is not to weight down folks with subcommittees, but really to try to get focused on some of the work that can then be brought back to the full meetings where we have four annual meetings, so that we can really get a lot accomplished in between the meetings.

But we will have to talk about whether or not some of the work is appropriate in the subcommittee or, after further discussion, in a big meeting, and how to break it out from that perspective.

I know one of the topics that had come up was proprietary information sharing and the determination of maybe that was something to look at in a subcommittee, but really we needed to first wrap our arms around it in a full meeting.

So, I just wanted to kind of bring people up to speed, if we forgot. I did, on the plane, since I had some extra time with the delay, reread the transcript. Okay. Thank you.

MS. BATTAMS: Okay. With that, if there is no further focus on the PHMSA subcommittee requirements, I would like to open it up if anyone has any further questions on the phone here. Mark, you don't -- usually you're very talkative. Okay. So, with that, I think we'll go -- oh, on the phone, I'm sorry.

MEMBER JENSEN: Yes. This is Leif Jensen with Sunoco Pipeline. A question for Ahuva, or at least a perspective, if I understood you correctly, the work product of the subcommittees is not disclosed to the public or published on the docket until it's been submitted to the parent committee for either a vote or, as I think you described, for deliberation.

We've already been contacted through our media relations department from a reporter asking us to offer any insight with respect to subcommittee work.

And it's my perspective that we should not really disclose to the media or the public the subcommittee's work product until it's ready for the parent committee's deliberation and consideration and publication into the docket. I'd like to hear your perspective and opinion on that.

MS. BATTAMS: So, under FACA, the -- you're entirely correct, the work product in the subcommittee does not need to be made public, unless the parent committee is considering it. So, if -- we could choose to make those documents public, but we are not obligated to.

And I think that we want to be consistent in whatever we choose to do. The point of the subcommittee is to really drill down into a specific topic, that might not be even ready to discuss with the public or with the parent group. That's why the subcommittee is formed.

I would advise not releasing that information until it's coming to the parent committee. If the group wants to discuss a different policy, we can always do that. But under the terms of FACA, until that work product is coming to the parent, we do not need to disclose it.

MEMBER JENSEN: Okay. Thank you.

CHAIR BURMAN: This is Diane Burman. Just to clarify, there's no intent to have a lack of transparency through the subcommittees. In fact, we'll always have not only the Designated Federal Official with us, as well as someone from Counsel's Office from PHMSA, to make sure that we are fully complying with the law.

Really, the subcommittee itself, because it's not an Advisory Committee and won't be issuing any recommendations, is really just a way of helping to flesh out some of the work product. And I would expect that when it comes back to the full committee, there would be a summary of sort of the status and thoughts.

And while the subcommittee is being held, that's also why the DFO and the Counsel's Office from PHMSA is so important in making sure that all the parameters and the procedures and the transparency that's necessary for bringing it forward will be there and will go flesh that out.

So, and as for contact from reporters, that's for each and every person, in terms of how they handle reporters. I particularly work through my press office to work with reporters, so if anyone approaches me, it's usually, I have no comment. But that's just me. Okay.

With that, I think we're going to now turn it over to Christie Murray, our DFO, to get to the next portion, which is the actual subcommittees that PHMSA is recommending.

DR. MURRAY: Thank you. So, as we talk about subcommittees, I do want to offer up some considerations for the committee to think about today, tomorrow, and even beyond, as we work to get organized.

Of course, we're thinking about what committees are needed, how will subcommittees help address the mandate and the areas that we will define as a part of the scope of this efforts, which parent committee members will sit on each subcommittee, what external participants would we like to invite?

What would that process look like, who will chair each subcommittee, what will be the tasks and deliverables and timelines for each subcommittee? And how will we arrive, out of the subcommittee, arrive at a consensus in the work that they are proposing to bring forward to the parent committee, and how will they report-out to the parent committee?

So, those are all questions that we

should be thinking about in terms of what this could look like. So, to help maybe shape or give at least food for thought to this discussion, and as the Honorable Diane Burman mentioned earlier, we talked a bit about this at our first meeting and our administrative meeting and there were a lot of different ideas around subcommittees.

And I think the committee wasn't quite there yet with how the subcommittees could be shaped. But of course, we wanted to pitch a proposed approach. Hear me out, my intent for this morning's discussion is to really get your creative minds going and then, tomorrow, we can certainly get more insight.

I know it's very small writing, I would say that the key is to look at that left-hand column. So, what we've proposed here are six subcommittees, some of which have come about from the previous discussions the committee has had.

And the premise here is to go back to the basics, in terms of, what do we have to address from a minimal or baseline standpoint? Which is Section 10 of the PIPES Act, 2016 PIPES Act.

So, in that effort and thinking about technology and R&D, the data sharing system itself, what's needed, what kind of information, these are the six subcommittees that we're proposing. It could look a bit differently, there could be a gap somewhere that the committee may introduce.

But we have the data sharing system needs, possibly with a focus on SMS. I tried to highlight a few key words from the mandate to align with the rationale for why this committee may be needed.

As you can see, this particular committee would focus on, is there a need for an information-sharing system? What could that look like? How do we maintain proprietary information and security sensitive data?

I actually see that theme running throughout all the committees. You can see this show up in any one of those other areas, but certainly making sure that we account for this somewhere in our subcommittee process.

I also see this committee potentially helping to shape or narrowly focus our scope of the whole VIS effort, factoring in safety management as a focus point, and issuing recommendations to that nature.

Next, there's technology and research and development. I grouped those together, because I think there are natural dialogue that kind of spills over into both of those areas.

And here, and I'm not going to read the language for each one, but as you can see, there are mandated areas that are directly focused around technology, methodologies, a secure system, the development of the system, factoring in risk analysis, that would help shape what technology may be available or would be of interest to this effort.

Then, there's training and qualifications. One of the things that I know was discussed previously was, how do we make sure that professionals who may have to interface with whatever is created as a result of this effort?

How will we make sure that we're expanding knowledge, that the right folks have the opportunity to get trained, and what those qualification and training needs look like as a part of what we may recommend as a committee?

And then, there are best practices. This is a very general area, where it could mean that this committee would go out to look at other successful or unsuccessful attempts at information-sharing systems completely.

It could go out and actually have a task to drill down from a technology standpoint on a particular best practice that another subcommittee or the parent committee has an interest in. So, this would be focused on doing research, going out and finding out what already exists and where maybe are some gaps in other places or gaps in our industry.

And then, the next committee is one

that we kind of grouped together, in terms of looking at the regulatory needs of an information-sharing system. Let's seen, maintaining that proprietary -- again, you see proprietary and security sensitive data showing up here as well.

This group would look at it from a funding and economic standpoint and also, what are the legal implications or the legal challenges that need to be teed up as a part of this work?

And then, finally, it may be of interest to this committee to have a subcommittee that's focused on, what will this report look like? What would our -- how will we shape our recommendations?

How will we make sure that there is consistent terminology and definitions developed across the different subcommittees' and the parent committee's work? And that would be the entity that will create the framework of the report, the recommendations, and it gives us a centralized place to organize around all the subcommittees.

So, these are just items for your consideration. So, what -- depending on -- even if the parent committee decides, well, we like a few of these, we may want to change out some, or maybe there's something missing, what could theoretically happen next?

Let's just take that first one, the data sharing system needs subcommittee, then this committee could then drill down deeper -- because I know the question that you may have is, so, what is each one of these going to do and how is that going to look? How will they know what their focus will be? What will they -- what will be the outcomes of it?

Well, here's what we'd like to see from a high level, a task statement. So, the parent committee would issue a task statement for those approved subcommittees. It will outline what their purpose for existence is, what's the description of the work they'll consider?

And this is just a sample that I created for talking purposes. With considerations. And then, what ultimately are they delivering back to the parent committee in terms of a report-out, a summary of their advice or recommendations, any acronyms or terminology, et cetera.

Any of those things that would be of interest to the parent committee, so that they understand really what the subcommittee was working on.

And then, ultimately, it would be important to provide some structure in terms of milestones and timelines for each subcommittee, how will they know the urgency around some of the action items that they may have or deliverables? So, this could be multiple timelines, multiple milestones, but certainly, giving them more guidance as to the expectations from the parent committee.

And, theoretically, you would have one of these task statements for each of those six committees. That way, it gives the parent committee an opportunity to go back and revisit those task statements.

Maybe what we initially thought the focus should be, maybe that's changed, evolved, expanded over time. But it gives a natural place to create that consistency and provide guidance on what that could look like.

So, as we talk further in our discussions today and tomorrow, please continue to think about, do the subcommittees proposed meet the needs of this committee, are there others, are there -- maybe there are too many or too few, how that could look, what gaps may exist from some of the discussions that we hear later today, how do we address the key considerations that -- I hate to keep flipping back, but just bear with me -- how do we address these key considerations?

These are things that we would want to understand before we invite others, particularly outside of the committee, to participate, they're going to have similar questions. And we can really expand and have some discussion around it. And finally, consider that there may be other preparatory work with subcommittees outside of today's meeting.

So, certainly, we may talk about the different types of subcommittee needs and some of the other key considerations and how we define those tasks and deliverables and timelines, who's going to lead, who's going to participate on those, and any guidance and logistic support that PHMSA can offer.

This will give us an opportunity to plan out what that looks like and be able to invite others to participate. Thank you.

CHAIR BURMAN: Thank you very much. Does anyone on the phone have any questions or comments? Does anyone in the room?

MEMBER COTE: Just an over --

CHAIR BURMAN: Can you say your name?

MEMBER COTE: Oh, I'm sorry, forgive me. I'm Dan Cote, NiSource LDC. Just an overriding comment or two, if I may. It seems to me, thinking about our overall mandate, the information that needs to be shared will generally fall into what is substantially two large buckets.

One -- and because, again, a lot of this refers to confidentiality, the need for proprietary information, and at the same time, there's incredible opportunities for sharing in that area among the industry for things like DIMP and IMP and understand near miss data to avoid all of us making the same mistakes.

The culture of the gas industry for a very long time has been one where all of us are very reluctant to air dirty laundry, and that's been historical going back 100 years. And so, in order to change this, it seems to me, one bucket needs to be protected information that is for the industry and the industry exclusively, and to develop those learnings.

The second large bucket, in my mind, is things that are shared more generally with the public, in terms of progress the industry is making, some of the technical risks at a very high level that we need to consider, much broader information.

But before we establish the subcommittees that you've referred to, those two buckets need to be identified much more clearly. And, in fact, it's possible that maybe two subcommittees are added to that, one that really defines in much more detail the information that needs to be proprietorial and why and the information that should be shared with the public and why.

And it seems to me, if we don't have those as enablers, it's going to be impossible for those subcommittees that are being recommended to really do their work effectively. We really need to start with that strategic visions of how shared information ought to be used. And again, on that basis, I can easily see the information overall falling into those two buckets I described.

CHAIR BURMAN: Thank you. Mark?

MEMBER HERETH: Mark Hereth. I would -- I support those comments and I think that's a great framework for looking at this. I would also ask if the members of the committee could get a copy of the couple of slides there that had the six proposed subcommittees and that potential breakout of the way the task committees work could be set up.

I appreciate the work that's done there. Christie, that's really nice work and well thought out. And I think it would be helpful if we have that at some point today to be able to deliberate on that and then, use it for some homework in preparing for tomorrow.

CHAIR BURMAN: Okay. So, we're going to have that, as well as have it emailed to everyone. And then, I'm sorry, I don't know your name, at the end.

MEMBER BLYSTONE: I'm Kate.

CHAIR BURMAN: Okay.

MEMBER BLYSTONE: I echo --

CHAIR BURMAN: And your last name?

MEMBER BLYSTONE: Kate Blystone, Pipeline Safety Trust. I echo Mark, that I'd really love to see that slide. And that was one of the questions I had had. Just, this is probably a quick question and then, something to ruminate over.

The question I have is whether or not by the close of this meeting, these two days, if it's not just the intention to set up the subcommittees, let's say we get through that process, is it the intention to also populate those by the end of the meeting? If the answer is no, that's great. And then, I have a follow-up.

DR. MURRAY: Okay. This is Christie Murray. To answer the question, no. Our effort was to just propose how it could look, to just get the conversation going. And if by the end of today the committee decides, we're not ready to make a decision on these subcommittees, by the ones we proposed, we're okay with that.

If the committee is ready to do that, then we're fine with that too. But, certainly, there will be more work outside of this meeting in an administrative manner to really get organized and give the committee an opportunity to stew over what we have in these slides and to bring forth other ideas as we plan out what this will look like.

MEMBER BLYSTONE: Okay. And then, the follow-up to that is, something for the group to consider. Whether or not, when these subcommittees are formed, they're just limited to the people who have chosen or we've elected to put on those committees, elected in the -- you know what I mean, or if any member of the parent committee can sit in and listen to the conversations that are happening in those meetings?

It's just a question I think we need to answer and I think it goes to what Mr. Cote was saying and Mark as well.

DR. MURRAY: So, it is important for

members of the parent committee to be represented on each of the subcommittees. But, certainly, we would invite, even if you're not a member of a particular subcommittee, it's still open for any member to be able to listen in. Thank you.

CHAIR BURMAN: Okay. And then --

MEMBER AMUNDSEN: Eric Amundsen with Energy Transfer. Just maybe a few comments on the remarks that Dan made. And I agree with him in terms of the two buckets. I would maybe add a bucket.

When you look at information to be shared, the way I look at it, there's information that we share internally in our companies and with our service providers about preventing incidents. So, it's the integrity management piece of it. So, what are we doing to prevent incidents? And I think that can be a little bit more public, if you will, maybe less confidential.

And then, the bucket that Dan referred to is, after an incident, that tends to be very closely held, for a lot of good reasons, in terms of legal action and those sorts of things. But there's a tremendous amount of information, knowledge, and wisdom to be gained from sharing that type of information amongst operators that we really don't tend to do today.

And I think there's tremendous value there, having gone through many of those as a company and as an individual. There's tremendous value in making sure that others don't make the same mistakes and that others learn from things that we've learned, we need to do better.

And then, the third bucket, which Dan, again, referred to, is, how do we get better at sharing the fact that we're sharing? How do we get better at informing the public and our regulators that we do do this?

We do do this at certain levels, probably not to the extent that we need to, but I think that we haven't served ourselves well as an industry in communicating and promoting the fact that we already do the other two buckets.

We already do, to some extent, share amongst operators and service providers about how we're executing integrity management, how we're using data, how do we get better at analyzing that data and using the technology? We do that, I think, to a greater and greater extent every day.

We do, depending on the relationships between companies, I think, share information about incidents and corrective actions that we take, but that, again, tends to be very closely guarded, and, again, for good reasons.

But I think the third one is, we don't tell anybody that we're doing that, and I think that's one of the reasons that we're sitting here today is that we don't do a very good job at sharing that we do a lot of this stuff already. So, I think that's a very important piece. And, Dan, I appreciate your comments.

CHAIR BURMAN: Thank you. Kate? Oh, okay. So, anyone else on the phone? So, I just wanted -- this is Diane Burman. I just want to offer some of my own thoughts. Can someone pull up the slide with the proposed six subcommittees?

And do we have a way of breaking out one side with the proposed subcommittees and the other side with the data sharing system needs, so that you have one slide there and a different slide there? It's not our -- okay. So, it all goes up the same? All right. So, we'll keep this slide up.

I just want to point out a couple of things based on the discussion here. Six -- four out of the six subcommittees are ones that were talked about before, at our first meeting, December 19. And I think it's important just to review.

These are, obviously, proposed subcommittees from PHMSA. The first one, which is the data sharing systems needs, was originally called data and information structures. And really, it has been expanded because of the SMS and part of the discussion on the proprietary and intellectual property issues.

There was a recognition at the December 19 meeting, which Dan has raised again, which I think it's important to show the compliment from one to the next meeting, which is that it is very important to fully understand the proprietary information and to have a significant discussion before the subcommittee is focused on that. And also, the sensitivity of all of that.

This is not intended to be a gotcha. In fact, since this whole Voluntary Information-Sharing Working Group is really modeled after the airline industry, which, again, had its own concerns, significant concerns on sharing information and the need for clear guidance on addressing some of the issues that can trip up people if there's not a discussion from the front end.

Which is why, initially, the airline industry was very hesitant and slow in adopting some of the changes, because it really is about -- based on trust and needing to work through some of those issues.

But the focus, just like on the airline industry, focuses on helping to prevent the next accident and working through some of those challenges, so that there can be sharing among the industry, as well as then the stakeholders, to learn and to address those issues.

So, I don't think that it's going to be easy and I think there will be some challenges and we will need to have some conversation on that. That's why I think it's important, also, when we get to this that, when we look at the purpose and the actual description of the task, that it's very important that we have clear sort of guidance on those issues.

The second proposed subcommittee, technology and R&D, was really the fourth subcommittee initially, which was on system development. We heard loud and clear at the first meeting that folks were very interested in technology as a part of this, technology and innovation.

So, I think that this is trying to incorporate those aspects of gas technologies that are going to be helpful, especially when it comes to risk assessment and risk management.

The third one here, training and qualifications, that's new. That wasn't before done, but I think that was trying to address some conversation on looking at case studies and working through some of the issues and the workforce development issues.

Then, the next one, which is best practices, has remained the same. And it really goes towards looking to the industry in a voluntary way on best practices.

And then, the next one, regulatory, funding, and legal, was originally identified as policy, legal, and funding. It has gotten broader, and again, here it also added to, in the description, the proprietary and security sensitive data in a confidential manner. Because, again, the need for a clear laser focus on what that means, which will be necessary for the full body to look at.

And then, the last one, also is new, which is the recommendations, report, definitions, and development. And I think the intent behind that is sort of the help in the putting all together for folks from the different committees. So, a lot of the other committees will -- and the discussions around the full Working Group meeting will help in sort of the worker bee drafting that may come.

And, again, in recognition that there needs to be common language and focus on what we're actually talking about, especially even when we're talking about something about, what is the data?

So, I just really want to flesh that out. I don't know that we're ready, at this point, for a vote. Technically, we don't really need to have a vote, just like technically before we didn't need to have a vote on the charter or the bylaws, but we thought it was important to do that, as well as the one vote that we took that I think was important to say, is there a need for this Voluntary Information-Sharing Working Group, which we all voted yes on. So, at least in December, we thought it was important.

I do think, at the end of the meeting, we'll have to go back and look at these subcommittees to give guidance to PHMSA with this and then, how we go about populating the different subcommittees and work through some of those challenges, especially as it goes to the description and the purpose behind them. Okay, Michelle?

MEMBER THEBERT: Michelle Thebert. I guess one of the things I think we should consider too is, along with what data, is who we share it with. Because the public is going to want something different than the industry wants something different from the operators and the regulators.

So, maybe even have different subgroups within the data of, how are we are going to share this with the public? Because a lot of this data, they're not going to have any idea what it is and they're not going to care, but operators will and the regulators will.

So, maybe, I mean, I guess it could get really big, if you start looking at it like that. Because each piece of data is going to mean something different to somebody. So, I mean, that could be a really big task, I guess, trying to figure out exactly what needs to be shared.

And then, like, how do you share it with the public? You put it on the PHMSA website and how is that going to be created, I know it's going to cost money. So, there's a lot of different issues, I guess, once you figure out what data is, how you get it out to people, along with letting them know it's out there.

Because I guess we should figure out the charter groups too. I mean, I don't know what the -- what it requires, it just says, share with -- I don't really know. I'm not even sure who we're supposed to be sharing it with, based on what it says. So, I would assume it would be all the different stakeholder groups. So, that's just --

CHAIR BURMAN: Alan, and then we'll go to Dan.

MR. MAYBERRY: Yes, on that note, just a couple of things. I think, I mean, the way I look at this is, we're looking to share information -- that we're trying to prevent accidents, so how do we do that?

Currently, I acknowledge, there is a level of sharing that happens, but we've also heard that it's not happening and not everyone does it, I think some of the good ones do, some of the better operators do.

But the other is, just getting around some of the proprietary legal issues that are involved, which is critical to help share information that could help prevent accidents. So, to me, that's the focus is, operationally, how do we make sure that information that's relevant to operations, safe operations, is shared with the right people and done in a transparent way, too?

Obviously, there's no need to -- there's nothing to hide, but the primary focus is to share operating data, if you will, that would prevent accidents, but do it in a transparent way. Okay.

The other thing is that, along with the homework that was mentioned, I know, related to considering these six committees, the other thing to keep in mind, and not to get ahead on the agenda, but we do have an item tomorrow to discuss the expertise of the committee and the potential need for additional members.

We have 24 members now, we could go up to 30, and we're going to have a discussion tomorrow on any needed skill sets that you guys might think are appropriate for this committee. And that could kind of flavor our discussion with the committee related to what committees we have as well, so you may be thinking in terms of both these identified six and then, potential other skill sets that are needed. Thanks.

CHAIR BURMAN: Dan?

MEMBER COTE: Thank you. Just a comment on the technology and R&D piece, and I think that goes to a more general comment that Alan made. This is really about sharing to improve processes before issues occur, at the highest strategic level. And the more that's fostered across the board, the safer our pipeline system will become more quickly.

Most of this, as I read this agenda as a distribution guy, really is ILI-centric. Now, most distribution companies do not have pipelines that are piggable today. And so, they're using a variety of direct-assessment technologies, which is compliant with the regulatory construct.

And at the same time, that is, at some level, I don't want to say being ignored here, but clearly as I read the technology and R&D segment, it doesn't even capture best practices in that area. And right now, it looks like the committee is essentially giving the distribution group a hall pass, saying, you don't have to share information, because you're not doing ILI.

In my mind, that's a strategy mistake. There ought to be another bullet under that, or my recommendation would be, another bullet under that, that talks about direct-assessment technologies and ways to improve those processes and identify best practices.

There are a number of technical challenges, as this committee and particularly PHMSA knows very, very well, to direct-assessment that doesn't capture as much data as ILI. At the same time, it's still a valid method of assessment for those non-piggable pipelines.

So, I mean, if we use that as an underlying strategy, this should be about being more inclusive of sharing valuable technical data across the industry to benefit the whole. And so, let's not get hung up on technology.

I was a little concerned initially when I saw an instant focus on ILI, which is clearly an industry best practice, but not universally applied today. So, let's not throw the baby out with the bath water, please.

CHAIR BURMAN: Alan?

MR. MAYBERRY: Alan Mayberry. I totally agree. I mean, my thinking on this, certainly ILI was called out by name in the mandate, but I see what we're setting up here as a framework, really, to share information, all information, that's relevant, not just ILI.

But I think that should be part of our outcome is to address that, that this is not just -- lends itself not only to ILI, but could be used for other systems or other information as well.

CHAIR BURMAN: Anyone on the phone? Oh, sorry.

MEMBER BUCHANAN: Certainly good points and I'm sure this will go well beyond ILI and you look at C3 there, you look at dig verification, there's going to be data that comes out of dig verification and the digs themselves, so that data will obviously be shared.

The only concern I've got, and maybe it's a comment, is that, there's enough bad press about pipelines around the world and how does the information get shared and that information, if it's misunderstood or misanalyzed by somebody or some group that could use that against the pipeline industry, rather than looking at it from our mandate, that we want to make this better, they say, well, pipelines are bad and some of this data verifies that the pipeline industry has issues.

So, I think we obviously have to be cautious about how that information is shared and even how it's written and how the reports are written and, certainly, that'll come out in some of the subcommittees, I'm sure.

CHAIR BURMAN: Sorry, my tent card was placed up. Could you please say your name?

MEMBER BUCHANAN: I'm sorry, Bob Buchanan.

CHAIR BURMAN: Thank you.

MR. NGUYEN: Hi. My name is Hung

Nguyen with PHMSA. In getting back to Ms. Thebert's comment about information sharing, has the committee considered maybe anonymous sharing? As I understand it, operators and certain vendors have issues with sharing proprietary information. Maybe that could be another subcommittee bucket.

CHAIR BURMAN: All right. So, I think right now, we're still sort of going through all the different issues that we have to address, so this sort of hits the bucket list of some of the things.

I just do want to say, sort of, from my perspective, again, this is -- looking at the PIPES Act and the specific Section 10 that dealt with this issue, as well as then the charter and the bylaws, I think there's a recognition that, in some ways if you read it just strictly based on that, that we're very limited.

It doesn't necessarily address a lot of the distribution issues and the ILI data is one that, I think, we've recognized from the beginning that, while ILI data for interstates may be utilized, there is a lot of framework beyond that, looking at near misses, as well as other things that can be identified.

So, I think we've recognized, the Working Group itself, from the first meeting, that we needed to look at, what was the appropriate expansion? Again, keeping in mind that the framework is on pipeline safety.

And it's really geared towards, when I look at it, is the data sharing that can help the industry and the regulators work together in a cohesive way that actually helps them identify things that can try to prevent the next accident and that help in that info-sharing back and forth, without having to worry that it's going to be utilized in a way that then prevents that, because you're then shut down because everyone's using it to start pointing fingers.

That is, sort of, not the, at least from where I sit, not the intent, that's outside of it. And that's why we do look to the airline industry and where they were at and how they dealt with some of those issues, that may be helpful.

So, just keeping in mind, when I'm talking about data sharing, it's not about data sharing for the sake of inundating either the federal or the state regulator with the information or the public, but rather, it's data sharing so that it can actually help people in being able to make assessments and look at the risks and how to manage and deal with certain best practices that aids in all of what we're doing overall.

And that really is also why some of the issues in proprietary and intellectual property and confidentiality and the airline industry was fully excepted out of the Freedom of Information Act, as it dealt with the information sharing for this purpose, not for other purposes, but for this purpose.

But there is a recognition that there's also going to the need to have some buy-in, not just with the federal regulators, but also the state regulators and, depending on which state you sit in and depending on where you may be, it may be harder to have that buy-in.

And those are some of the things that we need to be cognizant of and that, I think, is why it's important for us to have further dialogue and understand that this isn't going to be an overnight, tomorrow, we're not voting on the adoption of everything. And not even next month.

So, I just want to be clear that we're not looking to do this in a way that makes everyone leave the room and not come back. This is intended to help facilitate. Okay. With that, are there any further questions or comments on the phone or in the room?

MEMBER SUBSITS: Yes. This is Joe from Washington State. If anyone is looking at pipeline safety historically, there's been a strong tendency to look at -- learn from your past mistakes, learn from near misses, and I think there's a lot of positive to be gained by that.

But I think it's important not to overlook -- there could also be a great deal of energy or information gained by positive practices. A lot of times, a positive replaces a negative.

For example, if an operator has some strategies for enhancing internal communications with vendors, that information could become just as beneficial as learning from accidents. So, I think there's another way you can look at usable information in this type of sharing, database sharing.

CHAIR BURMAN: Thank you. And I see your tent card is up?

MEMBER AMUNDSEN: Yes. Eric Amundsen with Energy Transfer. I'll just, maybe, acknowledge that we might not want to miss an opportunity to learn from what the airline industry did and maybe get some more in-depth insight into how exactly, I mean, where did they start?

Did they sit in a room like this and kind of figure out, how are we going to do this? And where did they go from there? So, let's take the opportunity to learn almost step-by-step how they progressed that initiative and where did it ultimately end up?

And I think we're hoping to jump right to the end, but I think there's going to have to be a lot of crawling before there's walking and running. And so, let's learn, to the extent we can, exactly how they did that, what growing pains they went through, what system did they use? Let's not recreate a system if there's one available that they're using.

And I think it would also be useful to understand what is the information or what is the data? Is it airframe inspection data? Is it engine inspection data? Probably not, it's probably more along the lines of lessons learned and improved processes for maybe doing analytics on the data of those types of inspections.

But, again, without really knowing, we

don't know. So, again, let's take every opportunity and maybe that's a subcommittee in and of itself, go figure out or go learn from what they did and how they did it and bring that back to us.

CHAIR BURMAN: Sherina, and then Christie.

MEMBER EDWARDS: Thank you, Madam Chair. Sherina Edwards from the Illinois Commerce Commission. I think that Eric had a good point in talking about best practices and lessons learned.

But I think the real focal point is the collaborative nature and the fact that, even around this table and on this committee, there are key stakeholders from various sectors of the industry.

And we have to make sure that we, I think, allow that to continue to flow when we're thinking about these subcommittees and it's important to ensure that there are multiple voices on every subcommittee, so that we can have that collaborative nature, and then focus on the best practices.

Having a focal point on one particular sector, one particular portion of a sector, is not necessarily helpful, but I think the only way that we're going to be able to advance is if we each continue to focus on what we're all bringing to the table and make sure that everyone's voice is heard. So, I think that needs to be a focal point.

CHAIR BURMAN: Okay. Christie?

DR. MURRAY: This is Christie Murray. I wanted to, Eric, just touch on what you just described in terms of us, the committee learning from what the airline industry has done fits very well into that best practices category.

And I could see an example or a case where the parent committee would want the best practice subcommittee to tee up some of the things that you talked about with the step-by-step process on who they progressed, what their systems look like, how they handled their analysis, some of those pieces, and coming back to inform this group. So, that was an excellent point.

Also, I just want to remind the committee that the discussions we're having are certainly not an attempt to advance us beyond where the group is ready to go.

It's really to give you food for thought, so that we don't walk away not giving you an opportunity to kind of have a small preview of things that we know we're going to have to contend with moving forward.

And it's also an effort to help have these kind of conversations, because I think, to Dan's point, certainly what's shown here on the screen is what came directly, word-for-word, out of the mandate.

However, I think there is agreement that there's more that needs to be considered. And so, as you're thinking, as you're hearing more today from other speakers, we're interested in understanding, what are some of those things that aren't depicted that we need to be covering?

CHAIR BURMAN: Mark?

MEMBER HERETH: Mark Hereth. I just wanted to weigh in and reinforce the point that Eric made, that, Christie, you reinforced. I know that with INGAA, when we were developing a safety management system document, prior to work that we did within API RP 1173, one of the most valuable visits that we had was with Member Weener of the NTSB. And he shared the experience that the group that developed information-sharing went through in the FAA.

And in fact, one of the points I would add to one of the points that Eric made is, is to know the things that they would do differently today, having gone through that process, the things they wouldn't have done, to save us from making those mistakes or spending that time. So, I think that's a great point. And I'm sure there's people we can tap into in that process.

CHAIR BURMAN: Thank you. Is there anyone else on the phone who wants to make --

have a question or comment or discussion? And then, I do want to open it up to those in the audience, if they have comments that they want to make.

MEMBER JENSEN: Yes. This is Leif Jensen with Sunoco Pipeline. As it relates to onboarding and tasking the subcommittees, taking a step back, we have the actual Section 10 of the statute, we have the charter, and we have the bylaws, and it may help us as a committee help prescribe the tasks for the subcommittees if we author a clear mission statement and objectives of what we're trying to achieve.

It will help us cascade our goals and our objectives to the subcommittees if we author that. Short of just admitting the bylaws, the charter, and the statute, I think it's necessary.

We did have this conversation at our first meeting back in September and I just think it's warranted to help us align with respect to our objective. I don't think we need a subcommittee to achieve this, but perhaps a small group could author a draft.

CHAIR BURMAN: So, just so you know, because you're not in the room, there's a lot of people nodding, positively, not negatively. So, just want to share that with you. Before we go to the public, Christie, your tent card -- oh, no, okay. Does anyone in the audience have anything that they'd like to say? Other than when the break is?

MR. STOODY: Good morning, thank you. John Stoody with the Association of Oil Pipelines. Certainly want to thank you for laying out this strawman and giving us things to think about. Appreciate many of the elements on there.

One of them is the legal questions and how to make sure that people are comfortable with the process, so that they're encouraged to participate. And you mentioned the potential for expanding the committee, or at least adding additional points of expertise.

An additional person on the committee

might be, for example, a legal person, an attorney who'd be an expert in those ways and could provide advice to the group, based on that participation point.

On the last point there, with the mission statement, where at least I'm personally hearing and we've heard, not differing opinions, but different visions on what is the ultimate product of the group, is it information sharing, and I think the term was information for information's sake, or is it the safety learnings and the safety practices?

So, certainly, that involves sharing along the way, but really being clear on what is the ultimate product and the ultimate outcome through a mission statement will help prioritize and safeguard those.

And the final point I make is, many of the issues up there naturally follow the statutory text, the need for information, and that's the data itself. And there's then hints at the system that would house the data, that's important.

But I think also vital, and it's a little bit in there, but I don't know if it would be a separate subcommittee or how you would set it up, but the program, where are we going to be in three to five years from now?

How are we actually going to use this and how will it all work? Who will give information to who, who will house that information, who will review it and make recommendations, how will that go out to the Agency? Once this thing is up and running, what is that thing and how does it interact?

And then, obviously, some of those legal safeguards, information sharing, communications, all will be important to how and if this voluntary system works and people, you have active participation achieving the safety goals that you have. So, that programmatic aspect would be my final comment. Thank you.

CHAIR BURMAN: Thanks. This is Diane Burman. I just want to react to a lot of what we've heard. And I kind of look at this as also the necessity for making sure that we're gathering or we're exchanging data and the where doesn't necessarily have to be to me, in fact, it probably shouldn't be to me.

But data information that's really relevant and appropriate in real-time, that actually allows folks to say, wow, that's helpful information for my next steps in actionable actions that I'm going to take. That will actually help in, again, getting towards the framework of preventing the next accident and better pipeline safety.

So, to the extent that we have to keep in mind that, even in looking at it from a data sharing purpose, it may be limited to who is needing that information for that particular purpose.

It doesn't mean that just because you share it, it now has to go to everybody, because then that doesn't get to the goal, which is the actions that need to be taken or can be taken to be helpful in what we're doing for pipeline safety.

I also don't want to be the bride who's left at the altar. So, I'm very cognizant of the fact that this means that we may have to have a long, slow engagement before that. So, I'm very -- this isn't, while it's new and that it was put in the legislation in 2016, these are things that the industry, as well as regulators and the public have been talking about for a long time.

And, actually, I think it's the industry that has helped to make this more formal. And so, for that, I'm really kind of looking forward to making sure that we go slowly and appropriately in a way that helps us get to something that we can say, wow, that was good and very tangible and now it helps us.

But we do need to really flesh out some of these issues. It may even be appropriate to have a small group, I don't want to say a subcommittee, because then she has to add the seventh one, that really fleshes out, again, a lot of the devils are in the details here, and what that means for the subcommittees.

But that's also going to be, again, no subcommittee is meeting without Counsel, as well as the DFO, and they will have a clear mandate, in terms of the purpose and the description and the tasks.

And no subcommittee is making recommendations in a vacuum, it comes back to the full body. And, again, I don't think that we're taking a vote at this point. We are just trying to flesh out and make sure we capture everything.

One thing that was said at the December 19 meeting, that we didn't say here, is there was a need to focus on cyber-security, which probably touches almost every single one, and I just want to make sure that people are aware that that's something that we see as very relevant, or at least I see, I think my colleague, Commissioner Edwards would also, and she's somebody that can offer significant help to us, especially at the state regulator level, on those issues.

So, thank you. And now, we have -- I'm sorry, my back is to people, so I understand that there are people behind me who have some comments, so let's open it up to the public. Thank you.

MR. BOSS: Terry Boss with the Interstate Natural Gas Association of America. I really appreciate the group getting together on this.

One thing that I do want to point out, if you look at some of the legislative discussion based on this thing, clearly there was a focus on this thing and, as was pointed out, that perhaps there was some ILI discussions and this was an impetus to it, there may be some things out there with DA.

But this is a classic elephant with a blind person trying to feel the elephant, I think there's at least a dozen viewpoints of what this thing is and what should be shared. Information sharing is more of a tool for a lot of different things to get done.

So, I think it's very appropriate for this group to really figure out what you're trying to accomplish, because there are a lot of needs out there and information sharing can do it, but what somebody thinks this program is supposed to do or not do is, I think, a little confusing right at the moment.

CHAIR BURMAN: Thank you, good point. Anyone else?

MS. KELLER: Hi. This is Heidi Keller with the American Petroleum Institute. And I just wanted to echo a couple of the comments that have already been made, in that I think it's very important that the group develops a mission statement and, also, develop more of a strategic direction.

And perhaps that could be captured in the last subcommittee, and maybe developing an outlook of where we want to be in the next couple of years, similar to what John Stoody at AOPL said.

I would also like to support the comments made by Alan in regards to the fact that the group should develop a framework that looks beyond ILI and includes other inspection methods. Thanks.

CHAIR BURMAN: Okay. Anyone else in the public that has any comments? I do also want to point out to folks the charter, the legislation, the charter, and the bylaws, which has a lot of information, as well as the first meeting's transcript, which focused on some of the issues that we do need to address and including -- I think it was pretty much everyone was in agreement that we needed to not just be limited to the IJIs -- is that what -- ILI, sorry, I'm getting all my acronyms mixed up here.

And to the extent that, again, we're trying to get to not just focusing on the gathering of data and the overload of that, and really just trying to help unbottle this. So, with that -- okay.

With that, we're taking a break for 15 minutes -- is that what we're doing? Okay. -- for 15 minutes, then we're going to start promptly. And I'm going to run to get coffee, so I may trip over some people. 10:45.

(Whereupon, the above-entitled matter went off the record at 10:31 a.m. and resumed at 10:51 a.m.)

CHAIR BURMAN: We're going to get started. This is Diane Burman, for those who are on the phone. Are people on the phone back?

MEMBER JENSEN: Yes. This is --

CHAIR BURMAN: Great. I just really want to just spend one minute just discussing this morning's conversation. A couple of things. A couple of process fails.

I know that I got last night the, some of the slides, including the proposed subcommittee. I assumed that everybody else had. That's going to be rectified as we're sitting here. Folks are going to get the same slides that I got yesterday.

The other thing is that we are going to be discussing tomorrow some, what I call management processes issues, and formation of going forward in between the regular meetings.

We did have one planning committee meeting. Some of the focus I think is also on looking at the planning of the different subcommittees, and the drill down of their purposes and tasks. And then bringing it before the full working group.

But also trying to do that in between meetings through a planning, a full planning meeting call, so that we could sort of make headway in some of that.

I did hear people talk about the need for a mission statement. I once told someone that if I ever was tasked with writing a mission statement I wouldn't continue in any fashion. That happens not to be this committee. So, I'm not going to look to a mission statement, per se.

But it's really about, what are the goals and objectives, and the policy objectives that we're looking at. And that will come with understanding the tasks and the description, and really understanding what we are doing from an information sharing perspective.

And then how we go about that, and understanding what some of those challenges are that we're going to have to address. And that's really sort of the bread and butter of what this working group will be working through.

So, with that I thank everyone for their comments. Because it was helpful. But we will now look to the next agenda item, which is Integrity Management, In-line Inspection tools.

Again, this came about from the December 19th meeting, as well as the planning meeting April 20th. And the need for substantive knowledge on this.

So, I'll turn it over now to Chris McLaren to give us the presentation. And as, just checking that people will be getting emailed the PowerPoints. Okay. Shortly. Thank you.

MR. McLAREN: Thank you, Chairman

Burman, for allowing me to come speak today. And I think that was an important point about everybody will be getting the PowerPoints following this presentation, or pretty soon here.

Because this, the design of the presentation is to provide sort of a history, an overview of integrity management, leading into the integrity assessment in ILI technologies that we utilize, to sort of form a basis for our discussion of the data of the different processes that will be utilized, so that we all have a consistent frame of reference, and sort of provide a baseline of training.

It is a fairly long presentation. We are running a little bit behind. But this will probably take us to lunch. And with that, you can see we're going to provide an overview of what PHMSA regulates, hazardous liquid transmission, gas transmission, gas gathering, gas distribution, and liquified natural gas.

And there are a lot of operators, as referenced by our operator ID numbers. There's also, that number comes, and fluctuates, and goes. And if you count master meters and small LPGs we end up with a lot of operators. So, there's a lot of different assets and asset types that we regulate.

We've talked about the different technologies that they would utilize, whether that's in-line inspection, which is certainly preferred by the NTSB, and provides the largest datasets, all the way to direct assessment technologies, guided way, pressure tests, and others that can be submitted through our special permit process, and IM notification processes.

So, what is integrity management? Integrity management is a management system customized and designed through the regulation for pipelines. It's an integrated and iterative process for assessing and mitigating pipeline risks.

We look at both sides of the risk equation, the likelihood of the threat occurring, and the consequences of an incident occurring in that area. We look to integrate all available integrity related data and information during a number of these processes, whether it's the determination of what integrity assessment technology actually utilize, to integrating that data for risk mitigation measures.

So, IM, integrity management, is a safety process that an operator can use to assess and mitigate risks, in order to reduce the likelihood and consequences of incidents. Within the integrity assessment realm we are looking to identify those threats that form the likelihood side of the equation.

But of course, in remediating those threats we have to take the consequence, or where those threats occur, into the remediation decisions. It covers both proscriptive and performance based IM regulations. And it should be implemented as a comprehensive, systematic, and integrated approach to improve the safety of the pipeline system.

So, the history began in the 80s and

'90s as higher profile incidents began to occur at higher rates. Some of the examples are Edison, Bellingham, Washington, Carlsbad, New Mexico. And this heightened public safety awareness, as well as higher regulatory awareness and action, caused the need for the response to be a variety of things.

PHMSA's response began with looking at how we could manage risk through the risk management programs, and then how we could possibly do system inspections leading to the development and promulgation of the integrity management regulations to maintain safety.

Pipeline accident investigations tended to reveal that accident causes were situations not often addressed in proscriptive regulations.

That the performance based regulations in the management of risk offered an avenue where environmental consequences, and the operation environment in which the pipeline resided could be looked at more in depth to identify where risk mitigation measures needed to be taken. And that was not handled appropriately through proscriptive or minimum safety regulations.

So, one concept that I'd like to introduce here is sort of the idea of barriers. Pipelines have a variety of barriers that we'll discuss, especially as we start looking at threats, and how we look to address those threats, whether they be the design of the pipeline, the material it's made out of, the coatings that are applied to it, the cathodic protection, the other barriers that are put on it to address certain threats.

For instance, for excavation damage, and third party damage we implement different programs to address that, and try to identify and stop it.

But there are hazards. We put up barriers. And for an accident to occur it's typical that multiple barriers, or defensive, or safeguards must be, must have failed in order for the accident to occur.

I mean, the common, one of the common sayings about an accident is, the stars aligned at this point. Because there are a lot of barriers put up. But there must be a succession of failures typically for an accident to occur.

And it was hoped that the change to a performance based regulation would help reduce pipeline accident rates. So, within the hazardous liquid it's in, the regulations reside in Part 195.452 and 450. There's some definitions. And then, within the gas transmission, within Subpart O.

And one of the other key phrases within this slide is that, address issues that are unique to their operating conditions. You'll hear the term operating environment.

Because there are a lot of issues that are on the likelihood and the consequence side that occur locally, and aren't always a systematic or systemic occurring event. That these local issues need to be addressed, that are unique to a particular operating environment.

So, one of the things that we need to talk about is aging infrastructure. And that was one of the points of integrity management, was to increase the amount of integrity assessments on our pipelines, specifically due to the aging of our infrastructure.

Now, even with all of the construction that's gone on. We've had quite a boom in the 2000 and 2010s. Even with those construction booms we have not, we've only really maintained our average age, as we continue to rely upon aging infrastructure.

And these are some slides that provide some numbers. This is by percentage by decade on hazardous liquids, showing the date that it was constructed, and where that resides within that decade of construction.

And here is a little bit easier chart to look at. So, this is for hazardous liquids, showing when the bulk of that construction occurred, specifically after World War II. And then we've, that's a lot of the pipelines that we have out there. Those would be reaching over 50 years of age now.

For gas transmission, similar. After World War II large construction booms. That, it's just really hard to, even with all the new construction we're trying to do, to replace that infrastructure. And it continues to age. So, it's important that we maintain it safely, and continue to assess it with the best technology and data.

So, we have layers that we have implemented through the integrity management rule, and through proscriptive minimum requirements of the rule, to protect against aging infrastructure.

We look at operating safety factors, the stresses on the pipeline, how, what tests we had for the material in the welds. We continue to require minimums for cathodic protection, to protect against external corrosion.

And certainly the damage prevention of public awareness regulation promulgated in the recent near term have supported the reduction in third party damage. Certainly on transmission lines.

But ongoing maintenance we look to integrity management to, in a recurring assessment of the integrity of the pipeline. And then appropriately repairing and remediating those anomalies and defects found, as well as taking risk reduction measures identified as a result of the evaluation.

Hopefully supporting as shown in the Swiss cheese model as the right there, that these barriers set up and prevent those hazards from reaching an accident phase.

So, let's look at some of the significant incidents. Now, PHMSA has all incidents, significant incidents, and serious incidents. And significant incidents is probably the, one of the best ones to look at. It offers those significant incidents that have met a fairly significant financial or injury threshold.

And for those we see material weld,

equipment failure at 33.3 percent. You know, that's kind of a difficult cause category. Because it is fairly, it does encompass quite a bit of failure causes.

And on the transmission side of gas a lot of these can be related to relief valves going off for whatever reasons. Whether that represents a failure of the relief valve, or actually an over pressure event.

Within hazardous liquid when we start to see that number go up it's a little, it's quite a bit more significant. But certainly we see material and weld there, showing our, some of the anomalies we want to deal with, with integrity management, as well as corrosion and excavation damage.

And those are sort of the three significant ones we look at through ILI tools and other integrity assessment technology. And I seem to have --

All right. So, on hazardous liquid we can see that material weld and equipment failures is a larger number. And corrosion at 23 percent. So, those are those integrity management related features we want to look at, the focus of integrity management.

Now, we've got some more data here that is, some more bar charts that shows things. Certainly, we look back over 15 years. Corrosion has been the leading cause of incidents.

And I think that we've started to see that trending down as we've gotten better control of repairing those corrosion anomalies. And also replacing aging cathodic protection systems.

Equipment failure continues to be a fairly high one, a lot with the gas transmission relief valve impact. And excavation damages continue to sort of go down from where it was such a major issues on transmission lines years ago.

It's certainly still a very leading cause of significant failures on distributions systems. But on transmission lines it's being addressed effectively, or improved, with improved effectiveness by our other barriers of damage prevention and public awareness.

All integrity management, or certainly the beginning of, with liquid, hazardous liquid transmission, we began with four objectives that then were promulgated over, and supported the basis for the design of the gas transmission IM. And that was to implement management systems in pipeline operations.

Another focus was to accelerate the integrity assessments of these high consequence pipelines to address the aging infrastructure issues, and remediate those pipelines.

Also, looking to increase public assurance in pipeline safety is one of the focuses of an integrity management program. And to allow regulators to have an increased role in reviewing integrity management plans and programs. And being able to provide influence upon those programs to ensure they're meeting the minimum code requirements.

So, an integrity management programs

has, within pipelines, has several key areas. The first one is that they're focused on high consequence area. To meet the cost benefit analysis, of course, is the basic reasons for, the primary reason for any rule to be promulgated. But also to ensure that we're addressing the highest priority areas in an appropriate order.

So, the risk ranking of those areas will affect both the baseline assessment, integrity assessment of them, as well as some of the remediation discussion. And then we'll also utilize that risk analysis as we go through the program.

So, within an integrity assessment plan you must look at, typically you have to go gather your data or information, and do an analysis, utilize a risk assessment on that data, and identify the threats to the pipeline that need to be addressed by the integrity assessment.

Certainly we've talked about the importance of ILI. We'll look at some different tools for addressing those different threats.

As we start to talk about other integrity assessment methodologies, like direct assessment, depending on whether you're addressing external corrosion, you would use ECDA. If you're addressing internal corrosion, ICDA. If you're addressing stress corrosion, cracking, SCCDA. So, these tools are designed to address specific threats, or specific data needs that the operator has.

It's also very important therefore, to ensure that the data analysis and information collection gathered the needed information that's going to support this decision of which threats or integrity threats and defects that I'm going to go inspect for.

So, then a tool is chosen. And a integrity assessment is performed. And there are remediation procedures. Now, during the data that's acquired from that integrity assessment, or from that tool run, GIS or geographical information system data is looked at to ensure that we understand where those anomalies are occurring, what external or environmental conditions are applying to them.

Are they at a road crossing, under a river? Is it where a new housing development was built, and maybe the pipeline was dented. So we'll later today hear about some of the GIS information that will kind of be tied into that.

And all that information is acquired, and becomes part of the remediation decisions that have to be made. You know, following remediation you've learned a lot about your pipeline by the gathering of that data.

And that's sort of the data analysis piece that we're talking about here on this committee, is the acquisition of ILI data, what we learn in the field, what changes we saw, what we can do better, what we can learn more.

And then, it's the basis of that information that then updates the risk analysis piece. And it goes on to support the risk reduction measures determination, whether they're preventive measures or mitigative measures.

And that takes place also within the continuing evaluation and assessment, where the pipeline is looked at, its integrity is looked at as a whole. And it is determined when a reassessment of the pipeline needs to occur, whether that's five, seven, ten, 11 years, however many years later.

One of the important pieces is the performance effectiveness measures, to ensure that our integrity management system is operating as designed, and as implemented.

So, within integrity assessment methods, the primary means of assessing them is ILI tools, or pigs. Different tools are going to look for geometric deformation, such as dents, buckles, and even weld misalignment, and pipe expansion. Those can all be found with deformation tools typically.

There's also some of the ILI tools that will look for corrosion, such as metal loss and wall thickness changes. And then also for cracks, whether they be in the pipe body, or in a weld seam, or in girth welds.

And weld seams, when we talk about weld seams, we're talking about an axial seam down the weld. And you can see that seam right here. This is where the pipe was manufactured. It was brought over out of a plate. And it was brought together to form a pipe. And then it was seam welded

And when we talk about girth welding we're talking about a weld that would be basically here to join two links of pipe. So, you can see, these anomalies are located in very different directions.

For a seam weld anomaly we're looking axially down the pipeline. For a girth weld we're looking circumferentially, across the pipeline. So, that's an important thing to keep in mind as we start talking about the orientation of an anomaly.

There's also pipe strains. Pipe strains can be caused by, well, in the southwest region we have hurricanes that come through, and move pipes quite a distance as they, when they're offshore or near shore, as the come onshore with large landslides. In the northwest you have land movement, and in the west, that can occur, creating strains on a pipeline.

There's also strains associated with deformations that can be quantified to support the addressing of the deformation anomaly on what needs to be done. And then there are hard spots in pipe, which is a manufacturing of the plate issue, which can lead to cracks. Yes.

There's also pressure testing. And pressure testing is a one-time pressure testing of the pipeline to a sufficient stress to ensure its maximum operating pressure.

Now, failures of those during a pressure test can certainly give you a lot of information but the anomaly types, and what is in the pipeline.

It can also give you information about what the largest remaining anomaly could have been in that pipeline that could have survived the pressure test. So, there is information that you can gather from pressure testing.

Direct assessment of pipelines certainly gives you information about the pipeline, by identifying external things to is, such as the cathodic protection system, and other affects that it may have from other acting entities, like other cathodic protection systems, DC impressed current from transit, or other sources, AC induced currents from power lines, and other transmission.

And then, based on those anomalies and their grading, you can then go in and dig the pipeline to try to understand what your grading showed on the pipeline. There may be some comparisons of that data that may show some benefit, to ensure that we're getting the appropriate grading and remediation of anomalies on direct assessments.

There's other technologies, like guided wave, which has been proposed in the gas

IM rule, following an 18 step procedural requirement. And guided wave may have some benefits for information sharing, to ensure that it's being applied correctly, and doesn't have a misapplication that we can stop.

There's also other new technologies that are allowed into utilization, based on the use of the special permit process, or the integrity management notification process.

So, this is, integrity management, just like any management system, follows a continuous cycle. And here's a graphic representation of that.

At the top we started with the HCAs. We then assessed, did a risk analysis, remediated, and then went through performance measures. These are all continuous improvement loops. Continuous improvement is a requirement of any integrity management program. And so, there it is shown graphically.

So, what are some of these threats to the integrity that we talk about? We looked at materials by looking at the pipe. And we saw an axial seam, and had a girth weld described. It would be of construction. There's also other things that can take place during construction.

There's operations and maintenance issues that we need to assess. And then the integrity management needs to collect all that information, and decide how we need to assess it.

Firstly, on materials, on pipes and coatings. On pipe material we can have wall loss. We can also have in those seams cold welds, lack of fusion, and different, other different anomalies that can be latent for some time possibly, but then have been, then can begin to grow, and must be assessed for based on there being a flaw.

Within pipe material, depending on its age, the older material commonly had non-metallic inclusions, and other stringers and laminations that need to be accounted for. Sometimes they're not injurious, and sometimes they are.

And hard spots is a frequent condition

that's a superficial issue on a pipeline, that can then in the presence of cathodic protection can have problems with hydrogen cracking. And that's kind of, sort of a specialty threat.

So, pipe coatings have been, are applied to most all of our pipelines. There are a few bare pipelines around there. That data is available. And they are mainly of the older vintage. And most all have been removed.

A bare pipeline would have to have very good, have to be in a non-corrosive environment, and/or have adequate CP to survive.

Issues though with coatings, aside from just some of them don't age so well is being poorly installed, and sometimes having, and sometimes disbonding.

When a coating disbonds it can tent over, it can cover an area, and allow an electrolyte or water to get into the pipe surface, creating an area where corrosion may occur.

There's also, over girth welds,

sometimes a problem with, once the weld is made the coating that's done in the field over that weld not being, having, not having long term properties. Also, over the seam weld sometimes a coating can tent and create a void in there, which can allow electrolyte to collect.

And then, there are some coatings that actually shield cathodic protection from getting to the pipes, such that when they do fail, if they tent or cover, the cathodic protection can't protect the pipe following it.

On construction, some of the integrity threats are those pipelines that haven't been pressure tested to ensure the seam and mechanical properties of themselves.

And there's also installations issues, such as weld misalignment. And miter bends has not been allowed for a long time. But there are miter bend installation issues out there. And that's where a pipe, multiple pieces of a pipe are cut, and then form a curve or a bend.

Also, depth of cover. Pipelines have

a minimum depth of cover during construction. But that depth of cover is not required to be maintained. It is a re-baring, or re-lowering the pipeline to a lower depth can help ensure that excavation damage, and other mechanical damage doesn't occur to it.

And of course, during construction we see dents being put in. And also the use of inappropriate backfill, such as rocks being put in there that the pipe can lay on, and cleanup, such as boards and other material being in there.

So, one of the most important things about a successful IM is data. And data quality if expensive, difficult, and very important. How an operator responds to missing or suspect data is very important to ensure that the right threats are identified, and that the right knowledge about the pipeline is known.

Because we're all, it's all going to be supportive of making the right integrity related decisions. And data integration is one of the fundamental pieces of integrity management that supports not only the remediation, but also the preventive and mitigative measures that may be chosen.

Some preventive measures may be things like running close interval survey, and improving and replacing cathodic protection equipment. It can also be to enhance surveys, and patrols of the area. It can also be to recoat the pipeline in some larger cases. And also replacement should be considered as an option.

And coming out of that data integration also comes the reassessment strategy. And that would when I'm going to reassess the pipeline, at what interval. What growth of anomalies am I seeing? So, there's a lot of decisions that come out of that.

And on the hazardous liquid side, and this is sort of the structure of the regulation as it falls within 195.452. It also has the definitions in 450 for a high consequence area, which then goes back to unusually sensitive area.

And within the hazardous liquids piece

there's not only the people consequence, there's also the environmental consequence, which is very significant. So, it relies upon some other definitions aside from census data and other growth, area growth factors, such as unusually sensitive areas.

That would be environmentally sensitive places where water is sole source aquifers, sole source water sources, and other aquifers, as well as areas important to endangered species. Also, commercially navigable waterways are covered within that unusually sensitive area.

So, here's sort of a quick schematic of some of the way liquid pipelines are determined on where high consequence areas are. The top left is a populated area that is directly intersected. The next one on the right is a populated area that is indirectly affected

Now, how may that indirect effect occur? It could occur either through the event itself, such as is used in the C-FER equation on the gas side. Or it could be through a transport mechanism, which could be either ground transported, such as through gravity, down scale, or through water or other transport, or through the air in some cases.

And also, you can see on the bottom there a lake or marsh where they're indirectly affected by the product being transported from the accident site to the environmentally sensitive area. Just a couple more pictures about how the produce may pool and move.

So, the gas transmission rule is within Part 192. And Subpart O is where it's contained. And it utilizes for the determination of high consequence areas an affect primarily on people through the CFER equation, which determines a potential impact radius, based on the diameter of the pipeline, the pressure which it operates, and the latent heat content of the product.

The worst case scenario being that a failure could impact this large of a diameter.

And this is another place where GIS is utilized, as that potential impact radius is slid up and down the pipeline. And where it impacts an appropriate number of houses, or residences, or buildings, and/or particular identified sites. And HCA is identified.

And we can also utilize the class locations, Class 3 and 4, plus identified sites, to identify your high consequence area. And here is a showing of a sort of an impact radius, along with some of these Class 3 areas.

So, there's different ways to calculate the HCAs where the rule would apply. And the one thing I would say about a lot of the high consequence areas, that -- Well, wait. Let's go through one more example.

Here you can see this is utilizing GIS, sort of a primer for what we'll see this afternoon. You can see the yellow dots, and the identification of all of the residents and other particular sites, and how that determination of high consequence areas is a fairly rigorous activity.

But regardless of how much HCA mileage is identified, whether it be by liquid or gas, in order to assess these when using in-line inspection typically we are running that tool from trap to trap, from a launcher to a receiver over some distance, typically less than 100 miles.

And we are gathering information on much more than just the high consequence area. And so, that is why ILI is certainly preferred method, because of the information that is gleaned from it on much, besides there just being a lot more information.

But also we're gathering information on areas outside of the HCAs. Because there is quite a bit on gas. There's quite a bit that's outside of HCAs, 93 percent on liquid. And I think it's about 60 percent, yes, 59 percent outside of HCAs.

And remember, the numbers from liquid early on were, while there's 40 percent high, that can affect the high consequence area on the liquid side, it was about 80 that was getting assessed.

So, the integrity assessments are used to evaluate, remediate threats. And we've looked at some of these. We're now talking specifically about threats. Because that's going to determine the type of tool we're going to select, as well as the data that we're going to be getting back, and how we want to look at that data.

Now, of all these methods, just one more time to recap, we are specifically looking and talking from here on out about ILI. But as Dan brought, Dan Cote brought up during the discussion, and others have talked about, there are other methodologies where they may be fertile ground for looking at that data collection, and data sharing.

As PHMSA promulgated the integrity management rule industry got moving and created several standards. The gas industry developed the 31.8-S, and the liquid industry API 1160, about the same time the rules were coming out, plus or minus.

Also, to address all the requirements, procedural requirements of the integrity management system, ACI, NACE and ASNT developed certain standards that this group will probably be looking at as we go forward, such as API 1163 on in-line inspection systems qualification, and then the NACE guidance 0102 on ILI.

And then the American Society of Nondestructive Testing developed a qualification certification program for the in-line inspection personnel to be able to, for operators to be able to understand what level of expertise they were getting on the reading of the pig runs that were providing then with their reports.

And here's a little schematic. It comes out of 1163, showing how these standards tie together. You select the system based on the threats. And then you prepare and run the tool.

And once the tool comes out of the pipeline you validate its operation to ensure that you're getting good results, and download the data. You then analyze the data. And that's where the ASNT ILI PQ can come on analyzing that data.

And then a report is issued, which is sent to the operator. Then the operator goes out and performs digs to validate that data, and understand the accuracy of it. And also to remediate those injurious conditions.

So, let's see, what happened there? All right. I'm going to get the unity charts here soon, I promise.

So, we've looked at these threats again that we're assessing with our tools. And then, to go back and look at sort of the process that's coming through here again, to recap what we just saw in the 1163 diagram.

Here is an example of launchers and receivers, where a pipeline has a, either initiation point or a station point where it is convenient to run all sorts of in-line tools, whether they be smart or not, to support pipeline operations.

The end cap would be, the pressure, the barrel is isolated, pressure is removed, and this end cap is opened. And then the tool is put in there. And the tool is then run through operations. It is then captured and removed.

First off, there's all sorts of cleaning that has to be done. Cleaning of products in the pipeline, moving of liquids in a gas pipeline, and other solids. As well as in the liquid pipeline moving the paraffins and cleaning the surface, and getting it, not only to ensure that there's not the propensity for internal corrosion, but to also ensure it's capable of being in-line inspected adequately by a smart tool.

So, there's all sorts of things that can come out of a pipeline. This is atypical of what we typically see. But it is a picture to remind us that we must clean pipelines well before we inspect, so that we can get the best possible data.

So, deformation in-line inspection tools. And here is an example of one. You can see all the deformation fingers here. Sometimes it's encapsulated.

But this tool is looking for pipeline deformation, whether that be a dent, evidence of a dent from third party damage, or whether it be expanded pipe, as shown here, which was a pipe that expanded during a pressure test. And therefore, it was shown to be inadequate of strength pipe.

But there's all sorts of threats that we can address with a deformation tool. And we can look for girth welding alignment. We can look for where we have movement of the pipeline, based on landslides, et cetera, based on the strain being put on it.

And here's some more diagrams. When we start looking at dents, dents have particular, like right here. Dents have particular geometries.

And sometimes we can capture and

understand the significance of that dent through the high resolution deformation tools, to try to identify the criticality of repairing that dent. And typically when we have a dent on one side, it creates an ovality in the pipeline.

And here's some examples of mechanical damage, and how different tools see it. So, here we have this anomaly on the bottom, which has been mapped out. And it has a deformation tool, which has given us this enhanced image.

A MFL, or magnetic flux leakage tool, which we'll look at a in a minute, has created that image. We'll then be able to capture that image and this image with other enhancements or tool usages. So, there's all kinds of different ways we can gather information with different tools about an anomaly.

And when we start looking at metal loss, we're looking at some specific types of tools. We want to quantify metal loss. And that is corrosion. There can also be the identification of gouges and other crack-like anomalies in dents, which is some of the support that combo tools can give.

But typically what we're looking for is, a standard MFL tool is what's typically run. It is looking for anomalies that occur on the pipeline. And typically down to pits a quarter inch and larger.

Ultrasonics can also find and quantify metal loss very accurate, as long as there is a liquid or electrolyte, to be able to send the waves. So, they're utilized on liquid pipelines, and in slugs on gas pipelines.

And then there is the EMAT tool, or electromagnetic acoustic transducer tool, which is utilized in gas lines, because it can give very accurate results, similar to ultrasonics, without having an electrolyte present. And in recent years its progress and its technology has come very, very well along.

So, the high resolution magnetic flux tool has become very, very popular, and very consistent in its application. It's also been married with deformation tools.

Here you can see a very large tool on the bottom, large diameter with lots of different inspection technologies incorporated into one tool. And that's been a great help to the marrying of data, to ensuring that we're looking at the same anomaly with different technologies, to gain more information about its threat, and whether it needs to be remediated.

In the picture above you can see a smaller diameter tool with several technologies on it. So, the MFL tool utilizes a magnet, or two magnets, or a whole load of magnets to run down the pipeline, with a sensor in between.

So, this magnet is moving its waves through the metal of the pipeline. And when metal loss is sensed there is a flux leakage that the sensor picks up the difference for, and therefore, can identify that there is a leakage of the field out of the pipeline. And it can quantify that into an estimated metal loss.

And these tools are, in my opinion,

electronic marvels. They travel down the pipeline at significant speeds. And create and generate these data reports that are extremely accurate. And I think the long term use of them has caused them to gain much trust and confidence.

So, as the defect field orients differently, we may need to start utilizing other types of magnetically oriented anomaly, tools. Such as, here you can see a very thin anomaly that the, in the axial field, that the standard MFL tool with its magnets aligned in that direction may not be able to pick up and differentiate metal loss very effectively there. Whereas, here it did a lot.

So, we may want to utilize a different technology, like a circumferential technology, or what may be called an axial tool, where the magnets are oriented in a 90 degree different direction to gather that data. So, those are two different tools looking for two different threats.

Let's look a little more at the metal loss here. You can see how some of these anomalies come up. And then the report out, utilizing software from the ILI tool there can help enhance what the diagram is showing, and support remediation decisions.

And then, when those remediation decisions are made, one can go to the field and will map out corrosion, and identify depths. And this is the type of data that is then coming back, based on this signal.

And it would be shared from the operators, or the vendors performing that in the ditch analysis, such as that are represented here today. It would be providing back to the operator, and then to the vendor, to discuss what the results were showing, and ensure that all injurious conditions to the pipe were identified that could be identified, so they could be remediated.

Here is another application for EMAT, showing some pipe body cracks. It's a very large

EMAT tool. And why detect cracks? Crack detection's become a focus of some of our proposed regulations. And because we've seen a lot of issue with axial flaws and cracking for quite some time.

And so, you can see here a very large multiple tool set. And this is similar to what, except for some of the technology, what all the vendors would be able to provide is some sort of tool that can be coupled together, and then run to address different threats that were identified by the risk analysis and data integration that the operator needed to address for the pig run.

So, that working between the operator and the vendor to identify the right tool is very important.

And this kind of shows a diagram of the value of multiple datasets. And further goes to reinforce why it's so important to have good information analysis at the front end, to make sure that we are identifying what threats need to be addressed. And that the ILI tool vendor is aware of them, and other particulars about the pipeline specifications to run the right tool and make the right calls.

Oh, one thing I wanted to talk about before I left was, this is a new term, the XYZ, or geo positioning. So, not only are we looking sometimes to get good positioning data for the pipeline, to ensure we have a good smart line.

And sometimes to develop that smart line, so, we'd be looking for the smart line or geo spatial information, the deformation, and then the other ILI information.

And so, once we've run the tool we then start, we've then developed our anomaly repair schedule. We then go into the ditch to gather field information.

And now we've got, in the field we've not acquired data utilizing appropriate equipment to then be able to compare what the vendor provided as an as called number, and what the operator found with his crew as an as found. And we create unity plots.

And this is where we can start looking at some of the tool performance data, ensuring, you know, 90 percent of the time I am finding 90 percent of the anomalies, or whatever that, or is the tool over calling my anomaly depth?

Can I, is the tool performing such that my tolerance band can be tightened up, such that the tool tolerance can actually be considered less than ten percent? Or is it greater? Because that has an impact on my remediation, to ensure that I've removed all injurious anomalies.

All right. And so, the unity plot here shows the ILI measurement, which would be the as called from the vendor. And say the vendor called out a 60 percent deep anomaly.

And then, when the operator went to the field and excavated that measurement, let's find, what they found, we found one 60 percent that was actually 40 percent. And then as we come around here we found a 60 percent that was actually 65 percent.

So, I mean, this tool is calling a variety of 60 percent depths, and most of them are right around 60 percent. Now, there is measurement error both on the tool, as well as in the field.

So, there is a tolerance band that acceptable for this because of the different measurements we're having to take. And what we're looking for is that a tool is performing within the bounds that the vendor provided it, it's specifications.

So, ILI technologies and tools can be self-propelled, such as we've seen. Those tools have large cups on them that take the pressure of the pipeline. And they're pushed. Some pipelines don't have enough flow. And so, a robot or other pipeline must be, or other device must be self-propelled down it by itself.

Or sometimes there's not an ability to launch and receive the pig easily. So, maybe a pipeline has to be cut, and a tethered pig inserted into it, and fed down the pipeline, and then retrieved from a single area.

So, we've talked about a lot of different tools. And we'll see a lot of acronyms as we go through this work. Not only is EMAT one of the ones that's work, a lot of work's been put on in the last ten years. It's been very successful.

But ultrasonic shear wave tools are used for cracking, for crack-like features, versus the ultrasonic tools that typically catch and receive a wave, which are very good for metal loss.

Also, there's the need for mapping, for providing three dimensional geographical pipeline coordinates, to understand where the pipeline is exactly from above the ground, as well as how its depth of cover may be.

Other things that must be accounted for, especially on gas pipelines, where the product typically flows, quite often flows at a higher rate than the pigs preferred speed, is to have speed valve controls.

Okay. So, one of the standards, and we'll just kind of look at some big tables right now. But, that we may be looking at is what anomalies, or what threats, what are acceptable methodologies for assessing for those threats?

And here's a handy guide from NACE 0102, where we can see the different types of cracks or features that we're looking for, metal loss, crack-like anomalies, alignment, deformation. And we can see where the different types of tools are.

For instance, transverse MFL is going to be preferred for axial cracking. Ultrasonic shear wave is going to be preferred for crack-like defects.

And it's not going to do much about deformation. It may, it will detect it. But it's not going to really quantify it that well for us. For deformation tools we want to detect and size them for deformation.

For typical metal loss, where depending, we're going to use a standard or high resolution MFL tool. Typically, the higher the resolution, the more accurate the metal loss reading.

And so, those are the kind of tables that are in the standards, that have been developed to support the ILI use and integrity management programs.

And here's some graphic representations of some of the anomalies. And so, when we look at an anomaly like this, and anomaly that we can identify has a width, in terms of, that's like a circumferential direction along the pipeline. And it has a length. And that length is going to be axially down the pipeline.

So, what we see here with a standard MFL tool, magnetic flux leakage, is that it can see circumferential slotting very effectively. And it is very good in this general range. It's not so good with axial slotting and grooving. And pinholes are a very difficult flaw for most any tool really, except ultrasonic to see.

And so, that threat identification of what, the communication of what the vendor needs to look for on the pipeline from the operator is very key to choosing the right tool.

But if we employed a transverse MFL tool we can that it's going to be oriented towards seeing that axial slotting and grooving much more effectively than the MFL, because of the reorientation of the magnets. Whereas, now it's not going to see the circumferential grooving or slotting very well.

The other technologies that commonly used, ultrasonic. And this is the compressive wave, not the shear wave. But you can see a good general, high resolution mapping of the anomalies. But that it's going to have a little window that's around the circumferential and axial, where it's not going to be able to see that based on the wave.

But it has a good general appearance overall for metal loss dept. You'd have to use a shear wave tool, ultrasonic tool, to really see cracking.

So then, once the pig is pulled out of the trap, it's then loaded on the truck. It's tested to see if the results came back, and to download the data and do its systems check. And if it's confirmed to be a good run the data is then started to be analyzed and communicated to the operator. And that's when then the field evaluations can begin.

So, that is the end of the presentation. Are there any questions or comments? Discussion?

CHAIR BURMAN: Thank you very much. Anyone on the phone have any questions or comments? Anyone at the table? Anyone in the public?

Well, thank you, that was helpful. I do think though you may be on call after we take a break for lunch, and then we do the next agenda item. It may bleed into each other. So, don't go away, okay?

MR. McLAREN: Thank you.

(Whereupon, the above-entitled matter went off the record at 11:52 a.m. and resumed at 1:03 p.m.)

CHAIR BURMAN: I'd like to welcome everyone back. We're, just for a, sort of time check, we're going to go now to Agenda Item 3.

We're behind about an hour and two minutes, so we are going to, after Agenda Item 3, and after some discussion and Q&A, we're going to take a pause and look at what we have still scheduled, and also some key take-aways from Agenda Item 2 and Agenda Item 3, and focus thoughts on where we are from the objectives of the Working Group.

So why don't we now turn it over to Drew from Kinder Morgan. He's going to talk about operator integrity management implementation. Thank you, Drew.

MR. HEVLE: Thank you very much. My name's Drew Hevle. I'm Manager of Corrosion Control for Kinder Morgan.

I, first, I'd like to thank the

Committee for the invitation. I appreciate the opportunity to talk about our program.

First, a little bit about Kinder Morgan. We're five different business units, primarily pipelines, but some terminals as well in North America, US, Canada, and Mexico.

Our group supports the natural gas pipelines business unit, so we're focused only on natural gas.

Here's a map of our pipeline system. So, a big company. We've got 60,000 miles of natural gas pipelines that we operate.

Of those, we have 3,372 high consequence areas, totaling about 2,195 miles. That's the 2016 numbers.

So we do a lot of in-line inspection, 160 to 200 segments a year, typically, with multiple technologies.

That's, translates into 6,000 to 8,000 miles per year of pipeline assessed. So we're assessing quite a bit more than just our high consequence areas.

The scope of that amount of work requires that we have robust company standards and processes.

So we have an overarching ILI procedure that addresses, soup to nuts, our ILI process.

We rely on things like ILI service provider customer profiles to ensure that we get quality and consistent results.

We have documented processes within our company for, for example, our company analysts have work instructions to detail how we process the data once we get it.

We have a pretty rigorous field anomaly assessment and response. We have, certainly have response criteria, conservative response criteria and quality processes to ensure that we're getting good data.

And then finally, we do things with that data beyond what is done just with the, so it's a cycle.

And we'll start out on top with the

risk assessment, then it goes to the actual inspection where you run the tool.

You get the data and you analyze the data, and then you evaluate and remediate what the data tells you you need to, and then you close the process. That's our cycle.

We'll start out with risk assessment, and every in-line inspection starts out as the gleam in the eye of a risk assessment algorithm.

And that's what drives the determination of what method you're going to use to assess the integrity.

It drives, there's a number, and I'm, I've got a little bit of overlap with Chris's presentation, so bear with me.

I'll try not to beat the dead horse, but there are some kind of key concepts in here. There are four approved in the regulations.

There are four approved assessment tools, one of which is other technologies. And then consensus standards define the threats and the assessment tools that would apply to those threats.

There is some guidance in regulations, as well as in consensus standards on how to select the proper ILI technology.

And as an example, here are the 22 listed threats in the ASME B31.8-S. This is slightly different for gas, this is for gas pipelines.

It's slightly different for liquid operators. But in general, you have a bunch of different potential root causes.

This list is based on some PRCI research that was done to identify root causes of potential threats to pipelines.

So vendor selection is important, what technologies are offered, what are the specifications within those technologies, do their processes comply with the consensus standards on your pipeline? What are, what are the details on your pipeline that the tool has to go through?

There are different requirements for

different tools and different technologies. And sizes have different requirements as far as how quickly they can turn through a bend, bore changes for changing wall in the pipeline, for diameter changes.

And then what are the velocity ranges that this tool is accurate for? Internal inspection technologies, Chris did kind of talk about this.

You may need to, it's not an inspection, but a cleaning tool. You may need to clean the surface of the pipeline prior to inspection.

Some technologies have to get closer to the wall, and are less tolerant of debris and such in the pipeline.

Gauge tools will determine if a tool can pass through the pipeline. Typically, you would, you would run that if you'd never run a tool before to ensure that there isn't anything that would hold up a, the, you run a cheap tool so you make sure nothing would hold up the expensive tool or damage the expensive tool.

Then geometry and caliper tools can identify the location, orientation, and size of things like dents or deformations, other ovality changes.

We saw a good, a picture of pipe expansion, as well as restrictions, bends, changes in girth welds and wall thickness and other pipeline features.

Metal loss tools, there's a number of different technologies to identify metal loss, which is typically corrosion, either internal and external corrosion.

Then there are other tools designed to identify linear features. Stress corrosion cracking would be one, or as Chris mentioned, defects in seams or girth welds that have different orientations.

So there's different technologies. EMAT, shear wave, ultrasonic, transverse MFL. And then finally, what Chris called the XYZ tool, we typically IMU, inertial mapping unit, which is to gather location information to price, either precisely relocate where you are in the pipeline for a particular defect, or to improve your GIS mapping systems.

You can also use this information to identify pipe movement or identify, or you might have strain based on changes in the shape of the pipe.

Chris actually had this exact slide, this diagram to show certain types of tools are more accurate for certain orientation and shape of defects.

So this is typical for an MFL tool, and this is typical for a crack tool. And if you have both cracks and anticipate having corrosion, you might have to run two separate technologies to identify all of those defects.

Here are some examples of MFL tools. And here are some examples of crack tools. They may, at first glance, look the same, but they really are quite a bit different.

These are all free-swimming tools,

meaning that they're propelled by the gas in the pipeline.

In addition to the tool technologies, some other considerations in selecting a vendor are the reporting capabilities and flexibility.

Certainly if you're dealing with Subpart O assessments, there is a requirement for reporting within 180 days in high consequence areas.

If you're like us, getting 160 to 200 different segments worth of data, you want to get that data in the same format so that you can process it easier.

And so we have a, we have a format that we ask for all our data in. The vendor obviously would have to meet those reporting requirements in format, in timing, and meet them reliably.

So reliability is important as well, as well as, you know, the analysis of this data on the vendor side is key in ensuring that your results are accurate and consistent.

So the analysis process within the vendors, within their shop, is vital. Then performance, they have to meet our company profile requirements, and the profile defines all of the different details that we're asking for from the vendor with regard to acceptance criteria, with regard to specifications, with regard to qualifications in timing and reporting and all of that.

The tool has to be available, and there are times where it's difficult to schedule a particular tool on short notice because other folks in the industry are using that tool.

There has to be some flexibility in tool scheduling, and the reliability of the tool in getting data the first time you put it in and take it out is critical.

I mentioned our customer profile. This is, this is kind of key in providing consistent results and deliverables across our entire systems, across different tools and technologies from different vendors, and across multiple vendors.

So once we are, you know, we're processing this large amount of data, we have to get that data in a consistent format.

We have to ensure that the data quality is consistent across all of these different variables.

There are detailed analysis requirements, detailed reporting format requirements, and report timing. I've mentioned each of these as well.

So planning is important. Launching, receiving, handling the ILI tool. You have to ensure that you can operate the tool, run the tool at the proper speed to ensure that it's accurate.

There's a, once you've run the tool, there's a data quality assessment to ensure that the tool did run within its specifications, and that the data you're getting is accurate.

There are EHS considerations. Above-ground markers are used to track the tool, as well as to identify locations in space within the data.

And I mentioned, cleaning the pipeline as well. So that's when we go on to the inspection portion of this.

Here are just some pictures that I harvested off the website. Thank you, vendors for loading pigs into pig traps, launchers.

And once you run the tool and get the tool back, you do a data quality assessment review. You confirm that you have data coverage.

Do you have data from the whole segment? Do you have data 360 degrees around from all of the sensors in the tool? Do you have any degradation?

For example, you may have a little bit of over-speed in a run because a tool goes through a heavy wall segment and gets a little restricted, and then when it pops out, it might go faster than you had hoped.

And so you evaluate that degradation, and it's within your specifications to ensure that it's either acceptable or not acceptable.

Once you take the tool out, you do your DQA, then analysis, there's a preliminary report from the vendor.

That gets reviewed and may generate some action. There's a final report. And then finally, data alignment with all of the pipeline attributes.

And here's a typical reporting process for us. Some of these time frames may change, depending on the technology.

Some technologies require much more complex analysis than others. And so, if you're, for example, running a conventional MFL tool, the analysis is more straightforward than if you're running an EMAT tool or something more complex.

But typically, if, this is our process for most of our inspections, and it falls well within the 180 day maximum requirement within the Subpart O.

And then, you go out and, the whole purpose is to improve, of an assessment, is to ensure that the pipeline is safe.

And if there are things that identified that need to be repaired or evaluated, you go out, dig them up, and look at them.

And if they require repair, you fix them. So we identify anomalies into different categories based on the severity.

And those categories dictate what time frame you're going to respond to evaluate and repair those things.

We have a conservative response criteria based on failure pressure ratio and depth-based.

We also bake into this whole process, the consideration of tool tolerance and metal loss growth information.

So if you have a corrosion defect that you identify, it's possible that that corrosion defect is going to continue to grow.

And so you have to consider that in what you respond to, as well as how frequently, or how long you're going to go before you reassess.

And then a key is the selection and training of NDE personnel, because you have a tool that tells you something about these defects.

And then you have people go out and you measure them to confirm or identify differences.

And so the people who go out there have to be trained, have to be qualified, and have to accurately measure these in order to understand how accurate the tool is.

We obviously have an OQ requirement as part of the regulations. But in addition to that, we conduct training for each of the NDE technicians who does work on our, on our anomalies.

We require knowledge testing, and we perform field audits, and we have certainly identified opportunities for improvement within vendors and within specific NDE technicians.

And we have taken action if we aren't

getting the results that we expect. Then, evaluation and remediation.

We have a, what we feel like is a robust setup procedures for field anomaly evaluation.

We use advance technologies and have a conservative response criteria. Here's an example of an anomaly dig, and this is some of the documentation that is done once we expose an anomaly to show our evaluation.

And so here you see a small dent that's circled with a dotted line. You see some metal loss associated with that dent right here.

Okay, right here, some metal loss. This is the dent. And then you have other information to help you evaluate that.

You show flow direction here, which doesn't really have any effect on external corrosion.

You show the clock position around the pipe, 12:00 is top of the pipe. And so you go around and you have other information documented.

MR. MAYBERRY: How are your pipes that clean?

MR. HEVLE: I will say all of our pipes are that clean. Yes. This is, this is after the coating is removed.

This is after the surface is cleaned for evaluation. So, does that answer your question? Okay.

We use an electronic reporting tool for the NDE information. And this is, this is a back and forth process.

So we do quite a bit of information sharing with our ILI vendors. The NDE technician who is, who is not a company employee, is a vendor, completes the draft form.

They send it back to their QA/QC for review, and then they send it to us for our QA/QC review.

We have dedicated personnel, company personnel who review each one of these, what we call pipeline examination reports, PERs, or the results of an anomaly dig.

And then once we've completed our review, we send it back to the vendor to update, and they send it back to us to finalize.

So there's quite a bit of back and forth to ensure that the information that we're documenting on each anomaly dig is accurate and complete.

We look for confirmation of the proper remediation. And then once we're done, this data goes into a database so that we can use that information for other processes going forward.

For each anomaly dig, we develop a root cause. We collect enough information at each dig so that we can determine what the root cause of the anomaly is.

Some of the, some of the data points we collect, we measure pipe-to-soil potentials, both AC and DC potentials at the anomaly to evaluate the level of cathodic protection, to identify if there is stray current.

We examine the coating prior to complete excavation to identify, is the coating intact? Is it adhered to the pipe? Is there the potential for shielding in this location?

We measure soil resistivity. We measure pH under the coating to see if we're getting cathodic protection under disbonded coating.

We conduct magnetic particle inspection to look for cracks. And we do x-ray where we have internal indications. And then, we identify the root cause of the anomaly.

For example, it could be external corrosion due to shielding coating. It could be external corrosion related to AC stray current.

It could be a manufacturing defect identified as metal loss. It could be internal corrosion.

It could be SEC, various types of SEC. Here's an example of the, anomaly that was identified on ILI, and the root cause we determined to be AC corrosion.

And that's this really kind of isolated pit that you see without any other associated corrosion. Was that as clean as, about as clean, yes. All right.

Then, we have an annual review of NDE performance metrics, minimum, with our NDE vendors, and we have more frequent review if we identify concerns by our QA personnel.

We develop a weighted report, a quality metric by vendor and by technician. And so we provide relative weighting to the types of data that they're obtaining.

If they, obviously some forms, when you're filling out a form, some things are more critical than others, and so we provide some weight to that so that we get a good evaluation of the, of the quality of the technician and the quality of the vendor that we're getting.

We have an API 1163-based process for validation of the results. That includes a systems qualification process, in-line inspection system selection, qualification of performance specifications, system operational validation, system results verification, reporting requirements, and quality management system.

Those are all parts of the API 1163 standard. Here's a diagram. I'm not going to go into detail.

Part of the verification, and Chris did talk about unity plot. I wanted to mention it again.

This is an important tool in evaluating the, and validating the results of an in-line inspection.

On the vertical axis, here you have what the tool called. And on the horizontal axis, you have what you went out and actually measured.

And these, in this case, these are percentages of wall thickness from 0 to 100. And if your tool exactly matched what you went out and measured, every point would be on this 45 degree line.

And you see, there's, and this is, this is a, just an example. You see there's some deviation from that in where maybe the tool called it a little deeper than what we actually measured, or vice versa.

And the lines that you see there, the bands outside of the 45 degree line, are bands for tool tolerance and are specification for accuracy.

And so if the, all of the green dots don't fall on the line, as long as they fall within our acceptable criteria, then we're good.

If they don't, then we have different levels of validation processes that we would go through, up to and including a whole bunch of additional digs to validate the data.

And finally, we close the project. The field engineer, who's responsible for running the ILI project, develops a closure report that documents the completion of all of the required anomaly digs, and ensures that all of the documentation that's required is complete.

And once we are done with that, ILI data goes into our GIS system. We, if we ran and IMU, we use that to update our center line on our pipeline to make our mapping more accurate.

And then we have other processes that use this data. For example, cathodic protection assessments.

We, if we identify, if we identify corrosion growth and we have other measurements that indicates we have adequate cathodic protection, we need to evaluate why we think we have adequate CP but have corrosion growth.

It may be shielding coating, in which case, we would have a root cause telling us what the reason is there.

Or we may, we may, this may drive going out and doing some close interval survey to evaluate what's the level of our cathodic protection.

We use this information in evaluating short casings, and determining if we need mitigation within the annulus.

We use this in our internal corrosion monitoring and mitigation program. And the results of our data collection and anomaly digs are put in a database so that we can access that soil resistivity, we can access that root cause, we can access AC and DC pipe-to-soil potentials in the, in the database.

So finally, we go back and close the loop to an assessment. Again, we calculate the reassessment interval based on these results.

We evaluate our preventive and mitigative measures, and we review the threats to ensure that we have an accurate threat assessment.

There may be new threats. There may be threats that no longer exist. And then we have some process improvements, including annual vendor metric reviews.

These are both on our tool providers, as well as on our NDE service providers. We look at report timing. We look at quality. We look at the accuracy of the data.

Are they meeting our specs? Are they following our customer profile? Are they following the required industry standards?

All of that is reviewed on a, on a regular basis. That's my presentation. Thank you.

DISCUSSION AND Q&A

CHAIR BURMAN: Thank you very much. Before we get into some, taking a pause and looking at the different issues that we've dealt with so far.

Does anyone have on the phone any specific questions from a technical perspective, or comments on what was just presented? In hearing none, anyone around the table? Anyone in the audience?

Okay, great. So we just had, on integrity management, two agenda items that have been very chock full of information.

First off, around the table, it's probably not necessarily new information. For others, it is.

And you know, part of the issue is on getting back to sort of what's the goal of the working group?

What's the data that we're trying to get at? And what's the sweet spot for helping us get information that we need to fulfil the goals and objections, not only from the legislation, but from the items that the group has identified as important?

We picked these two items to primarily, from flushing out substantively at the December meeting, then on the planning poll on April 20th, that integrity management issues were very important.

But I'm wondering if anyone has any thoughts on, you know, how we're doing in terms of helpful to getting to our goals? Okay. Dan?

MEMBER COTE: Thank you, Madam Chairman. First, both presentations, in my mind, were absolutely outstanding.

They were delivered crisply, chock full of facts, and incredibly informative for us. So let me say that at the outset.

Having said that though, at this stage of the proceeding, I'm not sure that really helped us to drive us to a key resolution.

And I see that resolution being, and I promise, this may be the last time I say this this afternoon, then I'll take my Prozac, but the issue is that we haven't identified our key expectations on outcomes, what we're trying to achieve.

And on that basis, I guess, Madam Chairman, with all due respect to our agenda, I would recommend that no later than tomorrow morning, we sort of put a hold on our existing agenda, and this Committee have a serious discussion on what it is we really expect to achieve out of this that will promote pipeline safety going forward.

That's a key discussion that we need to have. It's a key enabler for all, what I see to be all of our future sub-committee work.

And without it, I don't see how we make much progress. And that, and that is intended to be no disrespect to the quality of those two presentations. I really do believe they were outstanding. Thank you.

CHAIR BURMAN: Thank you for your willingness to be frank. Well, so, one of the things is, I think that it's important for us to, as we, oh, Alan, you want to speak?

MR. MAYBERRY: Well, first off, I agree. I think our goal is to definitely get there.

And I think through these, this day and a half, we will get there and we should leave that way. I think the idea here was to educate, obviously.

We're laying all of the toys out on the floor, if you will, and we're going to sort through that. So it's educational.

But, and it can seem daunting, especially if you don't deal with this, that there's a lot to this process.

What we're dealing with, and we need to put a box around it, really as a subset of what you've just heard in the last two presentations.

It deals with sharing data that comes out of this, these very complicated processes that operators use to maintain their pipelines with ILI.

But how do we put a box around that to deal with, you know, specifically, the mandate relates to sharing information on in-line inspections.

So I think, I think we'll get there. We're just laying the toys out and we're going to coalesce by tomorrow. We've got to.

CHAIR BURMAN: Okay. Does anyone on the phone have any comments? Anyone at the table? Anyone in the audience?

So I'm just going to take a moment of personal privilege and give you my thoughts. I think it's really, also really helpful for me, from an educational perspective.

I am getting a lot out of this. I also am cognizant of the time and needing, well, when we're here, for all of us to leave feeling that we're making progress.

And I do agree with Alan that between now and tomorrow, we will get there. I will put out for folks that I just think it's important for us, for the rest of the day, and then when we're alone with our thoughts tonight, to really take some time to think about what it is that we are going to need to do.

Not just from a substantive perspective, but from a process perspective. We have time on the agenda tomorrow, and if we need to spend that time primarily focusing on the next steps in the processes and where we need to be with some clear, maybe specific examples, I think that's very helpful.

I'm going to give you my own thoughts right now, for food for thought. Years ago, I worked in an insurance company, in-house, in a large insurance company, doing toxic tort litigation defense.

I managed a whole host of commercial accounts, and had many different outside counsels that we hired.

And I got stuck with a job of going through old files, and assigning to different people, you know, what was appropriate in terms of it.

And I kept finding, like the first time, then the fifth time, and it was a whole long month process.

Found in the files, this, like, kind of weird, what I call, just like, didn't fit any category.

It's latex glove issues, and people were suing for exposure to latex gloves. It was before people even talked about it.

And I convinced my manager that this wasn't an isolation, that we needed to really kind of drill down.

And I think he didn't agree, but, and my colleagues, who then, it was before you did, had computers to run analytics, had to spend time going through all their files.

And then it turned out that we had a huge latex glove injury that, issues that we didn't know about.

And then we had to really coalesce and figure out if it rose to the level of a new toxic tort issue. And then all of the different things.

And it really was from, sort of that few case studies, and then working through it, and kind of everybody getting together who was involved in it, and adding their two cents and trying to figure it out.

And I kind of look at that as maybe one of the things that we need to look at in some ways, is how could we identify, you know, whether it's real or, you know, a scenario that we do from a case study.

And run alongside what the airlines and done, and figure out sort of where we go from there.

And that's sort of what I'd like people to think about for tonight, in terms of what that might look like.

I know a few people talked about, you

know, having the FAA and their experience, and maybe that's something that we can think about, of how we can get to some real practicalities with that.

And then, especially because we're talking about what information do we need, but it's hard to talk about it when we don't have something that we could, you know, look at and run alongside. So that's just my two cents.

So now, with that, I think I just gave everybody a homework assignment. So, thank you. And now we're going to go to, unless anyone has any questions or comments on the phone, at the table, in the audience? Okay.

Now, we're going to go to Agenda Item 4, geospatial pipeline data, and Amy Nelson, from PHMSA, will be talking about it.

We are on a time constraint, so we are trying to shave off a little bit of time. So, thank you. Amy?

MS. NELSON: Thanks for the introduction. I'm Amy Nelson. I am PHMSA's GIS

Manager, and I'll be speaking about the National Pipeline Mapping System.

In regard to what we were just talking about, I think it's, the NPMS has a unique niche in which it is a system that does share data among many different groups of stakeholders.

Literally tens of thousands of people every month access the NPMS data. So, you know, maybe it'll kind of get the wheels turning about what's effective in sharing pipeline data.

People in the room, how many of you guys are familiar with the NPMS? Okay. So, it's a lot of you.

I thought I'd, you know, put a couple of introductory slides here. I'll kind of speed through them since most people in the room are familiar with it. Hopefully that reflects the ratio of people on the phone as well.

So it's a GIS data set. We have locations and attributes of gas transmission, hazardous liquid pipelines, as well as LNG plans, and a partial set of breakout tanks.

Just highlighting that distribution and gathering lines are not included. Operators do have to submit to the NPMS each year.

That's in the regulations. I have a citation coming up. And I'll also be talking about the ways in which we display the NPMS data.

So having said that, you know, you might think that we have this warehouse of NPMS staff processing this data from all of these pipeline operators.

But in reality, our team is pretty small. I'd like to, you know, put a face with some of the names, since the majority of you are industry people, operators.

If you're talking to my staff, here are some of the key players. We've got some other folks, of course, who are not shown here.

The origins of the NPMS, it was actually conceived around 1998. There was a group called the MQAT, and that was industry and the government formulating the program and the data standards.

I was not at PHMSA at that point, so I can't speak too knowledgeably about the Committee, although I think some of you guys in the room were here.

Submissions were voluntary from that 1998 Committee until 2002 when the Pipeline Safety Improvement Act of 2002 was finalized, and then submissions became mandatory.

I wanted to point out that PIMMA, which is the online, now it's password protected, mapping application, was launched in spring 2001.

At that point, PIMMA, the mapping application, was available to anyone. Anyone could download the data. Anyone could go in there.

September 12, 2001, PIMMA is removed temporarily from the web as PHMSA figured out how to protect this data, which, you know, had a new idea of sensitivity behind it at that point.

And in 2015, we changed from the statutory requirement in the Pipeline Safety Improvement Act to actual citations in 49 CFR.

If anyone's interested, here they are. It's probably good if you're seeing this for the first time, because if you've seen it before, it might be from a certified letter from me, and you don't want to get one of those.

So a couple of statistics, just to give you an idea of the magnitude of the NPMS. We've got over 800,000 records in our geospatial database.

We have over half a million miles of pipeline. We've got approximately 1,300 operators who are required to submit each year, or tell us there's no changes.

And this is obviously not 1,300 different companies. It's 1,300 different OPIDs or reporting units.

A large company could have, you know, 20 OPIDs, but there are a lot of really small pipeline operators who just have a couple miles of transmission pipeline.

In some cases, less than a mile. And because of classified as transmission, they're still required to submit to the NPMS.

So whenever we're looking at information collection, regulations, requirements, we're always trying to balance these really tiny companies who have, you know, one or two full-time employees, and maybe no GIS capability.

Certainly no one on staff doing GIS, with, you know, the Kinder Morgans, the Exxon Mobils of the world who, you know, fortunately have very mature GISs.

We have about 9,000 government officials and pipeline operators who have user names and passwords to PIMMA, which is the password protected application.

In a couple of slides, I'll go through the difference between the different applications.

Hopefully, it can be confusing. Hopefully, I will clarify that for everyone. The public viewer is the public facing application, which shows a limited view of pipelines.

And I pull web statistics on this every three months, and the last report said we have almost 20,000 unique visitors each month to the public viewer.

So what we're currently collecting is dating back from this 1998 Committee. And you know, it's a pretty small data set.

So you've got OPID, operator name, system name, whether it's inter or intrastate. If it's a liquid line, whether it's low stress.

Is the pipeline in service, abandoned, idle, or retired? The data quality, that's really just positional accuracy.

What, you know, is it within 50 feet? Is it within 500 feet? Et cetera. There's different bucket categories for that.

The revision status, that's basically just, is this the first time you're submitting your line to the NPMS?

That kind of thing that helps us, on the back end, not duplicate lines in our data set. And then LNG plans are required.

Just point out, you know, the question that I get pretty much every single day is, can I have your data, from, you know, all different classifications of people.

And the shapefiles are only available to government employees, according to their jurisdiction.

So if you're a state employee, you could get the shapefiles for your state. If you're an operator, you can get the shapefiles for your OPID that you submitted, which you might think is not, you know, why do we do that? It's not useful.

But if you're the new guy and you're tasked with doing the NPMS submission this year, you don't know what's been submitted before.

If we give you the shapefile, sometimes it's easier for you to, just to modify those and resubmit them to us.

We have a couple of attributes which are optional. They are a subsystem name, diameter.

Diameters submitted, somewhere between 75 and 80 percent of the OPIDs submit diameter for their pipelines.

We also have commodity detail, and that's just kind of finer classification for certain categories.

Natural gas is one example. That's optional. Commodity description. So that's like if you were saying it's, you know, it's another gas, you may include what kind of gas it is.

Just, you know, very fine details about what the commodity is. And then breakout tanks, those are optional.

My guess is, I think last time I checked, we had slightly less than half of the breakout tanks in the nation were part of the NPMS.

So talking about positional accuracy, it's currently plus or minus 500 feet for the pipelines.

I think, you know, most of us know that that's not considered great accuracy anymore.

Back in 1998, you know, it wasn't so great either. The idea, I believe, back then, was to make it a small burden to submit.

So to lower the burden to submit, therefore, let's take data that's not as precise as we would like, but it's better to have something than nothing.

And you know, now, this has been on the books ever since. We have an information collection in the works.

It's proposing to tighten the accuracy standard to 50 or 100 feet, depending upon the pipeline class location, and the high consequence area status.

Does it or does it not affect an HCA? And we've gotten widespread buy-in from industry on this point.

I think everyone knows that it's time to update the positional accuracy for our pipeline data.

So as I was, you know, talking about

at the beginning, we have a wide variety of stakeholders. We've got PHMSA staff, emergency responders.

So those are kind of a subset of these federal, state, and local government officials. And we have the general public, of course, as well as the industry, you know, as well as people internationally.

Here's just a few things that it's used for. Emergency response support is one of our most vital purposes of the NPMS. Also, inspection planning.

So within PHMSA and our partners, how are we going to prioritize inspections? What makes sense in terms of an inspection route for inspection planning?

Risk assessment is a huge application, hugely important application for the NPMS. Given our limited attributes that we currently have, how can we help determine risk on a particular pipeline segment?

Researching and supporting our

existing and potential new regulations. How many pipes could this potential rule-making affect? What's the mileage that it affects? Where are these pipelines?

Trending analysis, very vital when you're looking at the occurrence of accidents and incidents. Where are they happening?

Is there a pattern? Is there a pattern that we can see in a GIS that we cannot see in tabular statistical data?

Helping the general public view pipelines in their area. So the public have a right to know about pipelines.

I just had to put this in here. To interpret the occasional psychic reading. This is probably the most interesting use of the NPMS I've seen in my 11 years at PHMSA, and about 15 years on this project.

I had an email, my contractor passed it on to me, from someone who said, you know, I'm looking for a grave site, and I went to a psychic, and she said that it's near a pipeline.

So here's kind of a map, based on what the psychic told me. What's the pipeline that I should be looking here?

So I actually believe there was no pipeline in our system. So I don't know what happened to this person.

But I have to say, that made me laugh. I put in here a couple of maps, just to kind of show some of the applications at PHMSA.

The problem I have, when I'm trying to find graphics for these presentations is, I cannot show you guys, you know, maps of pipelines, unless there's just one county and it's at 1 to 24,000 or greater.

So, you know, or courser scale. That's our data security policy. So I just pull, I spend like an hour looking at some interesting maps, which I cannot show, but I pulled a few that I could.

So this is a hotspot map. At one point, we were doing some research about the, a potential new regional office.

And so what we were looking at here was HCA, high consequence area, and accident history hot spots.

So places at which there's a lot of HCAs, and there's a lot of accidents and incidents normalized by the pipeline density across the United States.

So this, you know, this is not really a risk assessment, but it is a kind of a suitability analysis for, you know, where do we need to send inspectors.

If we're looking to set up a new office, you know, what might be a likely candidate here? All right.

So this one I just kind of put a big old polygon over the pipeline so I could show you some of the emergency response that we do.

This is from Hurricane Matthew. I think that was last year. And you know, these maps can be very sophisticated.

We can pinpoint the operators in the hurricane swath. This was, you know, the data from the, from NOAA, showing where the hurricane path might be.

So we're mapping the critical infrastructure. Here, it's a likelihood of power outages.

And during hurricane season, we're doing this all the time, when there are significant tropical storms or hurricanes.

I just want to shift gears just a little and talk about the high consequence areas. So we've got five different categories of HCAs.

Commercially navigable waterways, highly populated areas, and other populated areas are viewable to the general public.

So those are not protected. The first one comes from the Army Corps of Engineers, I believe. The second two come from census data.

It's those last two, drinking water, unusually sensitive areas in ecological USAs that are protected.

They are only available to liquid pipeline operators. And we are very much engaged right now in a project to update that data, which some of you may know, has not been updated since, it was 2001, 2002 when we formulated the last data set.

So I cannot take questions about that offline. So just, you know, one of the HCA data sets that I can show you, here's just a map of Alaska and the commercially navigable waterways on it.

We don't have the pipelines on this map, but you know, there's been some questions about, like, which pipelines cross CNWs.

And you know, here's just an example of some kind of, you never know what the day's going to bring at PHMSA, but it might bring an analysis kind of like this. All right.

So to sort out the different applications, really all you need to know is there's a public viewer, and there's PIMMA.

And you know, if you guys are all state, government, pipeline operators, you would be eligible for a PIMMA user name and password.

And here on this screenshot of our home page, you can see, down at the bottom left, you can apply for PIMMA access.

Again, remembering that if you're an operator, you can only see your pipelines. If you're a state official, you can only see your state.

And if you don't fall into that category, or if you want to take a look at a different state, go to the public map viewer on the right hand side here.

Click the use public map viewer button, and then you'll be able to see one county at a time.

And you'll be stopped once you zoom in past a certain level. The pipelines will disappear when you get too close.

We do a lot of outreach in the NPMS. We think it's very important to track how many people we're reaching, and to kind of figure out where to focus our efforts.

And I might just, you know, bring that

up for like a wider discussion for the working group.

You know, once you've got the data, how do you, how do you do the outreach? How do you publicize what you have and let people know?

This map is a couple years old. It was produced in May 2014. And we just map the PIMMA users by county.

So it's a little too small for those of us in the room, maybe, to see that legend down there.

But you can see that we've got some counties where we've probably been more effective to reaching out, and some less.

I mean, you've got to normalize this by the population, actually. So you know, there should be more users in areas of the country that are more populated.

But what I'd like to do is create a map showing, you know, three years later, who are, how many users do we have? Because it certainly goes up every year.

We got 9,000 users now. This is probably about 6,000 to 7,000 users, is my guess. And so in what areas do we have more users?

When we're doing outreach in a state that doesn't have many PIMMA users, can we highlight the NPMS and access to PIMMA?

This is PIMMA Plus. I said there were just two, I was kind of lying. There's PIMMA Plus, but it's kind of a secret. No, it's not a secret.

It's just available only on the PHMSA intranet. So unless you're sitting at PHMSA and you've got a login, you can't see it.

But I want to tell you, the only thing that's different, really, is that you can see inspection unit data.

So inspection unit the stretch of pipeline that an inspector inspects during one inspection.

So when an inspector goes out, they, you know, they do their inspection. They create data for that inspection.

That data is tied spatially to a pipeline now. It took us the better part of two years to map all of the inspection units on the pipelines.

So now we've got a way, and if I could show you the pipelines, I would, but I can't, that we could lay out the pipelines and click on a pipeline.

If it's one that PHMSA inspects, and remember, a lot of them are ones that our state partners inspect.

But if PHMSA inspects it, you can pull up the inspection records for that pipeline. So really, the only difference here is that in that drop-down menu at the top, you've got show unit attributes.

This will tell me what the inspection unit number and name is, you know, who the pipeline operator is, and then I can basically query the inspection records.

So PIMMA Plus, you know, has the most of anything. So it's got the query inspection unit part, then PIMMA has query pipeline history, which is who used to operate this pipeline, or what data did the operator submit, you know, over the course of several years?

That goes back to 2010. That's when we started building the history, and we could not retrofit the history.

It just wasn't possible with the way our data is. So 2010 is year zero, and every year we add on another layer of operator submissions.

So if you want to determine, differentiate the performance of a pipeline, no matter who operated it, you know, from the operator's performance, you can really see if this is just a bad pipeline, there's something wrong with it.

Something's not right about this pipeline. No matter who operates it, there has been, you know, there's been bad inspection issues.

It's useful for PHMSA to do that, to

differentiate between a bad operator who might, you know, have problems no matter which pipelines they operate.

But you know, more importantly, it lets us see who used to operate this pipeline. Because internally, you know, an inspector might know that, you know, this was an Exxon pipeline, but hey, it's not anymore.

So who did they sell it to? So we're trying to have that chain of events built in the NPMS to see how the pipelines attributes, how the operators changed over time.

It's actually a really big part of our job, because it takes a lot of work to build this history.

Because every time we get a submission, we've got to kind of be like detectives and fit it into the puzzle to say, well, you know, is this actually a duplicate line, or is this just, someone bought it and they re-surveyed it, and so it's coming out right next to the pipeline.

And as you guys know, there's some corridors where there's an enormous density of pipelines. And there might be 5 or 10 different pipelines running within a mile.

And so we're trying to figure out, with this pipeline history, scripts, custom tools we have, you know, which, did the pipeline move? What, did it actually move in the ground? Was it re-surveyed? Was it rerouted?

And so we match it as the years go by to the appropriate operator. Okay. The public viewer lets you query the incidents and accidents. Obviously gas and liquid operators.

So that's something that we made available to the public because it's based on publicly available reports. The operators submit the coordinates.

So you know, that part is not protected. So the public viewer has that, and of course PIMMA Plus has the inspection units, the history, and the incidents and accidents.

And on the right hand side, where you

see the map layers, I just, I'm just showing that in PIMMA Plus, because it's just for PHMSA staff, we've got the eco-sensitive areas, and the drinking water sensitive areas.

And here, I just turned on the populated areas around Dallas. They're kind of the tan blobs on the screen, just so you can kind of see what this interface is like.

And it's, you know, the same basic interface that we have for the public viewer. So this is just showing one county. And the blue pipelines are gas. The red pipelines are liquid.

And it looks like we've got some liquid accidents turned on. And we have the gas incidents turned on as well here.

So when you go to the public viewer, this is the type of thing you'll see. We updated the, both the public viewer and PIMMA interfaces within the past, about year and a half.

I also want to highlight, we have iPhone apps now. One of these is brand new. The PIMMA app launched, I think it was in May.

And we have a public, I mean, sorry, the other way around. PIMMA app launched late last year, and public viewer app launched in May.

So if you remember, we'll just go back to the homepage screenshot here, down at the bottom, you can see the PIMMA iPhone app and the public viewer iPhone app.

So if you click on that, it's not actually going to bring you to the app store. It'll just say, hey, go to the app store and search on this phrase, and you'll find it. Because our website is not really designed to be used with a touch screen.

So that just gives you information about how to download those apps. And please download the public viewer app.

My statistics say we've only got about 100 users of that. The PIMMA app has, I think it was 800, maybe 900 users last time I checked, which was at the beginning of June.

So let's get those numbers up. Download the apps. It's fun. You can, you know, you're traveling and see which pipelines are near you. You can identify on the pipeline operators.

So if you're looking at the public viewer iPhone app, you can just search, really, for NPMS public viewer on the app store. And you will not need a user name and password.

So you just see the interface here. You're going to select a state and a county. You can query the pipelines.

You can turn on and off the layers that you are able to see. You can change the county and state that you are viewing.

And I usually get a question, are you going to develop it for Android? No. We're not currently planning on doing that.

Basically, two reasons. First, the Android market is, what you call, fragmented, which means that if you develop an Android app, it's not kind of a one size fits all, like it is for iPhone apps.

And the second reason is that the ESRI technology, which we use, is not very compatible with Android, and we'd have to kind of redevelop some of our language in open source.

So we currently do not have plans to do that. If, I suppose if there was enough demand, we might consider that, but right now it's not really cost effective for us.

Just another screen shot from the public viewer iPhone app. So here, I'm just turning off both the gas and the liquid pipelines at the location where I'm standing.

And if I wanted to, I could see the accidents and incidents. I can identify on any of those, which will show me like the operator, the commodity, and then the system name.

And like we saw, that's pretty much, you know, the basic usable attributes that the operators are submitting.

And if you have a PIMMA user name and password, just search on pipeline information in the app store.

You'll, you know, need your PIMMA user name and password. And then, I specially created a screenshot so it doesn't show you more than you're allowed to see, but it looks, you know, pretty much the same.

You can do a couple of different things. Like you can send yourself screenshots from it.

But you know, basically, it's basically kind of the same functionality. You'll just see everything for your jurisdiction, as opposed to just limiting yourself to one county at a time.

And also, once you get closer than the 1 to 24,000, it's not going to shut off the pipelines.

I also wanted to touch on what we call OSAVE. It's the operator submission and validation environment.

It's a new way in which we're collecting data from the operators. It just launched this year, and we do have operator webinars every year.

We had four this year. I think we had

three back in 2016. So you know, if you, if you don't know what these are and if you think no one on your staff is attending them, if you're a pipeline operator, you know, check with me and I can send you information.

Because what we do is we take about two hours, and we say, hey, here's problems that we're seeing in submissions.

Here's how you can avoid, you know, having your submission be in limbo forever, and us emailing you about problems. And we also highlight kind of what's new with the NPMS.

So the big thing that was new this year is our new environment where an operator can go in. They can, in the top left hand corner, review their current data.

So it's only for operators, and you have to have your PIMMA account to log into this. You can review your current data.

So if you're the new guy on the job and you're saying, what is the NPMS? I don't know, but I have to do this submission.

Well, now I can see what was submitted last year instead of going through this data request process where, you know, it takes a couple days for us to validate you and send you the data, and we FTP it to you.

You can see it on your screen here, okay? You can view your submission history at the top right hand corner.

So you can see what was submitted for your OPID in the past several years. If you just got a contact information change, you know, maybe the technical contact was replaced, maybe your primary contact was replaced, you know, it used to be that you kind of have to just ask our staff just to change that for you, or you'd have to do the whole submission process.

So this is an easy way just to change your contact info. It's always good to make sure that it's accurate also.

And if you're making a submission saying that there's no changes, you can do it very quickly and easily in the bottom right hand corner there.

OSAVE has a lot of functionality because this is not really the proper audience. I just wanted to, just wanted to kind of highlight that we do have, you know, this way of, and it's not sharing data. It's collecting data.

But you know, is there a way that we can leverage some of these ideas and some of these problems that we worked out at PHMSA, you know, making it compatible for these 1,300 operators, thinking about what operators might want to do to submit data to us.

You know, is there anything that can help us with this working group? So here in OSAVE, you see just a, it looks like the PIMMA and the PIMMA Plus interfaces, right?

But up at the top, you've got some different options. Like you're filtering your pipeline data. You're reviewing your data.

There are ways in which you could just like tag a pipeline and say, hey, we don't operate this pipeline system anymore.

And that might be a lot easier for you than sending us a shapefile with that system removed, and kind of explaining what all happened to it.

Or if you're just changing, like, say, the commodity a pipeline carries, or changing its system name, you can do that online.

You don't have to go through the process of sending us the transmittal letter and, you know, this and that, like the five components of a submission.

So we were trying to make it easier for operators to submit their data to us, and especially data that has small changes that really shouldn't require the operator's expense of preparing a whole submission.

Or, you know, honestly, PHMSA's expense of going through all the QC checks, going through all the processing, putting that back in, when you're just changing something pretty minor.

So far, we've gotten very positive feedback on this. We are asking all operators to consider using this instead of the old method.

And you know, the majority of them, the vast majority have been happy with this, and they think it's a big improvement over FTPing us shapefiles. Okay.

Looks like I, a couple blanks there. Just an example of how an operator could pinpoint, if you're looking for a specific system because something changed about that system, you want to find it on the map and you might find it by doing a query based on, like, is it inter, intrastate, based on its diameter, things like that. All right.

So try to make up some time for us here. This concludes my presentation. Just showing you on the left, this graphic that we have at DOT, again, back to that idea of promoting awareness of GIS, which is, you know, really the, one of the biggest problem about when you're trying to promote awareness of any new system, any new initiative, I was on detail to write a strategic plan for the entire DOT about

GIS last year.

And one thing that I thought was important was to have a graphic. Because, you know, I have this outside my office on a poster, and people come by and they say, oh hey, what is that?

And it's a good opportunity to talk to them about, you know, what is geospatial? What is GIS? Because a lot of people don't know.

And I understand, this is not, you know, a GIS group. But you know, could we use a graphic to, just to kind of show that we are trying to share information?

Something that, you know, connects to people at a level, as, an almost like subconscious, but like, promotes interest and it just kind of sends a message in a very simple, direct way.

So that's all I've got, and you know, please, if you have questions now, that's great. If you want to talk me offline, that's great too.

DISCUSSION AND Q&A

CHAIR BURMAN: Thank you so much, Amy. Does anyone on the phone have any comments or questions? Anyone around the table? Yes?

PARTICIPANT: Yes, I just, out of curiosity, I just have one question. It's really cool to have this underground geospatial network or mapping.

So besides the network you guys are working on now in GIS, is any plan, or you guys already did that to integrate additional information, like usage information?

Just like highway mapping, you have like traffic information. How about those kind of underground pipeline systems? Do you have any usage information on that?

MS. NELSON: We do share information with a lot of the, of other modes, and we do some analysis projects.

Most notably, I would say railroads, pipelines and railroads that share a common corridor.

And you know, if one crew is out

working on the railroad, they should know there's a pipeline in that same corridor.

So that is not something that we've brought into the NPMS, but it's something that, you know, internally, we do have plenty amassed where we bring in information from other modes. It's just not kind of within our purview to display it on these NPMS applications.

PARTICIPANT: Sure. One of the reasons I ask you this is because in some scenarios, like natural faults scenarios, things happen very quickly.

And you know, if the input depends on operators submission, sometimes it might be not the real time.

So is there any like, you foresee any capabilities of doing, like, self-sensing or integrated sensors the pipelines to, for the improve this kind of mapping --

MS. NELSON: I don't --

PARTICIPANT: -- on the state-wide?

MS. NELSON: Yes, I don't think that

would be something that PHMSA would be able to do.

Just to run you kind of through the work flow when we do have an accident or incident reported, we did set up an ArcGIS online environment, which is something that the regional office can all tap into, and they can all put information on there as it becomes refined.

And so first you hear, oh, there's a report of an accident. It's near this highway. And then you get a coordinate maybe a couple hours later.

And then, you know, one region is going out there, and they've got information they want to add to the map.

So the ArcGIS online environment allows us to collaborate and to refine the map, you know, more of in real time and share it with the folks who are working on the emergency response.

PARTICIPANT: Thanks.

MS. NELSON: Sure.

CHAIR BURMAN: Okay, great. Does anyone else have any more questions on the phone? At the table? In the audience? Okay, great.

Now we will move on to our next agenda item, which is operator assessment tool and GIS implementation. And actually, I think we're actually back on track, time-wise.

And then, just so people know, we're going to take a break after David. So, thank you.

And just keep in mind also, food for thought, thinking about a lot of the information that we're hearing, how can it be helpful for your homework assignment when we move forward tomorrow in looking at process and next steps.

MR. NEMETH: Hi there. My name's David Nemeth. I'm with Energy Transfer, not Kinder Morgan. My name tag says Kinder Morgan, but I am with Energy Transfer.

I'm in the technical services group, and our group does the GIS system, engineering records, and as-built services.

And I wanted to thank the Committee for providing me the opportunity to speak here. And what I'm going to talk about is our use, well, kind of a little bit of a history of GIS in the, in the pipeline industry, and data integration. Here we go.

This is our pipeline system. We have about 80,000 miles of pipe on-shore, off-shore, liquids, gas, gathering, mid-stream, long-haul transmission.

Range of installation is from the '30s to the present. So quite a wide variety of construction techniques, pipe, commodities, all of that.

So it's definitely a challenge and wide network that we have. One of the cardinal sins of a presentation is to put a lot of words up there, so I wanted to make sure that I did that. No, I'm kidding.

What I'm going to talk about, we'll wind up with this. There is a lot of words on here, and mainly what I wanted to show here is that GIS has become an enterprise system.

I mean, it used to be pretty small. And this wasn't that long ago that GIS only happened by a few people.

It was used by a few people, but now it's become pretty mainstream and offers a lot of capabilities.

And some of those items across the top there, we're going to talk about. So what is GIS?

Amy did a great job of talking about that. GIS, we put the where in everything. Because everything is somewhere.

It's a system designed to capture, store, manipulate, analyze, manage, and present spatial or geographic data.

And the other main thought here is GIS can relate un-related information by using location as the key index variable.

So if two things or three things are loaded at the same spot, then you can analyze those together without having a foreign key or a direct link between those, between those features.

Google. That's GIS. The navigator in your car, that's GIS. So it's become, it's become very mainstream fairly quickly.

A little bit of history. This is where we started. And like I said, this wasn't that long ago.

We started with paper records, paper alignment sheets, boxes full of data. And this was our source data, along with, what we had were maps that were showing one mile of pipeline.

And we had all these books. And literally, let me go to the next slide. That's the next slide.

That's how many books there were. That much information that we had to go through. And we sat down an army of people to sit there and key that in.

But that's really not the people that we sat down. Because in 1990, there wouldn't have been that many Apple devices out there.

But we did. We brought in probably 30 or 40 people to sit down and manually key in all of that pipeline information.

And then we would relate that to the pipeline through the spatial link. People probably remember this.

That's Eric back in 1990, where you go into a special room, you had to have special access.

It was freezing in there and the computers were huge, and they took up the whole room, pretty much, and it had to be, had to be specially cooled.

So back when all of this started, it was very low tech. Not very many people had access to it, so it was low availability.

There were high volume, thousands of miles of pipe that was non-digital. And virtually there was no digital data.

It was paper. It was survey notes. It was material lists. Those types of things, that we go back to now for our verifiably, traceable, complete records. But those were all hard copies.

We would digitize the center line. No GPS. The military had GPS, but they hadn't released it to us yet, but there was virtually no GPS that we could use.

We had manual surveys, meets and bounds surveys, linear surveys. Like I said, we needed an army of data entry people to capture the data in that special cooled room.

Whereas, 30 years later, or 20 years later, this is what it looks like. I mean, it's your data.

It's a server, portal to that server for people to use, and then applications for access like NPMS.

So it's gotten a lot simpler, a lot smaller. It's higher available. There's free, and free is very relative, believe me.

So this is kind of the history of pipeline databases, a little bit. In 1994, kind of the first pipeline database effort that was made was an ISAT model, integrated spatial analysis techniques.

There was a team of industry people that got together and came up with database tables, database columns, what we wanted it to do, what we wanted to analyze, those types of things.

And to be honest with you, the first effort was to generate a map so that we could use digital data to generate a map.

And kind of within our circle, we had a little joke that 10 years and $10 million later, we can have a map.

So, but it's come a long way since then. That was, that was kind of the start of that.

And then pods came along, which was a data standard that some folks use. The next one was 2003, ESRI released ArcGIS pipeline data model. And then most recently, 2015, utility and pipeline data model.

So these are all, you can go out to

their website and download these models for free, but the issue that you have there is the model's free, but it's the data that's going to cost you, you know, to sit down, put all that data in.

And once it is digital, migrating it from one model to another isn't as difficult, but it's the investment.

It is the data that is, that is the investment. There's also land bases out there. Like I said, when we started, we had people sit down, digitize seven and a half minute USGS quads for thousands of miles.

And that was our land base. And then as data became available, digital data became available, we replaced that with imagery or electronic data that was free.

And the government, you know, the government has provided some of that. Our data source now, instead of those books and all those records for new pipelines, is right here.

A lot of our new pipeline projects come in on a USB drive. It contains the survey, the material, the pipe data, the valve data, everything we need as-built the pipe.

And then we get delivery of the hard copy records as well. We do this so that we can decrease the amount of time that it takes us to put that data in the database, from when the pipe is in the ground to when that data's available in our database for our users to use.

We're getting much better at that. We used to wait a little longer than we do now to get that data, but we're pushing that ball forward so that as construction goes, we're right behind them.

We're getting GPS surveys on every weld, lat, long, and elevation of those welds, and getting a point every 40 feet on a pipeline makes it really accurate.

So we're, we've come a long way from where we were just not too long ago. So today, there's, it's high tech, it's high availability.

We have 4,000 or 5,000 users that access our data across our company. High volume of data.

Every weld, all of the coding, all of the right of way, any, you know, all of that information that you need to as-built the pipeline pretty much comes in electronically.

The free land base, like I said, imageries available, LIDAR is available, spectral imagery.

So there's a lot of analysis that you can do from some of that free information. There's a new release that one of the vendors just put out that has just a ton of data.

It's called Living Atlas, there's probably 2,000 different layers of information available out there that is just, it's mind, it's mind-boggling.

You really can't sit down and go through it all. It's got date of, you know, date corrosion values of the ground.

It's got bedrock, you know, depth on the ground. All sorts of nationwide data. It's highly accurate. Our center line is highly accurate now.

Digital property polygons, and almost to the point where you could do all of this on your cell phone.

Like Amy said, they just released an iPhone app for NPMS, so it's come a long ways. I'm going to talk a little bit about Energy Transfer's GIS implementation.

Our mission statement, engineering records as-built and GIS team's mission is to promote safety, compliance, reliability, and environmental stewardship through data acquisition, data integration, and information publishing.

Probably the most, well, one of the most important things up there is the information publishing.

Across our organization, we publish almost 100 percent of our data. The reason we do that is typically what we've found is, people aren't afraid to tell you when you're wrong. And that makes our data better.

So they'll send us mark ups or they'll send us information that says, hey, this needs to be changed to this, and we'll do that.

Our group process more than 2,000 projects per year across our organization. Large capital projects.

Some of you are probably familiar with those, acquisitions that we have. So all of that data gets integrated into our GIS.

This is just the data model here, showing that there's different tables. Really, databases aren't that complicated.

They're tables, and those tables contain columns that contain data. And how you reference those tables together is kind of the magic, I guess.

But, like, for instance, the pipe segment table, what's in there is what you would expect.

The OD, wall thickness, grade, long seam, manufacturer, date installed, those types of things.

And that's the information that we populate when we get that information in from our, from our projects. Not only the capital projects, but maintenance projects.

So some of the data that's in there, there's facility data, inspection data, operational data, survey data, land owner data.

All of that is integrated into our GIS. Kind of our thought is, we integrate just about every piece of information that we get.

All of our corrosion control data is in there, the CIS surveys, DCVG surveys, cathodic test points, rectifiers, all of that information is integrated into the GIS.

All of our inspection data, in-line inspection data. So geometry tool data, MFL data, any of those in-line inspections.

Our CIS data is integrated into the database, along with all of the facility data. We do analysis for MAOP, class locations and HCAs.

That's all located and housed in the

GIS, as well as the operational data. For instance, pipe inspections, when they go out and expose the line.

All of those are integrated into the database. And the reason that I'm bringing this up is we're going to get to a point where we've integrated all of this data, and I'll show you the, one of the products of that data integration.

Some of you might have seen that before. The historical data, if we cut out a 20 foot piece of pipe, that stays in the database, just in a different status.

So we have in service pipes, we have archived pipes. So different statuses for the pipe. This looks probably familiar.

This is similar to what Amy showed you. This is our pipeline network over the imagery of the US.

We zoom in a little bit to one of our compressor stations. And these are feature layers. So those are the different pipes.

In this area, there's four pipes going east to west, and two pipes coming in from the south.

If we click on one of those pipes, and it's kind of hard to see there, but you'll get information about those pipes.

You'll find out what the OD, the wall thickness, that kind of information is, when you click on those pipes.

You can click on them and get other information by pipe segment. So each, you know, zero to five is 26 inch, 3-12, 5 to 10 is 26 inch 500 wall.

So very, very detailed information available across the organization. The inspections that we've done, I know you can't see it very well.

Is there a little pointer on this thing? This one? Oh. Right there, we've gone out and dug up that piece of pipe, and there's a link to the inspection right there, so that when you pull that up, it shows you what they found when they did that inspection.

The pipe-to-soil, the coating condition, the attributes that they discovered when they exposed the line. Excuse me.

Anomalies that are within the range of that exposure so that, while that line's exposed, if there are critical anomalies, they can remediate those.

And then we're able to run web reports from those. This particular report is what we call an integrity control event report.

Chris did a great job with that presentation that he did, and those tools are just a wealth of knowledge from somebody in GIS.

I mean, it tells us, do we have our Ts in the right space? Do we have our wall thicknesses in the right spots?

Do we have any feature along the pipeline that that tool sees, it tells us if it's in the right spot.

As well as, when we get that tool data in, that's how we align that data with the pipeline.

We align it from the launcher valve to the receiver valve, and then all of the gate valves in between, all the Ts and taps, all the features that we can see in that tool run, so that when we calculate burst pressure and the characteristics that our integrity group want, it's accurate and it's running those calculations on the right pieces of pipe.

And this is a report that we get after load that data. It tells us how accurate is that information from the tool compared to what we have in the database?

Our integrity group goes through and verifies any of that data that is out of the range that they want, and then they'll reload that data and we'll run the stored procedure to calculate burst pressures.

So along with all of that data that we have, the facility characteristics, CIS data, the corrosion control data, we have coupling data that we have in there.

And the coupling report that we've created for our integrity engineers is pretty interesting because it uses the ILI data and the geometry tool data to calculate the bend at the coupling.

If there is a bend at the coupling, and how critical is that bend so that they know if they have to go out and fix it.

Casing data, crossing data, repair data. Again, the regulatory class location, HCA data, those types of things.

And then we take all of that and we generate sheets along the pipeline, and they can go into this map, click on one of those links, and they'll get this sheet right here.

And this is after we've integrated all of that data. And this sheet changes fairly frequently.

We've recently added low potential areas, if there were any that haven't been remediated.

But typically they get remediated very

quickly. But LPAs, and we'll zoom in a little bit so that you can kind of see.

We have current ILI run, previous ILI run, corrosion growth rate by joint, anomalies per joint, total weld, or total metal loss by joint, previous CIS, current CIS, and then low potential areas, and the, and then pipe characteristics.

So we integrate all of that data, excuse me, along with our inspection data, and our integrity engineers can go through these sheets fairly quickly and see if they have any issues with, that are consistent.

For instance, if you have low CIS readings here, and a lot of anomalies up here, you know that something's going on and they need to go out and check it out.

It's not, it's not to tell them where to go dig. It helps them to find where to do further analysis.

So the HCAs and class location areas are on here as well. So this sheet is used a lot by our integrity engineers.

Our groups, the GIS engineering records and as-built group's tasks that we continuously perform, this is our every day job, class location determination, HCA determination.

We house all the MAOPs and MOPs, DOT annual reports. Amy knows that, right Amy? The NPMS filings, Texas Railroad Commission reports, T-4 permits, QA/QC, the data that comes in, the as-builts.

We get a lot of special mapping requests that, what if we do this, or what if we do this? So we take care of those.

Shallow cover, low potential areas, river crossing approach. So some of those operational inspection things.

We have hooked our data to SCADA, all of the telemetry data comes into GIS and is displayed in the gas control so that they know what's moving through the pipes.

Threat assessment and risk assessment is done in this database, generate the alignment sheets and the pipeline integrity sheets.

So it's pretty extensively used throughout our company, because I think of the data integration that we do.

Our internal customers here, operations group, that's probably by far our biggest customer in the pipeline integrity group.

Corrosion services, those first three are our primary customers that we like to keep happy. The environmental group as well.

We're doing a lot more with the environmental group then we've ever done in the past.

Engineering construction, right of way, our enterprise asset management system, regulatory group, aerial patrol.

So all of these folks have data in the database, and some of these people house their data in the database, and they update it, and we don't do anything with it other than maybe display it on a sheet or help them to render it on some report or map that they want.

External customers, industry groups, industry peers, DOT, PHMSA, the regulators, general public and emergency responders.

We have all sorts of metrics that we've, that we've published. Some of those are executive metrics.

Some of those are for the integrity group. Some of these are a number of anomalies by pipeline, a number of anomalies by severity, a number of tool runs per year by company.

So there's a lot metrics. All of the, all of the activities that the integrity group has for the next five to seven years are created in this database so that they know where their tool runs are going to be, and we know where those tools runs are going to be.

Again, low potential area metrics. Some of the other metrics that we have. And this slide right here, we've updated, but I wanted to show you this because it kind of more, this slide and that slide say the same thing, but somebody told me that this slide looked messy.

So we made it look like that. Personally, I like that one a little better because it shows what we do.

Threat assessment, risk assessment, class location, HCA. And all of it is funneling to and from that enterprise database in the middle.

So that is what that is representing. And all of those things that we talked about are these things up here.

So we use it, we use it quite extensively. Some of the, some of the lessons learned, and kind of to summarize, I think more than a few challenges remain, but I didn't want to put that, so I just put a few challenges remain.

One within our company is bandwidth. You know, some of the locations that we have need more bandwidth so that they can read these maps and do some of this analysis a little quicker than at 800K.

So we're working with our IT group to

increase the bandwidth out to those folks. Certainly more data integration.

I don't think that you could over-integrate data. You know, you need to be able to analyze it and see what you have there, but with this Living Atlas coming online and some of the information that's available now, there's some real opportunities to learn a lot.

So we're looking forward to that. VTC challenges, verifiable, traceable, complete records. We've had really good luck with that.

Here's an interesting statistic. We did, we took 750 miles of pipe and we were reversing the flow, and out of that 750 miles of pipe, there was seven feet that we couldn't find the records on.

And we're talking MTRs, OD, wall thickness, grade, long seam, date installed, hydro test, date, duration, pressure, medium.

Seven feet out of 750 miles. I mean, we thought it was going to be good, but we really didn't realize that it was going to be that good.

So we were pleased with that, and we replaced that seven foot of pipe, and now we have 100 percent of the data.

So that was, and to be honest with you, that's not un-typical of our transmission systems. So we're pleased with that.

The other thing that we've learned is words count. As we integrate pipeline companies, and the way that we speak to each other about data, hierarchy is probably the most important thing that we talk about.

How do I communicate with a guy in the field that pipeline A pipeline A, and I call it 100 line. I mean, we're not speaking the same language.

So it's important that as we integrate data and as we talk to folks that are going to use the data, you know, what do they, what do they refer to it as?

You know, they have systems out there that they call this pipeline system. Well, a pipeline system to me is Panhandle Energy or

Trunkline Gas.

I mean, that's a system to me. But to them, a pipeline system is this group of pipelines. The small subset of pipelines.

So it's important that we communicate with them, you know, and how we communicate with them. Same thing with features.

You know, is it a trap? Is it a launcher? Is it a scraper barrel? So just some of those types of things that we kind of take for granted.

I mean, if somebody's talking about a trap or a scraper barrel, you kind of, you know, launcher, receiver, those are, those are kind of synonymous. But there are things out there that aren't quite as evident.

So the language is important, and how we communicate with them. We've taken a great effort and a lot of training to go out and say, if you're going to convey pipeline data to us, you know, can you convey it this way, you know, so that we know what they're talking about, they know what we're talking about.

You know, and that's after meeting with them and determining the best way to do that.

The good news for GIS, the cost is coming down. I didn't really want to put dollars in there, but the cost is coming down.

To have an army of people digitizing USGS quads when now it's available online, the standard databases are out there for free, that you can download those schemas for free.

So the cost is coming down, but it is the data. It's the data that is the investment. And then lastly, you know, as our commitment to continuous improvement, and it's kind of the same cycle as integrity, is we need to keep improving as well.

Study, listen, learn, plan, gather data, analyze data, think about what we want to do, do that, solve the problem, test it, solve it again, test it, study it again, and then start back of the beginning, is just continuous improvement.

One thing that's nice about, you know, one thing that I find nice about working in the GIS group is, you know, we might have an issue with a piece of data, but if somebody comes to us and we correct that data, it's never wrong again. It stays right.

So we welcome any of that kind of feedback from our, from our users, from anybody that looks at our data.

We welcome the feedback from Amy every year that we get when our NPMS submission isn't quite what it should be.

So, and we try to. We try to get it perfect every time, but it's a lot of data out there, and we're going to continue to grow that analyze that. I think that's my last slide.

CHAIR BURMAN: Okay, great. We're going to take a pause right now before we go to the other folks in this agenda item.

So we will come back in 10 minutes. Sound good? Okay. Good. Thank you very much, everyone.

(Whereupon, the above-entitled matter went off the record at 2:42 p.m. and resumed at 2:58 p.m.)

CHAIR BURMAN: Hello, everyone. We're back. We are doing well with time, but we're going to turn to Nick now, and ask him to focus, not necessarily on some of the things that has already been said, but really kind of drilling down on other things in this area. Okay?

MR. HOMAN: Thank you. My name's Nick Homan. I work for Marathon Pipeline. We have about 6,000 miles of pipe that we operate, primarily, well, it's all liquid, hazardous liquid pipelines.

Primarily crude oil and petroleum products. We basically take crude oil in the refineries, after refineries process it into transportation fuels.

We deliver it via pipeline to terminals, ultimately for delivery to the local gas station to provide transportation fuel for many of the consumers in the US. Our systems cover about 14 states.

And what I'm going to cover this afternoon with the Committee, and I appreciate the opportunity to present today, is really how we take all this ILI data from our systems and combine it with GIS data, and integrate it, which allows us to make decisions on where our pipeline requires repairs, and so we can proactively keep our pipelines operating safely and deliver these products I just described.

So with that being said, there's been a lot of good information already reviewed today. So on the slides where it may have been covered already, I'm going to move through it and kind of focus in on what we do at Marathon.

And I will say, there's many different ways to integrate data, different tools. So the way we do it is how we've found it to work for us.

Other operators may use different software, different systems, and that is just fine.

They find it, ways where it can be efficient for them to integrate the data. So with that being said, one of the things we try to do at Marathon, if you're familiar with Heinrich's safety triangle, this is kind of how we look at our data, our integrity data, and what we're trying to do with our pipeline safety management system.

As it was described earlier, it's a continuous do-loop, and one of the things we're trying to do is focus at the bottom of the triangle.

Those are where, that's where we get the data from our vendors who are partners, that provide the ILI data.

We identify the conditions that we need to go evaluate within our own integrity engineering group.

And then from there, we decide, okay, these are the field conditions that we have to go out and investigate through excavation, and ultimately repair these anomalies before they get to the near miss or release area.

So we're really focused on the bottom of the triangle, trying to be proactive so that ultimately we don't have any releases.

And similar in the safety triangle, you're looking at near misses in your facilities such that, you know, somebody has a first aid, you go investigate, hey, we got like 30 first aids.

What's going on here? And prevent somebody from having a serious injury and ultimately a fatality.

So we use the same methodology at Marathon, and it's been successful from our perspective to focus our efforts.

On the next slide, on Slide 3, by the way, for the folks on the phone, you can see at the top, what I'm going to do today is kind of walk you through our do-loop.

You know, it's basically based on API RP 1173, the pipeline safety management system.

You know, we have a plan-do-check-adjust.

And one of the things I want to emphasize is our relationship with our technology providers, and some of them are in the room, and on this Committee, it's key to us being successful.

Because without the technology they provide and they data they provide us to go ahead and rehab and, you know, proactively fix our lines, you know, we'd have nowhere to start.

So as we talk through this, you're going to see, it's really a partnership between us and the technology providers.

So this next slide here, Slide 4 is, you know, is, really is a variation of what Chris covered this morning very well.

But this is a, kind of a tool we use at Marathon, just to keep everything straight with all of the various technologies that are available.

And this is really the first step in a process where we work with the vendor to figure out which technology to run based on our risk assessments that have identified our threats with a specific pipeline.

So you know, you can see on the left hand side, you have the magnetic flux tools at the top, the ultrasonic tool kind of range in the middle, and then the caliper which were your geometry-type tools near the bottom.

And across the bottom of the diagram, you can see the various threats that we're trying to identify and, you know, moving back up to the top, you can see which tool would be optimal for identifying that threat.

So a lot of times, we've got multiple threats we want to identify in a pipeline. For example, dents, and then dents with metal loss, which is an immediate condition if it's in the, on the pipeline Or if you look over to the right hand side of the bottom, cracks.

Cracks in the seam weld are big, are a big issue and a big challenge on some versions of manufactured pipe, you know, pre-1970s, ERWtype pipe.

So working with the vendor, and what we know about our pipeline, we try to pick the right technology.

We go through a competitive bidding process, so we use many different vendors, and we're looking for the best overall quality package for the analysis.

So then once we pick the tool, a little more about just tools in general. These have been covered in pretty good detail already in the earlier presentations.

But we do, out of courtesy of ROSEN Group, provided us pictures of their, one of their MFL caliper tools in the upper left hand corner.

You can see where the different parts of the tool are. And then a, and then a UTCD ultrasonic crack tool, in the lower right hand corner.

The one thing I did want to point out, one of the key things with tool technology is, like any other technology in the world today, things are getting faster, smaller, and more efficient.

And you know, the batteries actually are really important to tool runs. And I'll give you an example.

We're getting ready to run a tool on a 600 mile, 40 inch pipeline, and you know, if you do the math, at three miles an hour, it's going to take us about 20 days to get through this pipeline.

So one of the big challenges we had are making sure we had enough batteries. Because once we put it in, and the batteries run out half way, we've got to start over, and that's a bad situation.

So once again, that's where the vendors provide a lot of value as our partner, saying hey, here's our problem.

We've got to work together to figure this out. And on the liquid side, and this one in particular, you know, you know, you can't, there's only, our pipelines run based on supply and demand.

So if there isn't enough demand on one side, you can't put in more crew to move it faster. And if you move it too fast, then you won't get good tool data.

So there's a lot of engineering and thought that goes through running, getting a good, thorough in-line analysis of your pipeline system.

The other thing I'll say about that tool on that pipeline, I wanted to hit on, was, you know, that tool's going to be about 35 feet long. It's going to weigh 13,000 pounds.

And if you think about how much data, and this is really, I think, important for the Committee, how much data is going to come out of this tool run, if you do the surface area math, it's like 35 million square feet.

And then, I was like, well, okay, that's a number, but I did the math back there. If you like, you know, American football, that's like over 600 football fields you're going through with a magnifying glass, looking for, you know, I think it was mentioned before, a quarter inch by quarter inch size anomaly.

So it really is amazing, and it kind of sets up for the next step, and that is getting into the analyze and integrate data portion.

So the analyze raw data, we're relying on the vendors to look at those 600 football fields with their algorithms.

And if you, and I think there was some good pictures earlier on of the signals that come out of these tools.

They're really, you know, they're almost graphs and visual-type pictures that the vendors have very good algorithms to say, hey, based on their testing, you have an anomaly here.

So we rely heavily on their analysts and the qualifications of their analysts to do their job well, such that when they provide us the data, it goes into our, at Marathon we have a, have a database system that we use to, you know, once we've confirmed the run and met all quality requirements, we check the data to make sure it fits our data analysis requirements.

And so once, that piece is vital to getting us the right points, so that we can do the next step, and that is use our own GIS data, which David covered very, in good detail, and Amy here previously.

Our system's similar, and you can see the various different data types we're integrating with the ILI data.

You've got the pipe properties, you know, you've got wall thickness, grade, manufacturer, foreign line crossings are really important.

You know, you could have AC-type infrastructure that could cause you to have a AC-type threat.

Coatings, you know, do we have a shrink sleeve type coating that shields CP, our corrosion protection, and holds moisture?

And all of a sudden, we've got a lot

of corrosion anomalies in that location. That's going to be a point of interest.

You know, other, our HCAs are kind of wrapped in the land use data and topography. So we're, you know, all of these things on this list, we're pulling together and integrating to help us decide where we're going to go dig outside of the Section 8's required conditions by code.

And really, the additional integration digs were required by code. It's just a matter of figuring out what are the right locations to go dig.

So a lot of information, pulling it all together. And then we, basically, kind of have a, I would say an engineering review meeting at Marathon.

And then, I know most of the other operators do the same thing. We're, we take all this information and basically on, starting on the left hand side, on Slide 7, you know, we take the GIS, we take the ILI data, and the other data sources.

Might be operational data, you know, pressures at that location, cyclic fatigue-type data.

We push it into this database where we have tool tolerances, because that's, you know, that's another important point.

You know, basically every tool has a tolerance, and so you have to weigh that in statistically to make sure you expand your bounds of analysis such that you repair the right features before you have an issue.

We look at historic ILI data. You know, one of the things that we see after we've run tools repeatedly, you know, we've got systems we've been running them on for numerous years.

You've got to make sure you don't go back and re-dig a spot you already put a sleeve on, because that just wastes money and it's very disappointing when that happens.

So that's where GIS and GPS data is very important, and that's really helped us avoid those type of situations.

And then finally, you know, the system basically kicks out your regulatory digs, your data integration digs, which are also regulatory.

And then, you know, there are other things you can glean from the data of, hey, you know, right now, this anomaly might be 30 percent deep.

We're, you know, we were going to monitor it and we'll run, you know, run another tool and we'll check it again in a number of years and see if there's growth.

And that helps you decide whether you've got an active corrosion issue, or if it's a, you know, just a, you know, latent and not growing.

So that's another piece of this engineering evaluation meeting that we have to really utilize all of the data that we get.

And then, what I'm going to run through on Slide 8 here is just some of the software that we use to integrate this data.

This is, the symbols really aren't important, but it's really a data map, and this is where we're getting into big data, and try to use big data analytics at Marathon.

And I know many other operators are doing the same thing. But basically this is a software called Ultrex, and it helps us organize all these different data sources such that we can pull them into a data viewing software, which is called Tableau, so we can make these decisions.

So just walking through an example, in this situation, you know, the first thing we do is say, all right, here's our ILI GPS.

Okay, so now we know where this anomaly is located. In the past, you know, a lot of times, you know, and you still do it, but you relied on matching up joints based on the welds, the girth welds on the joints.

We've had good luck with ILI GPS, and we shift, have shifted that as our primary data source.

Then number two, in this situation

we're looking for an AC-induced corrosion threat, which was covered before.

But you know, when you have power, a lot pipelines run down power corridors because that's a, to be honest with you, that's the most efficient right away, you can combine two energy supply sources in the same right away.

The only downside for us is, you know, because the AC corridor can induce a magnetic field, that can induce AC voltage on your pipeline.

And if you actually have really good coating like FBE, it's even worse because you might have one small holiday, and then all that AC voltage and current comes off at that holiday when the, when the pipeline and the power lines separate.

And so it is a real threat that we use this data integration to track and try to prevent.

Because I will tell you, the metal loss on that kind of threat is, you know, it can be up to 20 mils per year, thousandths of an inch.

So it can catch you before you run your next tool, and that's why it's really important to integrate the data.

So we're looking for that kind of stuff for this threat. We throw in the ILI and metal loss data as the next step.

And then we say, all right, the AC corrosion has kind of a characteristic, and this is that it's more of a, it's a small, well, there was a great photo here earlier of, you know, it's a small circular location.

So we're looking for metal loss anomalies with a, you know, maybe a half inch by half inch-type geometry.

And so by combining all that data, we can say, hey, here's a location that looks like we might have an issue.

And you know, you could say, hey, we've got, under number two, we've got power lines, and then we've got some metal loss, but maybe not a lot of metal loss.

And then the geometry matches what we're looking for. And then the final thing we do is we have the AC, you know, we do annual AC survey readings in our pipelines looking for what kind of AC do we have off the test stations.

And if we got high AC voltage readings there, we say, ah-ha, we've probably got an issue.

And then we go into this Slide 9, and this would be from our Tableau software where all this data behind the scenes comes out in this dashboard.

And basically what we're doing here is, first off, we look at, we have kind of an algorithm that says, here's our AC risk score based on the parameters I described earlier.

And in that graph, the important thing is if it's a skinny, the skinnier the line is, the bar is, and the taller it is, that's where you likely have an issue.

And that's because it's saying you

have a small number of anomalies focused in a location where you might have high AC voltages on your line.

And then the, you know, associated with the power line location. So we would say, hey, that location, that GPS is somewhere we may need to look.

And then we also kind of look at it another way, co-locations by segment. So we're saying, hey, here's where we've got power lines associated with our pipeline, and the higher the dot in that graph in the lower right hand corner is another symptom of, we might have an issue.

We're able to adjust the parameters so we can pull in the anomalies that we want to look at.

And then finally, with number four, we say, hey, we've got about 60 anomalies on this pipeline that we need to take a look at.

Let's go out and do a dig program and, you know, we might dig, you know, five of them to see what we've got to verify that our algorithms were working correctly.

If it is, we've likely prevented a future release. And so we're at that bottom of the triangle, you know, we were talking about before, before we have a near miss and then a release.

On Slide 10 here, just, now we're moving into, hey, we've looked at all this data. We've integrated it.

Now let's go out in the field and make some repairs proactively so, just sets of various pictures for the group.

We use Google Earth combined with our GIS to, you know, locate our pipelines and, you know, and one of the things that wasn't in that example, but another thing that happens during our integrity engineering evaluation meetings is looking for third party, potential third party damage.

That's another data integration you can do, and that's where Google Earth come in handy, because you might have a shallow dent, but you didn't have any metal loss.

But if you look on Google Earth, you might say, hey, there's a driveway there. And that's kind of, that's kind of a signal, we better go check that out because there's potential that, you know, maybe the tool didn't pick up the metal loss, or maybe the, it's so slight it's just starting, but those are latent defects that can fail down the road, and you want to, you want to get ahead of them before they fail.

Just moving across the top, you can see, you stake the dig location, you excavate it. So a lot of big equipment.

You know, some of these anomalies can be 15, 20 feet deep. Big pipe requires big excavations to meet OSHA requirements for safety. Get in, do the anomaly inspection.

That's another important piece that one of the previous presentations highlighted that, you know, and this gets back to feeding back to the vendors so they can adjust their tools.

If you don't have accurate in-the-ditch NDE, you can, you may not be able to correlate your data properly to help the tool vendors adjust their algorithms.

So, you know, and you've really got to guard against it because if you're a project engineer in the field, you're just trying to get that anomaly repaired and get a sleeve on that anomaly.

You may not be as focused on getting the data we need to calibrate the tools. So at Marathon, we have a lot of discussions, and I know the other operators do the same, about the NDE in the field is just as important as putting a sleeve on and getting it back in service.

So a very important piece of the do-cycle here. Coating removal on the right. Just sheet piling, showing some excavations on the lower left.

Putting on a B sleeve on the second picture there. You know, so that's a traditional repair, pressure containing sleeve that you use for a lot of your anomalies. You re-coat the pipe.

And the last one, I just wanted to point out, there are times, and lot of our fellow operators have more pipe in the, in the swamps of Louisiana and the Gulf Coast, but there are times you've got to do underwater repairs.

We actually had one completed in the mid-west on the Wabash River. Of course, we get tool data back the week, you know, in the spring, in the mid-west where it's rained 10 inches, and of course we've got an anomaly we've got to repair right on the edge of the Wabash.

Not in the river, but in the flood plain of it. So we had to call out a company from the Gulf to come up, 15 feet of water.

They blew out the dirt and were able to put a sleeve on it for us, and we were able to get back in operation.

So a lot of, a lot of good work, and a lot of team work in execution. So once again, that's why you want to integrate the data correctly, because if they went in there and removed that dirt and were in the wrong location, that would've been very disappointing.

So, important to get your data right. So finally, I just want to finish with just a, just a few thoughts, and this is the finish of the loop, coming off the end.

It's really important. You know, we do unity plot analysis that you've already seen. One of the things, and, that we're able to do because we ran tools repeatedly over the years on multiple lines, is you, on a potential line, you might have, already have repairs that you've repaired, and you know the depths of those anomalies.

Well, those are good calibration points for your most recent tool run, because it's really data you have even before you go out and dig from that report.

So that's something we do to line up our unity plots. Another thing we do is we use the calibration spools.

So depending on what threat we're looking for, sometimes we'll put in a spool of pipe at a station where we have manufactured cracks in it.

And the tool vendors do the same thing on their loops. But we like to do that sometimes because, you know, depending on the type of crude we're running or product we're running, we want to get a real time calibration of the tool.

And actually, we found that it helps save us money on digs because, you know, it really tightens up their algorithm when they send the data back to us, such that we're digging the right anomalies.

And then you'll, finally, we do a lot of probabilistic statistical analysis. So one of the things we'll do is we'll look at the tool tolerances, and then we'll do a statistical analysis, you know, getting us, we call it probability of exceedance.

Basically, based on all the parameters

of variability from the tool and other pieces of the puzzle, we might say, hey, we need to do three more digs to get to a 95 percent conference interval that we're not missing something out there.

And we've had pretty good luck with that. We've seen that most of the times, when we got to look for something that's over 80 percent depth, only 3 percent of the time, we actually find that it was that, over that.

So we feel like we're catching that extra air or, you know, variation from the tools in the system.

So with that, just, sorry, one last slide. Did want to hit on, we do a lot with the industry, and I know there's some of our industry folks in here.

We do a lot with API, AOPL, PRCI has a really nice facility, the TDC center where you can do pull tests and develop various technology.

So they're really good partners for us, and they have done experiments where, you know, they've gathered a lot of data and are a good resource for completing those types of activities.

And I just have 811 on there because it's important, as you guys saw on the safety share, that you want to call before you dig or else you'll have a video like that come out.

So credit to PHMSA, that was a nice video, so glad to see that. So that's everything I have.

CHAIR BURMAN: Thank you. That's really, really helpful.

We're going to have, before we open it up for discussions and comments, Michael Stackhouse present next. Then I also do want to warn people now for Agenda Item 6 4:30 to 5:00 Alan Christie, and myself have been talking and we have some more homework assignments so you'll want to be here because otherwise you'll be tasked with it.

MR. STACKHOUSE: Good afternoon. Mike Stackhouse. I work for Phillips 66. Thank you for the volunteering. I don't know who did it but somebody volunteered me to present to you guys. I thank them.

I've been in the industry for about 32 years. Thirteen of it was as an ILI vendor. I know a few of these guys. I know Bryce and Chuck in the background for a number of years. I worked with them side by side in the ILI industry.

I think I'll bring a unique approach to the ILI process because I know their side of it. For the last bit of my 10 years has always been as an operator. That unique approach understand that there is no us versus them. There is no tool. There is no analyst. It is a management system.

You've heard that a little bit today. Before you guys throw a bunch of lettuce at me because I'm going to go over some of the same slides, I think it's a different approach to the same slides. Hopefully you will bear with me.

And another thing, Mr. McMillan made

the statement about passion. Because I've been in the industry 32 years I have a ton of passion for asset integrity because all 32 years has been in the asset integrity field.

The other thing is I'm going to show you a bunch of example of data and I need to make this one statement that none of the data is representative of any specific asset. They are just examples for examples only, but there are a lot of really good data in there and I might say that about five times. Okay?

I'm going to talk a little bit about the system life cycle. I know you've seen that before but I'm going to put a different spin on it hopefully. There's a lot of human elements in it. There's some challenges and then, of course, the integration.

Where we're at currently, kind of current state, mapping functionality, things like that, data integration. You are going to hear that a little bit more. Maybe just a little bit more with the data. Then I'm going to talk about the future side of it.

I would also like to talk about the industry. We do a ton of sharing already. We have annual meetings where we share our incidents. We have quarterly meetings where we share our instances and lessons learned.

I think the industry has really evolved over that 30 years getting better and better at sharing information so I hope you guys really understand there is already a ton of sharing. I think Eric mentioned that earlier.

But with the same flavor, or the same spirit, of the integrity management, we always recognize that there is continual improvement. We can always get better at it. The other thing is it's going to be tough to cover all of this in 20 minutes but I'll try. I have just as many slides as Mr. McLaren but we'll go through them.

Here is the life cycle of the in-line inspection. I'm not going to go through every bit of this because the previous members actually did a lot better job than I will.

What I want to point out is each piece of this talks about a management system of the in-line inspection process. I apologize I'm not going to talk much about ECDA but since my goal was to talk about in-line inspection and GIS. That's what I brought with me.

First of all, technology selection. That piece in itself is a whole process within a bigger process. There's its own plan, do, check and adjust on what are the threats, are we selecting the right technology to assess the right threats.

That is a huge key challenge because we're talking about a 400 mile pipeline that's 42 inches, like Nick was talking about, that may have multiple threats. We are picking the right tools for the right threats. We are finding the right threats with the right tools. That in itself is a whole challenge.

There's a lot of human elements in it. There's a lot of teamwork with the ILI vendors. There's a lot of teamwork within the industry talking about these issues. In itself it is a process. This is the ILI system cycle but every bullet point has a process behind it.

Tool setup. I put in FEL, front-end loading. Did we get the right information to the ILI vendor. Did we get the right information from our GIS to set up the tool right. Is our asset assessment ready.

We always talk about piggability but I've actually been throwing out this term called assessment ready. It may be piggable but is it ready to run a pig or is it ready to be assessed. That's a whole process in itself.

We talk about pipeline cleaning. Yeah, the pipeline has to be cleaned before you run a tool. Do you have the right speeds. Do you have the right product. You know, if you're running propane. Some tools can't run on propane. Some tools can run in diesel. Some tools can't run in a mixture of water and oil so it's really is your asset ready to be assessed.

There is a tool for temperature,

speed, surges. All of that affects the quality. If you don't get the questionnaire right, if you don't select the right tool, if you don't get the right tool parameters, you affect the overall data quality.

Post-run acceptance. I won't go through each piece of that. Vendor analysis. There's a lot of resources and qualification on the vendor analysis. They usually send a prelim report to you and then that comes to the operator. Does the operator have the qualification to look at the prelims.

Are we bringing in the right information from the previous repairs. The final report up here are the qualifications to review that and do you have the right defect evaluation.

Ditch selection which I call engineering critical assessment. That's the data integration portion. Bring in the excavation, data correlation, and the ditch qualification. That's a whole other human being and a whole other process for qualifications and issues that could affect the overall data quality of the ILI system. Remember, it's not a tool. It's not a vendor. It's not an arbitrator. It's a system.

I'm going to step back in time. Remember we talked a little bit about me being 32 years in the industry. This is how we used to look at the data. This is an ILI data strip chart. It's 200 feet long, 12 inches wide.

We used to scroll through it looking at the data. We had these little optical comparators and we would measure the pig amplitude and we would use that amplitude to predict what the depth would be.

If you look down here there's a little odometer and it's basically kind of a square digitized format of the odometer and each square was a foot. You could put about five miles on one scroll of paper.

How we used to integrate data was we would have two of these. Alan would have one and he would scroll through and I'd have the other one and we would count joints. We would sit there and count 1, 2, 3, 4, 5. We would integrate data that way.

What would drive me nuts is if I got to 315 and Alan was asleep because that's happened to me before. Then you got to start all over. That's the early ages of integrating data and integrating two different tool runs using these strip charts. I spent a lot of time with that bureau right there.

So what are we trying to do? Could you take this strip chart and integrate it with other information so I can compare two of the strip charts put can I actually compare the GIS information or the depth of cover or close interval survey.

The close interval survey is every three feet they take a measurement of the cathodic protection and they use a GPS to do that. How do you overlay that to a strip chart looking like this? We've gotten a lot better at it to be honest with you.

The data is a lot more digital. It's

a lot more refined and you can actually -- by the way, you got a lot more sensors in this. What is that, like 12 sensors? They are a lot smaller now, too.

Every single pipeline, every single joint, has its own fingerprint on these EKG lines. These EKG lines are a lot more digital now. They are a lot prettier but I will got to go back to this. Every pipe and every joint had its own fingerprint. What are we trying to do with the data integration? What are we trying to do with these fingerprints?

We're trying to bring forensic science investigation into the data before a leak happens. We are basically a bunch of CIS people, or CSI people, looking at information before the I happens, before the incident happens.

Remember we talked about every pipeline has a fingerprint. I'm going to give you a very simple chart for us. This is basically from zero footage to 13,000 feet of pipeline looking at ILI data from, it looks like, 12 percent and up. These little red dots are ILI anomalies.

This is one way we use the data to integrate other information. You can see here the blue line. We have elevation profile. Luckily this was pretty flat. This line here is basically cumulative damage report where we can talk about where the damage is happening. Each one of these little dots are basically anomalies.

What we use this for is looking for hot spots, looking for data trending, and looking for that fingerprint of that pipeline. You can see these areas where they are blank. Luckily we went out there and changed out those pieces.

That is a real clean spot, newer pipe. You can see we've got some more work to get the rest of those out of there. This is another way we've integrated the data. We've trended the data and
looking at the footprint. We also have another one where we talk about remaining wall thickness of an asset.

You saw the PAS information. You saw the GIS information. You saw a lot of the ILI information. I need quick data. I need data at my fingertips. This is a report that we created so I can have quick information so I can learn a lot about an asset and learn a lot about the integrity activities of an asset.

What we have here is we have a pipeline station A to B. Remember, this is not indicative of any specific asset. You can see if it's a DOT jurisdictional. You can see if it's active line. You can see all the different assessments we've had all the way back to 1994, what types of assessments. You can see in 1994 we had the hydro test. How much of it we assessed.

Over here you've got normal operating pressures or maximum operating pressures. You've got elevations. Over here you've got the pipe properties, six inch. The manufacturer, the wall thickness, the specified minimum yield strength. I want to make sure I don't use too many acronyms. The seam type and how much of that we have. We've got the vintage, when it was installed. You've got the coating type, how many crossings we have, and the HCA information.

This is a real quick snapshot of using that information that is compiled and giving me a quick report about the integrity of activities of an asset. This is basically everything I would want to know if something was happening or if I go to a meeting about an asset. This is what we call the scoop. This is the scoop about the asset.

Another report that we do, and you've seen a lot of the alignment inspection information prior to this presentation, but this is how I close out an in-line inspection. What you see here is you can see station A to B again and how many types of defects I've had on that in-line inspection.

Here is the in-line inspection anomaly count before repair system and after repair system for external, internal, manufacturing, and then the totals. Over here I've got the deepest anomaly and the most severe anomaly.

Here I've got deformations, seam welds, cracks. This down here wraps up the 1163 process on how accurate the ILI system ended up being.

Again, it's some of the same information, just a tiny different spin on it, with actual information.

You saw the unity plots. You saw some real pretty unity plots. I've got unity plots back from 1998 and everything we've ever done since 1998. This is powerful information. It is okay to look at one pig and see how our system is doing and you get a lot of good information on that. What is really powerful is how is your system performing and how can you trend them against each other.

If you look over here, I know it's a lot of information. This is the same unity plot, predicted depth and actual depth. Over here you've got what division it's in.

Our company is divided up into five different divisions so I can hone in on one division. I can hone in on an ILI vendor. I can query on an ILI type. I can do an anomaly type. I can do an anomaly depth. I can do anomaly characteristics of grooving or general corrosion or slotting. I can do a specific diameter.

ANC code. I remember, I think, it was David talking about what you call assets. This is what we call assets. This is AMO 1 and PCO 1. Those are naming conventions. This is our priority codes. When we find an anomaly that is actionable, we put a priority code on it. These are the technologies, wall thickness, and then year of the assessment.

What is really unique about doing this is I can start seeing trends of the system. Remember we talked about tool and tool performance, but this is system performance. If I break this up by division, would it be interesting to know that one division has different specifications of the same vendor and the same diameter than another division? It is.

That's a failure in the system. It's not a failure of a ROSEN or TDW or particular type of vendor. It's a failure of the system. You can drill down and understand is it only on certain wall thicknesses or is it on the top of the pipe or the bottom of the pipe.

We can actually do deformations and we've actually seen where deformation has different tolerances on the bottom to the top of pipe when diameters get a little bit larger where we use those tolerances for a prediction.

Chris, I don't know if you remember this but you've seen this before. About 2002 when you had an audit with me and I showed you some of this trending. It's not as sophisticated as it is now but this is the same trending we were doing back then to try to really understand and drill down on system tolerances.

I had a vision. I wanted to come in my office and I wanted this big old monitor to come out of the ceiling when I get there. I wanted to see where my activity was going on. I wanted to see what was going on that day.

We've actually used GIS. We've used our ali. We've used all of the work lists that we've created from in-line inspection. I can come in in the morning and, I think, Amy said you can't put all the lines on one slide so just drill down into the billings area. These are some of our assets.

You can see these yellow triangles. These yellow triangles are actually digs. The color code of the digs shows what type of condition they are. These are actually Phillips 66 coded digs so we have certain timing on that.

If you hover over them you get to see the detail of that work product and that work list. Hopefully you see these triangles coming on and off. If you see some red ones, those are immediate conditions. Those are HCA median conditions and where they are at that moment.

We also can see where the hydro tests are going on. We can also see where we've derated assets. We can also see where we are doing the in-line inspection. Hopefully one of these days you'll see a little pig running across that blue line and we get to know exactly where it is.

The other area where we use GIS, I think Nick mentioned where you have an engineering meeting talking about an asset. We call it a date integration meeting where we hopefully have gotten all if the digs done, come back in the room and we sit and talk about an asset.

We walk that asset with the ESRI map and we look at the aerial photography. We just make sure one last time that we don't want this asset. Let's understand our PNMs, are they effective, and what is the next assessment.

What was interesting was I saw this blue lake and I said, well, why is my line all blue and I got a blue lake there? So I asked the question is that an HCA? Really quickly we could see with our layer that it was not an HCA. So, okay. If the product came out of there, where would it go?

So we used the overland flow and you could see really quickly that right here all the product would go into that lake. It was not an identified HCA. Using GIS really quickly we created this whole lake as an operator identified consequence area. Within a matter of hours we found out that lake was actually a wildlife management area.

Just by walking the line you can start asking some questions and with the GIS information and the information out on the web, we found out that, yeah, that is definitely HCA and we can actually treat this as a higher priority pipeline.

When you talk to the guys in the field they say, "Yeah, that's a dry lake. It's dry all the time." Not anymore. That's a wildlife management area. It's really good to use these tools to learn a little bit more in how we use it.

We basically created a tab in our internet where you can click on operator identified consequence area and it will bring you through a series of screens and you can actually send your information that you think should be in HCA from anywhere in the company and it will go to our GIS and they will actually be able to do a study for you and see if we need an operator-identified HCA.

We talked a little bit about where we were before and where we're at today. I want to maybe throw in a new concept to you. Cognitive integrity management. How do we actually continue to learn from it and how do we learn together.

We talked about integrating information, normalizing and standardizing and validating accuracy and then using that insight to trim the information to a higher level of confidence. This group is to come up with how do we better share information. Is it the data that we want to share or is it the learnings we want to share?

We partnered with a couple of companies to build algorithms on our learnings to trim the data so we don't make the same mistakes. What are we sharing? We're not sharing the data. We're sharing the algorithms. It's how you share the learning that affect the asset so we don't all make the same mistakes.

This is one area that I think is really interesting and we've learned a lot by partnering with a couple of companies including Microsoft, by the way, to share the algorithm, the outputs, of the information without sharing all the data.

We have 1.5 billion data records in our system. We have the PODS information. We have ESRI, but we've also spent $15 million just basically building our own data integration programs. We've all done that separately as operators. We all have individual data records, individual data formats, but I think the algorithms are really a key to what we do with that information.

So this company is actually working with us. We've got three different algorithms. It can ingest different ILI vendors. It can do different ILI formats or operator formats. It can actually ingest the information in a matter of minutes and it's machine learning. Every time you put in a new bit of information, it relearns how to correlate it. We're at about a 98 percent match rate on our data and that's better than we've ever been before.

How you use that information, how you build algorithms, how you share the algorithms, and then how do you display it in a user-friendly way on a 3-D layer. One of the thoughts here is using some of the Google glasses. I know that's really future, 15 years from now. I might not even be employed by then. You can use Google glasses and you can actually start looking at the pipe from within and using this information.

What you can see here is you can see the green was a run five years ago. The yellow is today's run. Where they overlap is where they're matching. We've used this information to monitor change. One piece of it is did it hit PHMSA criteria. The second piece is did it hit Phillips' criteria. The third piece is what is the change doing and how do you monitor that change.

This information has really been valuable. We've been pigging excavations that weren't previously pigged that actually are pretty severe and that the system hasn't been catching. It's showing us our weaknesses to the system.

Remember, the ILI system. I didn't ILI tool, I didn't say analyst, and I didn't say operator. It's a system failing and we are starting to really get better at predicting where they fail and driving into how do we monitor that and how do we mitigate that.

So hopefully we didn't go over the exact same thing. They all seemed a little familiar. Here is the ILI life cycle. It is a management system just like SMS. It truly was one of the first SMS programs that we had in the industry, the IMP, Integrity Management Program. This is a management system with the ILI life cycle and each piece of it has its own plan-do-check-adjust.

Thank you.

CHAIR BURMAN: Thank you very much. All of that was really very helpful.

Anyone on the phone have any comments or questions?

Mark.

MEMBER HERETH: Michael, thank you for your presentation. Thank you all for your presentations today. They were very well done.

What drove you to look at machine learning? Was there a specific set of circumstances or was it just general interest? What drove you in that direction?

MR. STACKHOUSE: Well, again, I've been doing this for about 30 years and I've gotten a lot better personally at understanding where our systems fail and I've gotten a lot better at predicting where they fail and getting to areas before they fail. Finding them before they find me.

I wasn't real good at doing it manually and I wasn't real good at teaching it either. That's the real hard part is how do you teach it. It took me 30 years to understand those fingerprints, those footprints of every different join or every different ILI anomaly. I needed a better way to do it and a quicker way to do it.

I can go through there and integrate two different tool runs. It would take me about six hours of one asset and I'm really, really good at it. This can do it in a matter of minutes and we ingested 1,700 tool runs over a weekend. That's huge.

Remember, it took six hours for me to do one asset with two runs. That's brutal when you've got 18,000 miles of pipe. Good question. I want to do it quicker. I want the information faster. I want my scoops quicker, too. Good question.

CHAIR BURMAN: Thank you.

MEMBER WARNER: Michael, just a follow-on to that. You mentioned that you were finding ILI system issues or process issues that were standing out when you did that analysis. Are you free to give us an example of one of those process issues so we can kind of frame it and understand what you mean by that?

MR. STACKHOUSE: Yeah. I briefly touched on it without going into too much detail. If you take those yearly plots, which are basically performance, and you look at them and slice them/dice them the 100 different ways that we can now, you start really learning the trends of different fragments.

I mentioned the divisions. One division was running the same vendor, the same diameters, and have better performance than another division. Why is that? I was able to slice and dice that little bit of information and

I was able to see that over a certain amount of years one division was using third party NDE a lot more than another division where they were doing manual pig-to-pig measurement or pig aging.

Maybe that ended up being one of the failures to the performance. Right? That's an easy one but we have different ways of slicing and dicing it now and we can be a lot more predictive at using that information to better the system but looking at it as a system.

Too many times we say, "Well, I sent that information to the ILI vendor and he didn't do anything with it." That's kind of a he said/she said. What are we doing together to improve the system and how do we really look at the system as the issue and not a person, not a tool, not a vendor, not an operator.

CHAIR BURMAN: Thank you.

Does anyone else on the phone have any questions or comments?

At the table? Alan.

MR. MAYBERRY: Thanks. Alan Mayberry.

I was going to ask do you have any suggestions for us as we work on this issue regarding sharing information?

MR. STACKHOUSE: You know, I think we all know we need to share information more, but I think a real key thing is how do we share it faster. Let's be frank, when there's a leak there's three people that know about that leak and know all the details about that leak. You've got the operator, you've got PHMSA, and NTSB and they are learning a ton.

They may take five years for the rest of the industry to learn about that leak and that's too long. I think that's a huge issue. You guys are learning, NTSB is learning, and that one operator is learning. How do we share that? There's a ton of facts that we can all share but we can't share it.

MR. MAYBERRY: Obviously you have a wealth of knowledge on this. I find from our perspective so often we hear in the aftermath of failure why I just ran a pig. I just ran a tool a couple of months ago, a few months ago. Looking back our vision is better but how do we get ahead of that? How do we share the lessons?

MR. STACKHOUSE: Truthfully, the integrity management rule was perfect for making us do more, but it also limited us from doing more. I think that was a big issue. Yes, we took care of a lot of corrosion. Yes, we assessed our pipe a lot more, but how do we actually dive into the data a little bit deeper and go find the bad actors before they find us.

Yeah, we ran the tool just before but none of the actual anomalies hit the criteria that are previously established. It's the underlying ones that we don't quickly look at because we are too busy trying to fit them in these other buckets.

That's an issue. What we've done is we've actually created -- you know, I think all our operators have PHMSA criteria digs and they have company criteria digs. A lot of times those company criteria digs come after the PHMSA criteria dig.

That is the spirit of the integrity management. What we've done recently we've actually pushed some of our new criteria digs in parallel to the PHMSA criteria digs because some of those are the ones we're finding are a lot worse and are we really truly attacking what we need to attack in a timely manner. I think there are some defects that are currently called criteria digs that aren't injurious.

I'll give you some examples. Small dents on small diameter pipelines with D-over-T ratios aren't as significant as large diameter higher D-over-T ratios. Should we really be spending our time on the eight-inch pipe that has a small dent, or should we be spending our time on less-than-1-percent dent on the 42-inch pipe?

So great program. It made us do a lot and it made us do it faster. I remember talking to an Integrity Management person before in the early years and he goes, "I can't wait to run that pig in 10 years." Right? That's the way we were thinking before.

Now we are doing it at five years and we are starting to say, "Wow, I'm glad I'm doing it on five years." It's a great program. Now we just need to figure out how do we tune it in and dial it in and not go spend a lot of resource scenarios where we all know we shouldn't be spending them and using learnings to get to them faster. Good question.

CHAIR BURMAN: Well, thank you because I think you really hit the nail on the head on sort of where we are as a working group and the need to figure it out. I think that we all would probably still if we took the vote on is there a need for the voluntary information sharing to be yes. The details are about how do we scope that out and deal with those issues in a way that actually gets to this before another 30 years.

With that I think we are done with the agenda items except for the next part which is sort of recap and closing with some homework assignment. We did take seriously the focus on trying to drill down and figure out sort of our next steps for discussion tomorrow.

With that I'm going to turn it over to Alan to give his thoughts. We've been working together up here and staff behind the scenes and then turn it over to Christie who is going to have staff present a little on some of the thoughts and mission statements. Thanks.

MR. MAYBERRY: Well, like I said earlier, we had laid a lot of the pieces out today. I think the intent for today was to be educational. Some of the highlights of what I've heard today certainly related to -- you know, there's a lot of information already being shared. I'm not surprised that happened.

Certainly in the groups I've engaged in, whether it's API, INGAA, HCA, there's a lot of collaboration that occurs. Nonetheless, like I was just speaking of, we do struggle with the aftermath of where we see situations where in-line inspection tools were recently done and now it's easy to see, well, if we had only considered it this way.

What can we glean from that? How can we move forward to leverage things like that and develop a system for sharing information so we can be better.

We put standards and I know we worked tirelessly, the staff does, to issue what we call federal minimum standard for pipeline safety. We do stress that it's a minimum standard.

Most often, you know, usually often times -- I should say always an operator needs to do what it takes to ensure safety. In many cases that may involve going above that standard. It's merely criteria but, in some cases -- in all cases an operator should consider what does it take to keep the proverbial tiger in the tank.

To kind of put boundaries on what we are dealing with here, I know we have a lot of things out on the table related to a very complicated process that operators go through. We are dealing with in-line inspections specifically.

We are dealing with -- it's been called up by name in the statute, dig data specifically. I think the kind of boundaries we are kind of working within are in that realm of what are we doing with the information that we find at the operator level to share lessons learned.

Like I said earlier, I think out of that we can -- you know, we'll have a good framework and really we are dealing with setting up a framework. We are recommending a framework if it's relevant to -- you know, it could be used for a platform for other types of things.

Specifically I think it would keep the task at hand related to in-line inspection information, dig data. I think that keeps it simple. Let's start somewhere. Let's start simple and then from that we can improve from there and move on from there.

Let's see what else do I have here. I think that's about it. I would be interested in other feedback, too, because we've had the perspective from operators. We have a cross-section of the industry out there from unions to service providers, in-line inspection service providers, people that deal with coatings, corrosion of surfaces and the like, and operators and the public.

Your perspective -- I mean, you guys are the ones that deal with this every day. Where are the pains? Where do we need help in setting up a system? We had the perfect opportunity here to start fresh with a system that can really help you and, in the end, ultimately help the public because we are here to prevent accidents and do better to that end.

I can't go on or let pass the point about, you know, taking a step back and what this is kind of -- this is really part of a larger picture related to safety management systems.

As we look to the future of pipeline safety oversight and management, really we see S&S as a key to that. It's something that we're promoting really voluntarily currently that the industry would adopt safety management systems, a key aspect of that. In addition to leadership commitment is sharing information.

I think we have an opportunity to make S&S more successful by developing a good platform for sharing information. I think this is a key component as we move forward towards implementing safety management systems.

Within PHMSA and in the regulated community I think the system that we're talking about here ultimately developing, if that is the way it heads, will definitely promote communications with operators to help better manage pipeline safety and ultimately ensure safety.

I think that's all I have. I'll turn it over to Christie to share a few thoughts.

DR. MURRAY: Thank you, Alan. My thoughts are pretty brief. One, I just want to say that we hope that the discussions so far today have been useful. I understand different committee members are coming into this committee with different levels of information, experience, and knowledge about some of these subject matters.

The goal for the sessions that we've had and discussions we've had so far have been really to just try to normalize it out for those who may not have had as much involvement.

For those who are novice to some of these discussions, hopefully that gives you an idea of how what we've talked about relates back to some of the language in the mandate that we are asked to take a look at. Also to give you a place to think about where else or where may want to expand on that.

There was certainly some really great points about things that have not been tee'd up as a part of that that really need to be involved in the conversation.

One of the themes that we took away very clearly today, all day, is that we really want to focus on what is the problem we're trying to solve. What's the goal we're trying to reach.

How does that look. What is our charge. What is that goal or statement, mission statement. What does that look like in terms of advising what the committee does next.

I have Ahuva sitting here. What she's going to do is show you just three simple examples. She'll explain a little bit more of what a couple of other DOT modes have done in terms of their information sharing to help drive their purpose, description, and a little bit of the output of their information sharing efforts.

MS. BATTAMS: It's nice to be back. It's been so long since I've talked to you all this morning.

So one of the things that we thought would be helpful was to look at three other voluntary information sharing group programs that are within the DOT that could help us form our mission statement and think about what are sort of end product from sharing information could look like.

The FAA has several programs and then

the BTS and BSEE also have a joint program that I thought it would be helpful for us to look at. The first one is the FAA's Aviation Safety Information Analysis and Sharing System, the ASIAS. The purpose of that program is to promote the open exchange of safety information to improve aviation safety.

What it looks like is four data bases. These are available online. They focus on accident and incident reporting, air registry information, safety reporting, and then statistical information.

These data bases are searchable by the public. When you run a search on them you get a list of reports that have been shared by participants. You can run queries. You can pull studies. Really anyone can access the information.

So how is the data protected in that case? The data is housed by a third party vendor called MITRE, or METER, I'm not 100 percent sure. It maintains the database and it scrubs the data from any identifying information so an operator submits a report and the vendor removes the information that you could use to identify who was reporting the specific safety incident or accident incident.

Even the FAA can only view the aggregate data so that none of the specific operator data is available. Then the output is in these databases. You can run your queries. You can look at more than one database. You can see what's happening across the industry.

The second program is the Voluntary Safety Reporting Program which is also through the FAA and there are several of these and I can get more information if you want to talk about a specific one. The goal of these groups are to identify and correct safety hazards across the FAA industries.

What happens with this group is that reports are submitted but they are governed by MOUs or VSRP agreements, Memorandum of Understanding. These agreements establish the procedures for submitting the information, what information is going to be included.

This information is not scrubbed for anonymity. But the information is also not accessible except for a small group. They are called the Event Review Committee members and they are the only individuals that can see the data. The data is not shared throughout the FAA. The data is not necessarily shared with the public. It is limited to what is identified in the agreement to protect that information.

Those groups then will do their own analyst and create a report detailing the information. The report is scrubbed of any identifying information. There is no breach of confidentiality. Then the reports are what are shared throughout the industry and to the public to say this is the trend that we're seeing or these are the issues that need to be addressed.

You can scroll up a little bit. The last program is the Safe OCS Confidential Reporting System. This is through the BTS and

BSEE. This is voluntarily shared information about near misses on the outer continental shelf. What happens with this program is the BTS controls the reports and the data and if you go on the Safe OCS website there are a couple of links that tell you how to report and you send your report in.

An operator can send it in. An employee can send it in. The information that is submitted is specifically controlled so that it is not made public with identifiable data. I can talk more about statutes and regulations at another time for protecting this information but the BTS statute goes very far in affording penalties, both criminal and civil, if this protected information were to be released.

Then what happens with the data that's submitted, the BTS develops and publishes an aggregate report so that means they've gone through and shifted through the information. The report only has public information and findings. Then it is shared with the BSEE industry and then other OCS shareholders -- stakeholders, excuse me, that can then reduce safety and environmental risks and continue to build more robust safety culture.

All of this information is also available publicly but I can also get you guys specific links if anyone wants to be looking at it for themselves. What I wanted to do in presenting this is to give us kind of an idea of what other programs do so that we can think about our end result.

Do we want something where there's a small group of analysts that will look at submitted shared information and then will come out with a public report. Do we want to do something like the ASIAS or a third party scrubs the documents so that the identifying information is still protected.

Or, you know, do we want something where there's a little broader governmental team that's analyzing it but still the end result is a public report that aggregates all of the information that has been submitted.

Does anybody have any questions that I may or may not be able to answer since I'm not with the FAA or BTS and BSEE?

CHAIR BURMAN: So I'm just going to react. First of all, thank you very much because in the middle of this we gave her an assignment. We are really trying to show that we're taking it in and trying to make this real and trying to give feedback that responsive.

This is all of us that need to work together. We're struggling with making sure it is at the end of the day something tangible. To the extent that I really do mean it, I really want us to come tomorrow morning fresh to really focus on what do we need, roll up our sleeves, and be comfortable sharing.

If people aren't comfortable sharing what's working and what's not, then we might as well just close up shop. As I see it, we kind of have some action items. Probably action items homework which is about six for the start. One is hearing from the FAA's experience.

PHMSA put together this not as the be all and end all but trying to give us -- and we'll send this tonight so people have it in an email to give us something to think about. There's plenty of other things that are there and I think from FAA experience we are also going to need more tangibility from them with helping us with some of how this might work in our world.

The second action item/homework is clear policy framework. I think we could all wrap our heads around the idea and the framework of it being focused on helping to have more actionable items for pipeline safety issues. But really what does that mean?

Michael Stackhouse, I think, really sort of hit it for me in terms of he took what he has been doing and why it's important and then also was willing to give his own opinion on where the IM focus works and where it doesn't. Some of that helps us get there.

Then the other homework assignment is,

and this isn't necessarily to have this tomorrow, but the common terminology of interest. We heard loud and clear when we came together December 19th that common language was important. That keeps being a theme so it's something that we need to figure out how to do. I think one of the subcommittees addressed that.

Then the fourth homework assignment/action item is the important aspects of any kind of policy and data sharing because I think we need to have some key take-aways. I'm also going to now -- Christie, I'm sorry. I'm going to give you homework. We should probably put this in an email, too, for folks. All right. Sorry.

Then the examples. Maybe one or two example of proprietary intellectual property information concerns. Maybe something really to kind of explain just a little bit more why it's important.

I lost count on my numbers but subcommittee feedback and sort of the needs and whether or not there is any interest in tackling some of that. Again, I do know -- I think we have to take a step backwards before the next meeting in identifying some of the work product that may go into the subcommittees so there may need to be a subcommittee for the subcommittees, and then some panel conference calls or some conference calls like we did in April.

But before that I think the other important thing is that we do need -- this we heard in December. We also heard it April and we heard it now. We do need to have more real time documents to react to.

That also means that not just piling on the work to the PHMSA staff but also us taking some ownership in that as well because, you know, we have to be cognizant of the workload that we are putting on them and that they are trying to make this real for us because it is our working group to be successful or not.

With that I will open it up to anyone on the phone who has any comments or questions.

Hearing none, anyone at the table have any comments or questions?

Dan.

MEMBER COTE: Yes, Madam Chairman. Just one for the committee and for PHMSA. It seems to me we spent a good deal of time talking about information sharing and the appropriate vehicle to that which I really see to be the strategic task of this committee.

So we've talked a great deal about data. Today the focus was ILI and GPS and technology, or GPS GIS. Let's make this process absolutely agnostic to content in the context of is it just ILI data, is it just GPS data, is it just transmission data.

It seems to me that the most -- the strongest product this group can produce is an effective information sharing product for the industry that allows them to communicate seamlessly risks, remediation members, and technology to operators be they distribution or transmission.

Now, the specific issues are likely to be a bit different. If we restrict this activity to ILI data, then honestly you just lost most of the distribution operators in the United States who are responsible for the majority of the federal reportable incidents every year.

Without having looked at the numbers recently 60 or 70 percent of all the major events that happened that impact public safety just went out the window and lost scope. We will miss the boat if we do that. Let's create a vehicle where we know what the industry is prepared to share among each other in the same the FAA does, what we can determine, what the public should have access to.

Since this is voluntary anyway, open it to the industry because I believe the industry based on its business needs and risks will find more rather than less areas to share. If we do that, we will have moved pipeline safety forward. Thank you.

CHAIR BURMAN: Thank you. I want to

applaud but I don't think --

Mark.

MEMBER HERETH: I'm Mark Hereth. I want to support the comments that Dan was just making. I sat here as I listened to the summary that was presented about the FAA and BSEE. I really appreciate the quick work that you've done there. That was great work.

What's interesting here is the nature of the information and the data that's being viewed there generally relates to discrete activities that have occurred and that are readily observable or definable. I think one of our challenges here is to maybe -- I get this from listening to Michael Stackhouse's presentation.

Maybe our focus should be on learnings as opposed to information and data. Because if we focus on data with what we're talking about here, we're not talking about discrete observable events. We're talking about indirect measurements. ILI takes indirect measurements.

The NDE technology we use takes indirect measurements.

Maybe our opportunity here is to step back and say how can we draw on that FAA model and really look at the learnings we're trying to derive from this process. I can tell you, just one other comment, we had a small group of us meet in the IngaFoundation last year.

We got to this concept of the de-identification that you talk about, the work that MITRE does. If we start trying to de-identify data that comes from the 600 football fields or whatever it was that we talked about earlier, I think we're going to get lost in the interstitial fluids of the bark on the tree when we really want to be in the trees. Michael, thank you for that presentation and you all for the summary. I think we may want to think about learnings as opposed to data. Thank you.

CHAIR BURMAN: Thank you so much.

Michelle.

MEMBER THEBERT: Thanks. I just

wanted to -- I know we talked earlier about the case study. I think that was a really good idea. I guess my comment is I guess the goal was to figure out what causes these incidents to prevent future incidents so maybe go through each of the factors that Chris had like damage prevention. What information do you need as an operator to prevent damage prevention in the future.

Here are the five or six things that would help for that industry to have. Corrosion. Here are the top things you need to have. Kind of figure out what the cause is. Is it equipment failure, corrosion, or whatever. Then from there give the piece of data you need to address that issue.

Otherwise, I think -- I mean, ILI was interesting stuff but I don't really know -- maybe the other operators know what to do with it when they see all those unity charts or whatever they're called. I mean, it was nice but I just don't know if it's going to be user friendly where the average person can have it.

If you say damage prevention and here are the top things in IMP plan that you will do and what particular pieces of information would each operator have to share that could potentially prevent a future incident.

I don't know if I'm making sense. It's more logical, I guess, from the data driven. Here is what's causing the problems and here's how we need to address each of these factors. I mean, I don't know if that's anything but --

CHAIR BURMAN: I think it's something. I think it's very helpful.

MEMBER WARNER: This is Chris Warner from Mears. To follow on with that, I was thinking it might be helpful in correlating the data to start coming up with statistics so that operators could see how their vendors or their process, as Michael was saying, was performing compared to industry averages, highs or lows.

I think a lot of us get into using a vendor or implying our own process and we get results but we don't know if we're really getting a good result or not. If the spread on the unity graph is wide, is that typical for the industry or is that not typical for the industry?

We may be able to de-sensitize it so we can actually look and see the results that we're getting. Is that following standard industry results or is it actually worse or better. Then we can start sharing the learning. Why is it worse or why is it better. What are we doing different to get the better results that are out there.

CHAIR BURMAN: Okay. Thank you.

I just want to make a point as a state regulator. I don't want to be defining for you the widgets that you need. I don't even want to be in the room when you're discussing the widgets. I just want to know that the widgets are going to work and going to help. I think that's important.

Does anyone have any follow-up conversation either on the phone, at the table?

MEMBER JENSEN: This is Leif Jensen

from Sunoco Pipeline. When you look at the statute typically -- paragraphs 1 and 3 typically get to the verification data and cooperation between vendor and operator. Part 2 talks about technology.

With all that said, I support the comments that were made by those who are related to taking a step back and maybe we take these considerations somewhere down the road and instead focus on the lessons learned and how we can learn from one another, operator to operator, as well as operator to ILI vendor.

I think if we take that more generic approach, that gets to Dan's agnostic vision, or agnostic vision, where we're not honing in solely on in-line inspection. That said, when you read the statute verbatim, I don't know if we're deviating from what the PIPES Act actually intended by doing so.

CHAIR BURMAN: Okay. So Christie and Alan, I don't know who wants --

MR. MAYBERRY: Leif, I was thinking

about as well. It's listed under considerations. It talks a lot about data. Of course, you know, we already know in-line inspection. I think there's a way to accomplish that and deal with the larger issue because really this is much more than -- will be much more than sharing specific dig information related to one type of assessment or one type of tool.

I think we can work with that to sort of solve both because it's pretty clear it deals with sharing data. Those are listed really under 10(c) as considerations, things we need to consider but it doesn't keep us from being creative to, you know, while we're dealing with that more of a micro issue, we deal with the larger issue of sharing lessons learned or sharing other assessment techniques and information like that. I think we can do both.

CHAIR BURMAN: Christie.

DR. MURRAY: I'm multi-tasking. I just sent everyone homework assignments. You're welcome. I just want to say this afternoon Diane and Alan and I will talk and probably change the agenda up slightly tomorrow so that we can have an opportunity to hear from the committee on some of your thoughts and insights from the homework assignments so that we can really nail down where we really see this going and what's needed with this effort. You may likely see some changes to the agenda tomorrow. Thank you.

CHAIR BURMAN: I do just want to say I'm going to use my law school background and everyone will be sort of tasked and called upon to help to see if you did do your homework assignment. And if you're not here, we'll find you. Thank you very much. Don't stay up too late.

The meeting is adjourned.

(Whereupon, the above-entitled matter went off the record at 4:30 p.m.)

J

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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: Voluntary Information Sharing System Working Group

Before: US DOT/PHMSA

Date: 06-29-17

Place: Arlington, VA

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

Neal R Gross

Court Reporter