

Transcript

PHMSA Public Meeting 2022

Houston, Texas

Day 3

Tuesday, December 15, 2022

>> Ladies and gentlemen, we will begin in about two minutes, if I could ask everybody to move to their seats, please.

Thank you.

>> Welcome, everyone, to our third day.

Thank you, again, to all of the diehard fans that showed up today, and also on our webcast.

It's been a -- I would say that the conference has been jam-packed full of topics we were just discussing before we made the connection with our folks on the internet, that we've covered a lot of topics in a short amount of time and every one of those topics deserve a more thorough interactive, deeper dive so we are planning to engage on these topics in 2023, some to a greater extent than others.

Obviously the conversations yesterday and, you know -- we've talked about a lot of issues, and we just need to make sure we're hearing everybody's input as we move forward because it's important to the country.

As I mentioned on Tuesday, when we opened, this is a very exciting time to be in our industry, whether you are paying attention or are engaged with the industry, whether you're a member of the public or you're a customer representative, a vendor, a contractor, a regulator, whatever your role, academia, too, is very important as transition to energy fields of the future and look at CO₂ even hydrogen.

At the same time we have all these issues we need to address, the aging infrastructure, how do we preserve the 49 that's been in the ground a really long time.

A lot of people don't realize that there is still pipe operating that was put in the ground during the Civil War.

Let's you soak that in for a moment.

It's very limited but the point there's some really old pipe.

We know that most of the steel pipe in the ground was installed after the World War II vintage so you're looking at, what -- let's 1950s, that's 70-year-old pipe.

There's a lot of opportunities and challenge.

That's not to say that pipe -- I want to make it very clear, it's not to say that you can determine the integrity of a piece of pipe by its age but it does mean the pipe may have been exposed to more integrity threats and more challenges.

So we're going to hear a little bit later today about risk assessments and interactive threats and we'll be talking more about that in 2023.

I'll tell you what, let me go ahead and get to the start here.

I think everybody remembers for the people in the room, the restrooms are out these doors here.

Should we have an emergency, you're going to go out the doors to the right, out the second doors into the mall and then proceed to a safe location.

We also want to make sure that everybody online is aware that you can submit questions to us that we can answer through the morning.

I do anticipate that we will probably end a little bit early today.

That's my target.

Maybe go a little bit after lunch.

So with that, let's go ahead and get started.

We have some really interesting topics to begin with.

We're going to be talking about methane emissions.

Congress changed PHMSA's emphasis areas -- I shouldn't say that.

They expanded our mission.

They said, you're not just about protecting people and the environment, but we also really want to lean into the whole climate change and engaging on making sure that pipeline operations and emissions do not ever impact climate change -- or does not adversely impact climate, meaning climate change.

They put very stiff requirements on us.

I don't want to steal the -- Harold's presentation here, or Max's or Jon's, but basically Congress has leaned in and put some pretty stiff requirements and expectations of both us and our state partners.

I'm going to turn it over to Max, I think you're going to facilitate this next one.

Thanks.

>> Thank you, Linda.

My first part, I'll just kind of be walking through, if anyone doesn't have the pleasure of seeing all the detailed mandates and what it means, I'm going to give you an overview of what section 114 is from the pipes act mandate.

So if you haven't seen it on your agenda, I'm subbing for Greg oaks.

Jon will be here giving lessons learned, what we've seen on some inspections.

We did have the pipes act that was issued in December of 2020, and the nature of the pipes act kind of talked two-fold.

There was a self-executing mandate of parts, saying industry has set procedures to look at reducing methane emissions, and then there was a second part of that that says PHMSA needs to do inspections to look at the procedures to the extent that operators are reducing methane emissions.

Methane emissions particularly national gas methane emissions.

So we do do an advisory bulletin in 2021, in June.

We started building our inspection program out of the gates, because -- like Linda said, Congress had us kind of shift the focus.

A lot of people -- this came up with Pipeline Safety Trust, is this a change in direction?

Our administrator we've always been an environmental agency but Congress gave us more focus in certain areas.

It's not like we're shifting resources from one area to the other.

As Tristan Brown said, they're linked between environment and safety, but, again, we didn't have a detailed inspection program on how to look at things like emissions and those aspects, so we built that out.

Operators had to be compliant by late December 2021.

And then our procedural inspections, both PHMSA and the states started in early 2022.

This last bullet here it says implementation inspections may begin.

There wasn't an explicit requirement in the mandate to have implementation, but Harold might talk about it, possibly other regional folks here, there might be a couple operators we might revisit to have follow-on, and Linda is on the panel and she offered to ask questions on, where we might go in the policy next.

That's where Linda offered to be on the panel and I get to ask her questions on policy, and you do as well.

And what we looked at, it's been talked about a little bit in this session as well, but both looking at vented emissions -- most gas transmission pipelines are generally vented emissions, things like blowdowns typically associated with repairs and maintenance.

Andy Drake brought it up about things like emergency shutdown devices.

They're typically needed for safety but he brought up a good point, we're looking at, yes, it's doing what it's supposed to, it's release is in the case of an emergency event, but that is releasing methane into the atmosphere so now we're also -- we collectively, us, industry, are tracking that, we're also tracking as a vented emission.

Any rupture, third-party damage, those fall into it.

Currently facility equipment design, had things like how compressor stations are made, different equipment used behind them, and there's also part of section 114 D which is a study to look at options for best available practices.

Typically for emissions from planned activities.

So -- and in the emissions world, too, we -- it's been brought up is an emission a leak.

We try to differentiate that a little bit.

EDF brought this up as well as Pipeline Safety Trust.

Leaks are when something happens, an unintended leak through a fitting or something else.

Emissions are generally something that's operational in nature.

That's kind of why the change of dynamics.

Leak is probably a subset of emissions but emissions is also looking at the potentially leak prone pipe, things like that.

What 114 did was look at any kind of planned activities that are going on, whether it's facility design, it could be repair or placement, those kind of aspects.

That report hasn't been issued yet, it's still internal in PHMSA but we anticipate it should be coming out soon.

And I'll talk a little bit more about that later.

That was transmission.

On a gas distribution side, we typically see what's considered fugitive emissions in a dialogue, and that's typically the leak prone pipe, cast iron, bare steel.

There are some vintage plastic people systems that are more susceptible to issues in some cases.

Things like meter sets, aspects of compressor stations a little bit in distribution, it kind of crosses over transmission a little bit on distribution.

Definitely residential meter sets.

NTSB has done recommendations on some incidents based on in-home methane detector sort of things.

It is looking if there's a leak of some kind but also looking if there might be cases where gas might be migrating into the house, things like that.

And then also excavation damage, particularly in distribution.

It continues to be among the higher percentage of causes that are out there.

This is some EPA data.

Another big part of this, it came up in the discussion as well, but we are working with -- there are collective executive orders on the extent to which agencies work together to address collectively the issues with emission reduction.

We do work with EPA look at their data they've collected through the years E. here's an overall chart of the inventory that EPA collects, this is publicly available.

The ones that are bolded here are the ones that are typically in PHMSA's domain, gathering, which is becoming more and more mileage with that with the recent gathering rule.

Certainly transmission and storage.

And then distribution.

Things like exploration, production, processing, that's typically not under PHMSA jurisdiction.

For those aspects, at least from this chart, you can see a good portion comes from either gathering or transmission and storage.

When you break down transmission and storage, we don't have slides bits roughly 50/50 between how much emissions we're seeing.

Probably more of a lean towards transmission depending how you look at it, but those aspects, and then of course the distribution.

So the applicability to section 114.

Again, 114 called for looking at natural gas emissions reduction.

So what's covered under that?

Certainly gas transmission, that's under regulatory authority.

Underground natural gas storage, certainly LNG, natural gas distribution companies, master meters.

Jon might talk about it.

Master meters both on the federal and state side but there are a bunch of master meter companies out there.

And then gas gathering.

A question has come up to what extent -- there's been some comments that I did that we're all addressing 195.

At least the general -- the scope initially was looking at if there is a natural gas pipeline segment or natural gas-powered equipment that's fueling or helping with any kind of 195 facility, that would be looked at as part of a 114 inspection.

So you might see some data where we're looking at hazardous liquid facilities but that's the intent of the focus, if somehow natural gas is related as part of that to either support or some other equipment involved, we would look at it.

And then certainly leak prone pipe.

There are a lot of folks doing the EPA volunteer programs, the general sense and when we did our inspections, Harold probably will talk about it more, there are definitely operators that are using a lot of the EPA voluntary programs.

It may address solace effects of sections of 114, but our inspections were not addressing compliance with EPA inspections.

We would defer to our colleagues at EPA for that.

Where we did the timing and format, the early emphasis was on transmission and distribution.

Then we transitioned a little bit to gathering later in the program.

Focusing mainly on programs and procedures, because that was the first part of the mandate.

And then at least initially, certainly we were still in the pandemic at that point, so it was well suited, we still were able to do it virtually in many cases.

Most of them were standalone but Jon might talk about it, some states do combine inspections.

Last bullet, it could be bundled with other inspections.

Inspections focused more on procedures for natural gas emission reduction, also looking at the extent to which they're remediating leak prone pipe and then any technically supportable criteria.

We talked about leak-prone pipe.

I want to put a plug in, through the bipartisan infrastructure law, we got some funding available to help with natural gas distribution infrastructure, and if you haven't met her yet, Shakira is our lead on the bill grant.

It's only available to municipality and community owned utilities, not including for profit entities, so again these are going to be your municipal type companies.

Anything from repair to rehab, replacement of gas distribution pipelines, or if they need to acquire equipment to the reduce incidents.

It does allow some ability to use those funds for equipment as well.

The grant reviews are considering criteria, the risk profile of existing pipelines.

Some parts of this we talked about integrity management programs.

In the context of distribution, distribution integrity management program, looks at a threat matrix of what's typically the risk profile of what you have, whether it's the vintage, leak-prone pipe, those aspects.

Some potential for job creation, the potential certainly -- it was touched on a little bit this week, but certainly equity, strategic goals, but certainly the potential to benefit disadvantaged communities.

And then overall looking at economic impact or growth.

So what Congress gave us authority to do was give grants, roughly 200 million per year and 1 billion over five years.

I can say on the first grouping of applications we've got, they're all right over 1.2 billion, so that shows you, there's a lot of interest out there, and we don't know yet where we're going to go.

We're still at least now limited to the 200 million per year so we're trying to figure out what we do with that.

If there are any questions, certainly defer to the shield and Shakira, she could answer some of those, where we're going.

Where we're going to go next, Harold is going to come over next to talk about the lessons learned from federal inspections.

Jon will talk about state inspections.

Cliff is here, talking about gas emission reduction technologies.

So common questions PHMSA gets is what are operators using or not using.

It's a difficult answer for us sometimes because we can't endorse or recommend specific technologies, and sometimes it's an antitrust issue, too, we can't really say what operator A is doing versus operator B, so we asked cliff to come outlook to explain at least from his perspective on R&D on where technologies are.

We'll talk about renewable natural gas.

It's not part of section 114 but in the global process of looking at climate, things like that, biogas is becoming more of interest, and we'll go to a panel for opportunities and challenges.

With that, we'll transition over to the next presentation -- well, Harold.

>> As Harold is coming up, I will mention something.

Max mentioned we had to do all our PHMSA and state operators had to inspect all pipeline operators that we regulate, by this December, meaning this month, all of them.

And Congress said GEO is going to come out to make sure we did it beginning in January.

So we had quite the incentive to come out and see you all.

You're going to hear more about that from Harold.

>> Thank you, Linda.

I'm going to talk a little bit about, the first part of my presentation is going to cover some of the statistics from the inspections and what we've learned and then we'll get into some of the lessons after that.

The first part of it, as of November 1st of 2022, this is kind of a chart of the statistics of what we've done as far as number of types of gas operators that we expected, from the federal level.

And there is a piece of master meters there that we're working on that -- but all of the other inspections will be done before the end of the year, or have been done.

This is just another graph, a bar chart of where we're at with the inspections and the level that's been done.

You can see the different types of inspections that were done and the numbers that were done.

You can see the master meters are still ones being worked on, but the rest of them are pretty close to being done as of November 1st.

You can see the graph as far as the overall inspections and status as well.

So this is interesting.

This pie chart gives you a better feel for what was found, the gray area, the NICNA, the no issues or concerns part of the questions, the NAs were not applicable questions, was 35% of the questions, the answers to the questions.

And then you get into a little bit of concerns and a little bit of unsats, a large, over half were satisfactory in their questions.

What led to that had to do with integrity management programs, it had to do with existing leak management programs that people had, operators taking the initiative of the advisory bulletin that was put out in June of 2021 and reminding operators of their obligations to be done by the end of 2021, and assessing their program for section 114.

The expectations were there, and some of the EPA requirements, the voluntary programs, all came together to help make that number much higher.

And here's a bar graph of each of the different types of inspections.

And you can see in the middle, the hazardous liquids, there was a very high number of NICs, NAs, the no issues, and no -- no -- not applicable types of answers for it.

And then the other ones.

There are some yellow in our gas gathering, gas transmission, hazardous liquid which would, LNG, unsats are the red and concerns in the yellow, and the concerns are things they needed to address and clean up on better than was being done.

Here's another graph of the numbers that were assigned and the numbers completed of all of the inspections, by region.

So it starts off with the central region through western and each of the five regions, and what was done, what was inspected, and how many they've completed as far as the inspection process.

And all of those will be done, like I said earlier, by December 30th of 2022.

So that's our process.

Including the master meters, okay.

So this is just -- it goes through with each of the different types of inspections that we did, types of operators, and kind of addresses and shows the unsats and what the numbers are as far as what the issue was, whether it was a process of emission or something else, and you can see gas gathering had one unsat that was -- had to do with procedures from leak-prone pipe, identifying leak-prone pipe.

And then gas transmission had 54 process emissions in that question for leak-prone pipe as well, and then hazards, liquid, had 86 process emissions for leak-prone pipe.

So that's -- and then hazardous liquid also had a number of other process emissions that were out there, procedures for identifying that they have -- whether they have cast iron, the classic identified leak-prone pipe nomenclature of wrought iron, cast iron, plastic, unprotected bare steel, identifying whether they had that or not.

And then the other one was procedures included methodology to collect and retain leak data, leak information, and look for the small leaks that are regulatory in nature, below regulatory reporting requirements but still important to look at your system and look for issues that you need to take action for.

And we get into, they had a couple more here that didn't have very many unsats on those, but still were issues, the leak prone drivers and engines, some of those issues as far as if they had natural gas and had processes to modify those or correct them.

And then we get into the LNG, and the LNG had the unsats, they just had one in a number of different categories, procedures -- it's a little different because they're looking at methodologies for sources of fugitive emissions, they're looking at taking adequate -- looking for emissions when they have a -- they have an earthquake or hurricane or whatever, are they checking their facility and making sure that they're looking not only the structure of the facility but looking for emissions as well.

Some of those had some process deficiencies and unsats, and these are the rest of the LNG ones and the process deficiencies and the different questions that were out there.

ESD testings and relief valves and some of the other stuff that they had to address.

And this is another session of those sessions that -- question sets for LNG, relief valve testing, procedures, include measures to minimize natural gas, and that's a process emission deficiency that was found in the unsats.

And then procedures, what's in place to reduce natural gas emissions during normal maintenance activities on the facilities.

And then there's some additional ones for unsats.

There's an unsat in a number of different questions for the LNG inspection.

On the other side of it, then we got into the concerns, and as we walk through those, you can see what happens with the concerns.

These are concerns that were greater than 10% of the inspections, on gas distribution, and I messed up, give me just a second here.

I left my water at the other end of the table.

I didn't think it would be that warm up here, but it is.

[laughter]

Anyway, federal concerns, the federal inspections that had greater than 10% concerns during the inspection were identified.

Gas distribution, we have a couple of gas distribution operators that the federal -- PHMSA does inspect that does not have state programs overseeing them, and so there was one there at 15% of those questions, of that question fell into that.

Methodology for identifying sources of fugitive natural gas emissions.

And then gas gathering had a series of them, the big one was the 50% procedures provide alternatives to cut-outs to reduce emissions in gas gathering, one of those -- and that's one that kind of has a two-edged sword to it.

You cut out or do you repair, and do the right thing, don't do one just because of emissions but do the right thing with it.

So that's one that's a little tough to -- we don't want people to think that just because it's -- to reduce emissions, I'm going to repair it and I should be replacing it.

That's for sure.

And then there's a couple -- there's four or five here that are 25% of the answers were concerns on it.

Procedures for flaring the pipeline facilities for transporting name gas.

Methodologies to correct, retain and analyze leaks below reporting thresholds.

Collecting all of those leaks.

Even the ones that you repaired during -- while you were in the field on those sites.

Procedures for ESD testing.

And then the other ones, minimizing natural gas releases for relief valve testing as well.

Those are the big ones that were out there on the question sets.

You can look through these and it will tell you what questions were missed by the operators or hadn't been addressed, had concerns with how they addressed them.

Then we get into the gas transmission side.

You can see where it starts -- the concerns start at 21% of the -- this question, 21% of the operators didn't have the answers -- or didn't have sufficient response to it.

The first one is, do procedures include a methodology to collect, maintain, retain and analyze detailed information from natural gas leaks below reporting thresholds, and that's a big one because the natural gas side, many operators have constant leak valves, they have other processes, they have the attitude that, you know, if it leaks a little bit, it's okay, as long as it's not hazardous, it's not a problem, and with methane emissions, we're changing that philosophy, that thought process for everybody.

And it's one that we need to think about.

And then leak-prone pipe and then we get into minimizing emissions, maintenance activities on compressor stations, having valves on each side of separators and filters and catchers to minimize the amount of release when you're doing maintenance work.

And procedures for -- the next one was procedures on -- in place for monitoring and identifying pipe segments that are leak prone and not just the pipe segments that are identified in the act as being leak prone but do you have other segments of pipe that could become or are leak prone or are becoming leak prone that you need to address and think about, and how do you identify those.

And then in -- a couple more in the gas transmissions and then we get into hazardous liquid, leak prone, leak data procedures include a methodology to collect, retain, analyze leaks.

Those below the reporting threshold.

That was a big one for everybody, collecting those small leaks and maintaining them for -- for the life of the pipe and looking at them periodically to find those systemic issues that are out there, and addressing those, being able to identify them and know, this is what I need to address and take care of.

And then leak-prone pipe.

On procedures to monitor for and identify pipe segments that are leak prone, and what criteria are you using to do that, is the 24%.

So how do you take that leak-prone pipe and identify that, identify those segments as well.

So there's two -- two big pieces to it.

One is identifying small leaks and systemic ongoing issues in your system, and then the other is identifying pipe segments as they begin to age and deteriorate from different conditions or different reasons and being able to address those and take care of them.

And then the last one on hazardous liquid, clarify procedures, process, to address replacement or remediation.

If you're having a remediation plan, when it becomes prone to either repair or replace that section of pipe and figuring out what's best to do.

And then the LNG, there were about five of the inspections -- question sets that were above the 10% federal concern -- had concerns that were above 10%, and had to do with fugitive natural gas emissions in the system, how do you identify those, procedures on

collecting data, retaining and analyzing detailed information from detected natural gas leaks, again, those systemic things that are going on is, lubrication equipment, lightning, otherwise below thresholds for reporting requirements.

Tightening.

And then procedures on tank inspections, and geophysical disturbances, including leak detection.

That gets us through the statistical data of what we saw.

So what did we learn from it?

What did we find out?

And that's the next half of my presentation.

We learned that we have this safety program relationship process in our pipeline data mart where we have all the operators report, all of the OP IDs under the same plan, and we were able to take all of the OP I.D.'s under a certainly plan and bring those all together under one inspection.

And that one inspection allowed us to look at interstate agents, intrastate agents, intrastate programs and bring those -- the underground gas storage, and bring everybody together for one inspection and try to minimize the operator's time in answering questions.

We tried to set it up so that the operator had to go through and prepare once, and answer questions once, and not have to have 20 different people calling and doing an inspection on that same -- and asking the same questions and getting the same answers.

So that was a very positive thing that I think worked out very well, as we moved through the process, we got better at doing that.

Early on there was a rush to start -- try to get it organized and figure out what we were doing, and so PHMSA learned from that.

That extra effort to coordinate was a real positive and a good lesson for what we learned to minimize not only our time, but the operator's time, too.

Some of the other things, there was conversations around implementation, doing engineering controls and operational practices, changing that thought process, making a shift from, well, it's just a -- once in a while, it's no big deal.

Well, it might be a big deal if you're not recording it, tracking it and following it.

And you don't know what you don't know.

So it's important that you have that process.

Hazardous liquid operators had a very few natural gas engines driving pumps in their processes.

They did have some stand by generators that a lot of them were fit from LDCs where they could get natural gas.

They had some flares, pilots on flares that were fit from LDCs where they were by natural gas to do those flares, flaring for some of their tanks and things.

So there was some involvement there, but not a lot.

And then the small -- very small number of hazardous liquid operators that had those gas engines and drivers and pumps.

Questions on section 114, applicability to hazardous liquids, many hazardous liquid operators question, you know, whether the act really was beneficial and whether it really applied to hazardous liquid systems.

And they had no natural gas, they were a new hazardous liquid operator, built pipeline 10, 15 years ago in the Bakken fields, they said, your code says I can't have anything but steel-coated pipe and cathodically protected, how do I have -- how does this apply to me.

So that was one of those things that took some discussion to help them understand that it's not only looking at immediate but looking to the future as well.

Having processes that as your system ages, if you have issues, how do you catch those issues and prevent them, and you have to have some kind of a process to look at that, both at leaks and at -- at small leaks, the systemic issues that might develop because you used a certain type of valve or flange, gasket that doesn't seal properly or becomes loose with weather change, and then being able to identify the overall process of the pipeline system as well.

This one got a little small but many operators -- they were unclear about leak-prone pipe.

It hadn't been identified other than in the act, PHMSA doesn't have any regulations on what leak-prone pipe is or how to define it, and they really -- they had integrity management programs that they were required to have, and they really felt like that and being cathodically protected addressed any leak-prone pipes.

Some of the things they missed was the fact that integrity management generally only covers your HCAs or your -- or your USAs, it doesn't cover the entire pipeline.

Now, you may inspect the entire pipeline, but you don't apply the same principles to the entire pipeline.

So if you have a leak outside of an HCA, how do you address that, and that's where some of that leak-prone issues came in and had discussions with them on.

And how do you define leak-prone pipe?

That was another one that they were really looking for clarification on from PHMSA on how do you define what leak-prone pipe is.

And having a -- defining some kind of a number of leaks over some pipeline segment over some period of time, and defining what a pipeline segment is, defining what your number of -- what kind of leaks you're going to accept and what number you're going to have over what period of time, all falls together to put together the right leak-prone pipe definitions and process and procedures.

And then having procedures that pointed to remediation and replacement, repair and replacement, having procedures that said, if in the future I do have leak-prone pipe that develops, then I'm going to so-and-so, my integrity department or my engineering department, someone's going to be responsible for developing that plan to address this issue and either repair or replace that segment of pipe in the future.

And then we had one question that asked about cast iron and unprotected steel, and vintage plastic, and people understood and could look at their system for that, but the next question was about -- or the question before that was about leak-prone pipe, and they just couldn't make the connection that that was something that they needed to address and think about on how do specific materials -- are there other materials in my system, and I had one operator say, I've got this material and I have this program that we're replacing this material on these systems, so that was important to identify and be able to address.

And have operators -- they need to be able to self-identify where the leak-prone issues are, leak-prone pipe is.

Collecting and analyzing leak data.

This was one that was interesting.

Hazardous liquid operators collect leaks on an annual basis, maybe on a two-year basis they look at them.

The natural gas operators, there's a lot of small leaks out there that are repaired on site that didn't get reported.

If I could grease a valve or I could tighten the flange or tighten a fitting and I stopped a leak, it doesn't leak anymore and I didn't report it and there was no procedure to report it, to collect that data.

So it was important to get that data on those small leak data points collected and put into the system.

And then both the operators hazardous liquid and gas transmission, were analyzing -- they weren't analyzing data over a long period of time.

They were just looking at what leaks did I have this year or what leaks did I have this year and last year, and they weren't going for the -- if you're not looking at the life of the pipeline and all of the leaks that have occurred, how do you know that you've got systemic issues going on?

So that's kind of that shift in engineering controls and thought process that's very important and I think it is making that shift and doing the 114 inspections.

Most gas transmission operators needed better procedures to check for emissions for fugitive natural gas.

Looking at compressor stations.

And a lot of -- it was interesting, natural gas operators, gas transmission operators, have a number of compressors, compressor stations, facilities, every facility has a different type of compressor and engine and stuff that's driving it.

Some of them are turbine, some of them are reciprocal, some are made by different manufacturers, have different procedures, so having those -- many of them said, well, we follow the manufacturer's procedures, but they didn't have any requirements to have those manufacturer's procedures at the facility and have the guy follow those procedures.

So that's -- it's a very important one to pick up on, to improve that process and engineering controls and reduce emissions following the correct procedures and having those procedures available.

And then it was interesting to see how different operators conducted or addressed 114.

Some of them took the 114 and did a specific White Paper or a separate document addressing all of it.

Some operators integrated it into their section of their plan and linked all of their other pieces of their own plan back to it, and those are the ones that really addressed all of the issues and tried to really understand what was going on.

People that tried to integrate those together and make those come together.

So then the other thing out of it was, will there be enforcement, or guidance resulting from these inspections, will there be enforcement coming from it?

There is some enforcement, mostly warning letters, NOA type of notifications, and the inspections in the future, what's going to happen, as Max addressed and Linda has left it to the regions if they have some extra inspection time that they can focus on 114 and follow-up, looking at records and observations on some selected operators to see how they're doing as far as implementing those policies and procedures and processes that they put in there, and then the last one, future rulemaking by PHMSA, a lot of people ask, is PHMSA going to incorporate this into a rulemaking and codify this or what's going to happen?

And I'm going to leave that one for Linda.

Next?

[applause]

>> Thanks, Harold.

I think, Linda, you might have had a comment you wanted to give at one point in Harold's presentation.

>> Thank you, Harold.

What you just got was a download of a whole lot of information.

That data was pulled from our inspection assistant database, you saw IA at the top.

That's where we store all of our inspection results, and they get aggregated.

So the Powerpoint will be available to you.

I recommend that you go back and spend more time thinking about what those questions actually mean.

Very quickly, when Congress gave us this mandate, they told you can we had to do it but they didn't give us the yardstick.

So we had to develop the yardstick.

Like many people, we believed, obviously this applies to gas distribution and gas transmission, right?

That's where we initially started, and we stopped there.

And then we went back and read the mandate and Congress very clearly and specifically included hazardous liquid pipelines.

So then we had to go back and determine what did that mean.

And so what you will see is, we have touched every operator that we inspect, and there are questions, and I expect, as we further understand that mandate, we may come back and ask you more questions, especially hazardous liquid companies, regarding things like emissions from tanks, sumps.

That's something we didn't look at real hard this year, but we really covered the specific natural gas emission.

As far as enforcement, our guidance to our inspectors was, if the company is saying -- that's probably not good enough.

You've got to think harder.

You heard from Erin Murphy.

We have to change the way we think about leaks.

If you have -- a long time ago when I started, I had a superintendent that said, you know, oil comes out of the ground so it goes back in, small leak, you know.

That's totally unacceptable, right?

Even small leaks on a hazardous liquid company are totally unacceptable.

We have not yet achieved that same paradigm shift of thinking with natural gas.

It's not acceptable to say, oh, it's a small leak, no big deal, right?

So even small leaks can contribute, and so we're tracking that.

It makes it hard, it's more difficult, the harder to see, the harder to catch, but what this particular effort is, Congress is telling us, pay attention, we have to reduce these emissions, whether they be operational, intentional, or inadvertent through leaks.

I'm foreshadowing a little bit, I don't think this is going away.

So it's not a one and done.

We'll be back.

>> Thank you.

>> I wanted to give Jon an opportunity, before we get to Cliff's presentation, this is just verbal, but Jon to give perspective from the NAPSRS experience, whatever you prefer.

>> I don't have a PowerPoint presentation so you have a brief break from Powerpoints for a little bit.

At a very high level, I think Max and Harold did a good job of giving you the scope of what the inspection looked at and I think Linda touched on the inspection assists software that was used.

One thing important to point out, I talked about on Tuesday, is how we differ among states.

And if we want to do a deep dive on state data, there's a handful of folks that used AI to do their inspections and other folks are using their own software platforms.

I don't have that full-out data dump that we can look at to show where the specific issues were.

I think kind of what you heard from Harold, you know, you would see probably some of the similar instances happen across the states as well.

I would say generally, just the pulse that I got from when we had a meeting a couple weeks ago with the natural folks, to get a pulse of what folks were finding, I think operators were generally prepared for this, and I don't think anyone showed up and the operator had nothing.

So I appreciate that folks were prepared, and I think folks were comparing notes amongst each other on how to make this happen with a new process or how they could utilize their existing processes and procedures to tie back to the section 114 mandate.

I think some interesting things are, just kind of the workload of what that looks like.

I also talked a little bit on Tuesday about the State requirements that we have, you know, for every plan and process that you might have as a pipeline company, we have to inspect those on a five-year interval.

So at least for our state as well as for many others, we're on a pretty tight schedule of what we have to inspect every year.

We often can't defer an inspection from this year to next year and still keep up with the cadence we have to.

All the states were tasked to put this section 114 evaluation in the mix of all the other planned inspections we had, so that not only created additional workload for the states, obviously it created an additional workload for the operators as well.

I think looking at counts, and I think maybe some of my metrics might be a little different than the way Harold had them sliced, but first and foremost we did try to combine our efforts, whether it was working with PHMSA or another state, if we had an operator that touched maybe five states, you know, maybe our state would do the inspection and collaborate with the other ones to try to minimize the efforts there.

I think we had around 8,000 different operators, not necessarily plans but 8,000 different operators that as states we had to account for, so that's looking at gas distribution, transmission, gathering, LPG that really typically didn't fit in the scope of these inspections, as well as master meters.

That's a lot of inspections to get done, bearing in mind around 4,000 of that 8,000 is master meter operators.

So a little bit on industry jargon for folks that don't know what a master meter is, think of your normal distribution company, they're supplying gas to your house or your apartment building.

You might have another scenario that pops up where that gas distribution company is supplying gas to, maybe it's a trailer home park or it's a shopping area or something like that us where you have a large meter and then there's further distribution of that gas, you know, to the tenants that live in that area.

That is kind of the scope of those master meter operators.

So those are very small systems, but nonetheless, the scope of these inspections.

As of September, we've completed around 1800 of these inspections.

So there's still a lot of inspections by the states that have to be completed.

Again, that's just really back to the workload and looking at the small master meter operators that we have to work with.

Just kind of going through my notes here, as far as some of the specific issues or safety concerns that were identified, obviously there's a big, you know, drive with the mandate, is to kind of change how we handle natural gas.

If we're talking about operational things like testing your relief devices, there's going to be a shift for -- you're not popping a release of natural gas, you're going to use nitrogen to test, rather than purging out the line, you're going to use flaring techniques or some type of capture process.

And as we start utilizing those new technologies and those new practices, those can prevent -- not prevent but they could result in other safety concerns.

If you're flaring gas, if you're trying to manage gas with valving where you're going from high pressure to low pressure, trying to minimize releasing the gas, trying to keep it contained, now we need to watch to make sure we don't have outages our overpressures as we're handling the gas.

As far as continued inspections, I think just by looking at past regulatory changes when you have a new process, a new procedural requirement for an operator, you need to look at processes, you need to look at those procedures, but I think at the end of the day you need to start looking at what is the effectiveness of it, you need to see what data, what records tie back to that new process.

So I think that's something that, yeah, you can look at procedures today but you ultimately need to look at how does that happen in real life from day to day, looking at leaks right now in distribution companies -- you know, we're seeing around 500,000 leaks a year on distribution customers.

Obviously those fit in different grading categories, grade 1 being the highest, immediate life safety leaks to the grade 3 that are monitoring sorts of leaks.

200,000 of those are typically hazardous leaks.

Largely in part to excavation related leaks.

If you start looking primarily at distribution companies, and I think this might be a way that we'll look at some of that effectiveness, we'd be looking at the equipment leaks that are happening.

If you look on the distribution side, that's where a lot of those leaks are happening, is on equipment-related leaks.

Again, with either integrity management or kind of that new environmental lens, we would hope to see those leaks trending downward.

That's all I have unless there's any other questions specifically.

Thank you.

>> Thanks, Jon.

A question Harold had -- a question came up on rulemaking.

I'll take a first swing at it.

Linda, certainly advise.

There's also section 113 that is leak detection rulemaking and that's currently in play, at least publicly mentioned, similar to others, we can't say what's specifically in it due to ex parte, and the report, it's not out there yet, we'll probably talk about some of our various rulemakings in play where we believe they help address some of the emission reduction interests as well.

And you probably saw in some of these slides, there's a lot of work already in play with some of the voluntary programs through EPA.

So it's kind of a good question, as we talked other parts of this conference about SMS and others is, is regulations the right approach, is it still following something SMS, as operators are still learning more about this and it shifts from the paradigm of managing leaks to actually fixing leaks.

So we're kind of seeing how that plays out.

When you look at technologies, it gets touchy on how far PHMSA can lean into it because everything requires a cost/benefit analysis, and any kind of technology you consider, maybe Cliff will touch on it, but there's a cost component to it as well.

So it is a good question of how much did PHMSA lean in on a regulation versus still providing the flexibility while we're all kind of addressing this as well.

Certain aspects, and Linda touched on, there will be a GAO component to how we do inspections so we will continue to learn from the inspections, and then certainly welcome when GAO looks at it as well to see what they -- Linda, I don't know if you want to talk more about rulemaking.

>> I would say, when it comes to the way Congress functions, there's different ways we get out mandates to create rules.

Sometimes we create them ourselves, we see a safety issue and we initiate a rulemaking.

Sometimes we petition to create a rulemaking.

But a lot of our new rulemakings come from Congress.

And Congress in this particular case, set us a mandate to do inspections, they said get out there and start doing inspections.

Then they told the GAO to come behind us and check on our inspections and collaterally that's going to be what we found, right?

GAO will send a report back to Congress.

I would not be surprised if Congress doesn't act on that action, either by saying, attaboy which is probably not going to happen, or they're going to say, hey, you need to do more, you need to regulate or you need to incorporate this full, you know, long-term, or give us some guidance.

The reality is, our role has changed.

We are in a changing environment right now.

And the expectations of society and of government are different.

To even what they were 5, 10 years ago.

So we need to just understand that and move forward.

I anticipate we will see more on this.

Can't make any certain promises, but I anticipate it.

>> And I wanted to add, we're also looking at other vehicles we have currently available to help get the message out.

One example, special permits, but in some of our recent special permits we're starting to apply some conditions.

And they're publicly available, but if not, ask Steve and he can give you a list on the recent special permits, kind of approach on how are you looking at methane emissions in general.

There is some mention of -- I don't know if it's mentioned yet but there's a gas piping technology committee, GPTC guide that's kind of out there, it's not incorporated but kind of a go to on grading leaks, so we talked about the hazardous leaks, your grade 1s, then grade 2 which are scheduled, grade 3 are monitored.

But as part of the special permit conditions, going through the process and kind of -- I don't want to say accelerating but looking at the schedules and trying to shift that mindset a little bit from, again, just managing leaks to fixing leaks and then also aspects of environmental justice, things like that.

>> Just a note, if you guys wonder why we're doing this, we're checking in with our folks in the back.

>> Yes, and if anyone doesn't know currently, first we had a text that came through, 195 on the webcast, we realized that 195 people on the webcast, someone thought, we're talking part 195.

It's 195 people on the webcast, roughly 50 in the room here.

>> We have questions that are coming in.

Do you want to do that now?

>> Yes, we still have roughly 10 minutes before Cliff.

Questions on the webcast?

>> We have four.

>> Yes, we have several questions on the webcast.

First from Charley.

For the 114 inspections, were the areas of unsatisfactory or concerns provided to each operator in writing so they would know what specific items they need to address?

>> Take that, Harold?

Or Linda, either way?

>> Yes, there was -- the inspections were addressed very similar to what we do in our normal inspection process as far as doing an exit interview with the operator verbally and then doing a written follow-up exit interview -- or notice with the operator as well.

So every operator is being notified of what was found and what the issues were, and how to address those and what they need to do to address those issues in the future.

Prior to any type of enforcement that might go out to them, they're notified of that stuff as well.

>> Okay.

Thank you.

Next question from -- is PHMSA recommending flaring where gas capture is not viable?

>> Would you repeat that.

It couldn't --

>> Is PHMSA recommending flaring where gas capture is not viable?

>> I think that's -- that's up to the operator to make that decision.

What PHMSA is doing is, if you do flare, you need to have the right procedures so that you're not blowing name gas through the flare into the atmosphere, if you're going to flare.

But there are other methods besides gas capture.

Sometimes they can take a pump and pump it back around a valve into another and minimize -- back into the pipeline in a different place, minimize some of that, the amount of gas.

And that's the intent of it, is to have different methods and processes so that you can minimize the amount of natural gas releases, methane emissions.

>> I'll just add, I agree with everything Harold said.

One of the other aspects of 114 D is looking at, we want to reduce methane, certainly, emissions, without compromising safety, so there are still some safety measures that have to happen, ideally, we're going to capture it or something else, but I agree with Harold, it's kind of an operational decision from there, what's the best approach, and, again, without compromising safety.

Maybe we'll go to Bill real quick.

>> Bill Caram, Pipeline Safety Trust.

I'm curious if -- [no audio]

Different things than what was presented in the webinar, so if that question set is the new bar that they referenced that they need to meet, I think it would be helpful to make it clear to the operators so they're better prepared for the operation.

>> That's fair.

I think this is somewhat performance based.

Operators shouldn't limit themselves -- the danger with PHMSA putting out question sets is, that's where people aim, and we want people to figure out what they can do within their organizations, within their facilities, to minimize those emissions, even if it's not on that sheet, just don't default to that minimum.

But I understand that that would be useful to make sure everybody gets at least to that level.

Fair enough.

>> Before Mark, any others on the webcast?

>> Yes, we have a couple of others.

One from Mike, was there a baseline established around met 18 emissions, and if so, how are we measuring progress?

>> Oh, yeah, baseline.

As a thought, the baseline for overall emissions, this came up at Pipeline Safety Trust.

I will say other than the EPA data we've seen on -- you know, that's kind of a baseline of what we're seeing on methane emissions, I don't know if PHMSA has collected that.

We certainly collect things like releases of incidents, things like that, but that's maybe a question we'll have on the panel later, is what kind of information should we be considering collecting to the extent we can of what we already collect to kind of infer that, so that's the closest I think we have a baseline is what EPA in general is seeing, and then hopefully looking at what the trends are.

I don't know if Linda has other thoughts on that.

>> I think that's on target.

Things have changed.

We didn't collect very small leaks in the past, and how do you collect that information?

You have a small leak, how do you gauge it?

A lot of it's estimated, even if you look at some of the EPA numbers, some of that is estimated.

It's hard to specifically give a value.

Going forward, there's new technologies that help people to estimate, you know, plume size and volumes, and maybe that will develop and take us to a better place but right now we don't have a very solid baseline other than our incident data.

>> We've collected things like amount of hazardous leaks repaired but there's no way to normalize that per se so we do collect volume it's a reportable incident.

>> I'll defer to the gentleman in the sweater first.

>> Andy?

>> I appreciate the gentleman part.

>> Is there someone behind you?

>> I looked around.

Must be me.

Andy Greg with Enbridge.

I have just an observation.

I appreciate Erin Murphy's comment about looking at releases of methane differently, different mindset, mindset shift, if you will.

And I think that's incumbent on everybody in the room, everybody in the industry, not just the operators, but everybody.

And one of the things that I think we will experience, and I just want to kind of throw this thought out there so you can kind of iterate on how to address this, is, you know, the operators are going to have to change the way they're thinking, the way we're working, and the end proposition is, a lot of the ways we work are predicted by regulation.

Though regulations were written in 1950, many of them.

That was way before methane was viewed as a pollutant.

And it was pretty much focused on safety.

Safety.

If there's ever any question, blow the gas down.

Ever any question, blow the gas down.

I think part of what we're going to see in the next 1015 years is a rethinking of the way we work, which will include regulations, ESD stations, what kind of repairs we might use, what kind of technologies we might bring to a repair to avoid a cut-out or blowdown.

And I think, you know, where my mind is going is, I really want to create a conversation about, how do you see the most constructive way to start rethinking those paradigms?

Is it special permits?

Because that's a venue.

Well, we have an alternative, we want to do this.

Well that's different than the regulations, we're going to try something different.

Is there a different process, is there a different venue for different challenges, like if we want to rethink ESDs, would that be better to sit down together and map out, you know, section of blowdowns or different criteria around blowdowns before we try to throw the rock over the transom, you know, into your boat and say, let's try a special permit, you know.

I just wanted to think out loud about that because I think that's really a big ingredient in how we evolve collectively over the next 20 years, and it's going to take us all to rethink the paradigm, and I think part of that is where did the paradigm come from.

Well, it came from 1953 or -- not that all the regulations are that old, but a lot of them are, and I just wanted to kind of be out loud about that because I think that's part of what the industry is challenging, also, is industry standards, many of them are very much written before that mindset started.

Anyway, I don't know if you want to answer it or if we want to try to pick it up as a conversation that we need to evolve, but I thought I'd throw that out.

>> I think that's good.

We have a portion after the break to talk about some of this, where do we need to go collectively, so I think that's a great feeder to think about.

One more question for this mark to Mark and then we'll go to Cliff's presentation.

>> Mark Harris with the blacksmith group.

I wanted to point out that Bill and PST have a very active transparency process, and I'd suggest you think about that with your answer to the --

[laughter]

With the report that you're talking about that's going to be available soon, will that be issued for public comment, will it be issued in final?

How will you address that?

>> I believe at this point it will be final to Congress, yeah.

We will probably -- certainly give our colleagues in EPA a chance to look because we will probably talk about some of the regulations and some of their data, but, yeah.

>> Thank you.

>> With that, I'll hand it over to Cliff, President for PRCI to talk about emission reduction technologies.

>> Can you take one more question?

>> I've got to note that we have three more questions online, and we do have a panel session that's coming up.

Mike, are you good waiting -- because we've got some time set aside for that.

Thanks.

We won't forget you online.

>> Now, again, my name is Cliff Johnson, President of PRCI.

This conversation about collaboration, how do we shift, our primary focus historically has been safety.

Now we're going to layer on the environment, which is an appropriate behavior but it's just layered on, so how do we do this effectively?

And getting the seconds in the room to talk about what the goals should be and how do we want to achieve it, by when.

Yesterday, technology transfer, if we end up in silos, we're going to end up in a siloed kind of response.

What we need now is a more holistic, across it board here's what we're doing.

It's a unique behavior.

We're shifting, we're creating a whole new environment from safety to environment.

And they're not exclusive.

As a matter of fact, if we produce safety well, we're going to reduce emissions, just by the nature of the definitions.

But we need to continue to work on that deliberately and thoughtfully.

This presentation moves into that process.

For those of you with us yesterday, there was a discussion on what PRCI was.

I want to draw your attention to one thing, we do have the facilities part of our program.

We talk about emissions on the pipeline infrastructure, the majority of them are around the facilities.

We want to make sure we capture that thought process and capture that information there, and it's something that our independent has been working on for many, many years.

In 2020, just before Covid, PRCI actually took the step and said, we need to make this an industry wide initiative and put aside \$5 million for three years to aggressively move into the greenhouse gas reduction discussion.

That was before Congressional direction, it was before getting into this idea of safety and environment.

We knew as an industry this is where we need to be moving towards.

We've become very, very safe in our industry, maybe you heard about the five nines we talked about.

That's an important statement.

However, any release is too much.

So how do we continue to fight that, how do we continue going after that.

And Andy yesterday mentioned the plan to check behavior, and another corollary to prevent, mitigate, protect.

We want to continue looking at that.

We talk about leaks, trying to be preventative on the leaks, if it does get out, we can do the mitigation and then the remediation.

We need to remember the full process that we have and how do we do it.

I believe everybody in this room and everybody online has the same goals, safety, and reducing our environmental impact.

We want to be good stewards of the things we have.

It's important for our industry to continue to pull forward to where we want to be, and this is part of that story.

I mentioned our mission yesterday, again, the collaboratively applied research is the important conversation.

What I want to show you is some of the technology being developed and being reviewed by PRCI.

Some of it's not new but we put it in a new way and enhancing it and moving it forward.

Where we are on leak at the text emission reduction and what these tools can do for us.

As a reminder, we're a global organization.

Members from around the globe, everybody looking at the challenges we have.

Can I catch up the slides?

I'm talking too far ahead of us.

When you begin looking at the overall story, the pipeline reduction that we need to do -- excuse me, the emission reductions we need to do is significant.

We have an opportunity here to really make a huge difference.

When you look at the key issues, some of the challenges that we're looking to is the combustion, and we talked about in prior presentations about looking at the engines and how to make sure everything is being cleanly burned.

We look at how we do the blowdowns.

We need to do pipe repairs, the product needs to be released but how we do it effectively and efficiently, maybe not a full release or a way to circulate the information we have or the products that we have.

When you look at the makeup and see where we're coming from, pipeline systems is the largest patch that 10%.

If you go back to the previous slide, it shows you that only 10% is from a methane point of view, from oil and gas industry, but it's a significant part, and we need to continue to drive that down, but when you look at 10%, here's how it's made up.

Impact on the greenhouse gas emissions from the pipeline sector can have a huge reduction on the overall story.

We're going to look at our greenhouse gas emissions at PRCI as improved efficiency and make sure there's better operation and reduce the emissions overall.

When you look at the goals that we've set for PRCI, again, we want to be able to reduce the emissions from the systems.

We want to tie it to safety because -- it's a better safer system and the environment is a critical part of our component.

I jokingly say that PRCI founded in 1952 was one of the early environmental organizations.

Our members wanted to make sure that the products stay in the system as long as possible, that's the ultimate driver, and to make less impact on the environment.

The opportunity here covers both gas and hazardous liquids as we heard in prior presentations and it's something we need to keep mindful of, when the rule came down from Congress, people think about the natural gas side very quickly but there's a key component on the liquid side to make sure we're paying attention to around the facilities to really drive it forward.

As I had mentioned, this is a multiyear endeavor by PRCI, we're going to invest approximately \$5 million over that three-year period to help advance the story.

It doesn't mean we're going to be done in three years, as a matter of fact, we'll probably just be on the very beginning of a very long journey.

We've been doing this work for quite some time and there's quite a bit to be done but these three years we'll make a significant stride forward and make the industry in a better place than we found it before.

Here's kind of where we've been so far, in the last couple of years we released a report, really talking about where the release is coming from and where we can begin to minimize the impact.

We believe that we've seen a huge increase already from 2015 which is some of the most vital data that we have with EPA, 2018.

We made significant strides beyond that but there's still more to be done.

This report begins to lay out some of the places we begin to look and where we begin to focus on our work and efforts there.

One of the things that we did initially was take a step back and say, if we had to look at this, how do we begin, which area should we identify and prioritize.

We developed a software that we'll talk about later that begins to put some identification factors for the industry to begin to say, where should I look first, where do I need to

begin my leverage both from a financial point of view but from an environmental impact.

What are the most important assets for us to look at.

Looking at how the compressor and pump stations, the engines, how do we make those more efficient and effective.

Reducing blowdowns.

Reducing fugitive leaks.

Continuing to push on how we quantify and detect the leaks that we have coming out.

The industry has been working on this aggressively and using different technologies which we'll talk about later.

Leak mitigation programs and how to go down that path.

There was a mention -- there are some nice ties between leak detection and prevention, and greenhouse gas emissions reduction.

We were fortunate recently to receive an award from PHMSA to begin exploring innovative leak detection methods for gas pipelines.

This is a great complement to what we were able to do already and it's exciting to continue our partnership with PHMSA.

We have many awards the last several years, and this was awarded last year to look at where we're going and how can we do this with advanced knowledge on data and using the artificial intelligence that's available to us today to begin this process.

I'll walk through some of the tools and techniques are out there, not to go into a deep dive but if there's questions we'll be able to talk about them a little bit more, how the industry is responding to this.

Some of the things we need to do is how do we get emissions from blowdowns and repairs.

We're going to hot tapping where we have a live line, we're going to insert a tool into it but wave we do, we want to make sure everything around it is taken care of.

This isn't a new behavior, we've been doing it for quite some time but there's a significant number of improvements we've done.

We'll continue to move this through the process and advance as we go down this opportunity.

The next is called smart pipeline isolation.

This is a process where we stop the flow of the product to be able to work on a segment in between.

This is something we've seen some huge advances in, and we've seen dramatic improvement to allow us not to have to release the product to do the repair but to isolate that situation and be able to do it.

There's a lot of companies that have technology that we're looking at to see if we can advance it to make it go easier for our operators to do it.

Right now the tools are pretty cumbersome and large to utilize, and it's a very challenging prospect.

Sometimes it's easier to do the blowdown because of the tools.

We're seeing advances to see the technology become easier to use and quicker to put in place.

Continuing to have that idea is then, when you have product, can you remove it from the line in a safe way, and so the zero emissions vacuum and compression begins to pull the product out, allows it to be re-entered into the system in a way that safety is achieved but also reduced emissions.

Excuse me.

The next thing we want to look at is the repairs and begin to see how we can do this in an effective manner.

These are temporary repairs that we put into the system to allow us to have a healthy opportunity to have a longer term life of the asset.

And as Linda mentioned, we have a system from 70 years old, it doesn't indicate about integrity but it means we need to do additional work and to pay attention to where we are as we do these repairs, represent to make sure they're going to last as long as we think they're going to and be in places that we need.

PRCI has done significant work in this area.

We had a 10-year study that showed how far the composite sleeves work or don't work, and we worked with vendors to improve that to show the life of the assets can be

extended 20, 30, 40 years now, and that's a huge step forward for our industry to have that kind of confidence.

Mechanical repair clamps, this started back in the '80s and it's something we began to use a little bit as an industry, and we want to continue to push this to see if we can get longer design life of these clamps and to see how valuable this can be.

Then there's a thing you can do with leak clamps, which is an isolated solution, coming in and really dealing with right around the defect.

This is a very short opportunity, a really quick repair, then you come in from a longer term solution, but when you have an immediate need, you can do this.

PRCI is investigating all three of these continuously and currently in our environmental point of view, we're looking at them again, even though I mentioned a 10-year review on the composites, we're looking at it from the environmental factor on the release.

Am I behind am I slides again?

Too many things to think about, trying to move and talk at the same time.

As we look through this process, how do we do this, and continue down this road?

These are the technologies that we're needing for industry to make sure we have a safe system, and now we put in the environmental factor on top of it to think about the emissions.

Coming back to look at it from the next level.

I'm on the same slide now.

The next think I want to talk about is that engine efficiency and looking at how do we get more quicker and leaner burn, and last year the national petroleum council put out a report about the nation's infrastructure, talking about the way to reduce blowdowns and how to change that, how to increase engine efficiency.

If you're looking for a study to talk about this a little more detail, the national petroleum council released that last year.

This year the national petroleum council has two studies going on, one on hydrogen and infrastructure to support that and the second one on greenhouse gas emission reduction.

This is going to be part of the conversation as well, how do we continue to do engine improvements to make it more efficient and a better burn.

The first one there, the technology for the VORECON, looks at how do we get a better control on the speed to get the product through the system.

By doing this, we're able to allow this to become more effective and more efficient on how we burn things.

Then the precombustion chamber enhancements, this is where we can have a better burn prior to it being combusted, allowing for everything to be burnt up and not released during the engine process, allowing for a better utilization of the fuel that we're pushing through it.

Last one is relatively new to the market and looks at effective flow, air which increases efficiency and how to allow engines are key point of where the emission release is and continue to move down this process.

We look at deficiency and look at overall system and dual driven system provides operational flexibility to meet sitespecific emission target and allow for multiple uses. Switch from electric to minimize carbon emission and continue to run, between natural gas and electric and achieve efficiency. Look at performance augmentation of the system, this is parallel branching process to allow for the flow of the product in two different ways, allow efficiency in the engine and make sure we have more efficient opportunity to allow flow of the product to continue for the process. Then continuously monitoring the equipment, make sure we get responses from the system to more effectively drive us forward to allow the opportunities for us to get efficiency we want to achieve.

And last thing I mention before, co2 economic analysis tool allows us to begin looking at where do we begin identifying the opportunities first and layering through the process and upon had the industry say these are priorities, issues and where we need to go. What I would like to see from my PRCI point of view, have more review by the public and the opportunity to see engagement on where they see need and opportunity for more effective system on the emission side.

These are great tools we're continuing to test and develop.

What else we need to be thinking about, and other parts of the system we're not seeing. One thing we doesn't discuss in my presentation today was detection technology using for greenhouse gas emission, aerial surveillance and satellite to understand where emissions come from and do this in a largescale situation.

Having a partnership between doe, PHMSA and EPA allow for greater conversation on where various sources are and many things we need to address through the process. So that is end of my presentation, I look forward to the questions and discussion where we are going with the industry, and research portfolio and figure out more efficient and effective systems. Thank you. [Applause]

>> We do have time for questions, Cliff specifically, otherwise circle back to questions from the webcast. Anything for Cliff? All right.
Elana.

>> From Carlos, when will PHMSA begin inspecting records for requirements?

>> So depending on where an operator was from preparing procedure, some had and we will look at that to validate it.

I think as we go forward, we may see where we had let's just say there were operators that were challenged.

We get concerns issue might go back and visit them and look at records, we do not have a definite plan in 2023 to go back and look at every single operator's procedures.

However, I would suggest that we might incorporate that into our more standard reviews, more regular reviews we might ask, okay, we talked to you last year about procedures, let's take a spot check at the records. We have a lot on our plate for 2023 already and I'm not sure that we're going to be doing a fullon records check.

We may do that in 2024.

>> Okay.

Thank you.

Next question from Jack Wilson, part 195 requires pressure testing without leakage, part 191 is a strength test that essentially allows leaks during testing established the desired MAOP, what are thoughts about changing part 192 pressure test require MBA to same requirement of 195 meaning testing without leakage?

>> Want me to take it?

>> Good technical piece in there, yeah, let's let Linda, yeah.

>> So very astutely, I remember having a discussion when I first came into the industry and I didn't recognize difference between leak test and a strength test.

I got educated real quickly.

So there is a distinct difference and the question is should there be.

So doing a leak test on a transmission line, to me, seems to be nobrainer that may be in our future. We'll have to change some regs to get to that point.

But it clearly is an issue, we don't need to have pipelines leaking, if they are in a remote area, that is that whole paradigm shift between any leak is no leak is acceptable at this point, we need regulations to catch up.

That does take time and it wouldn't be that regulation that would change, you would have to change a flurry of them. I will pause for a moment, Allen, anything specific you would add on that?

>> I would be curious what an operator might say, but from my perspective, we expect the system to be gas tight, so requirement, if we need to tighten it up, we'll take a look at

that, it is news to me, that we need to, our expectation, the systems are leak tight when they are brandnew and process of validating the maop for a gas pipeline to require strength test and an aspect involves a leak test, as well. The expectation, when it goes into service, it is leak tight.

I want to add related to the great discussion earlier on how we're measuring this and keep in mind we are in rulemaking, one aspect of rulemaking specifically in this case, election detection repair.

We'll be records information collection, you can expect usual we issue rules there is followup information collection update, so you can expect that would be the case here and that would be where we have the opportunity to measure and improve our measurement for the new rule that comes out.

I want to leave you with food for thought, specifically related to measuring performance of pipeline industry, specifically related to natural gas, but here goes.

We see metrics of performance to the industry in graphs that we're all familiar with that show serious incidents, significant incidents. Some charts show flat line and some improvement.

Serious incidents, we show over time improvement, which is what we like to see.

However, here is what I want you to are c.

Let's focus on consequence to people and property, which per definition say of serious incidents, where you have injury to a person or death.

But consider this.

As far as another way to track this has to do with another aspect of what we're doing in protecting the environment, related to severity of the leak, of the incident, related to methane, we've done initial looking at metrics that we have the ones for serious, but look at another way on severity of the leaks, be interested in feedback and people to ponder that and if you have input, I think that is an opportunity going forward is another way to track performance besides the graphs you're used to seeing is ones that look at how much is how we're doing related to release to the environment and looking at data that way. We know, no one chart gives the whole picture, collection of different data points do, so that might be a nice one that would add to suite of tools we have to measure performance.

>> I'll add to that and say, when we had some folks that prepared that presentation, rerecking incidents based on emissions, based on volume released, it paints a very different story and that is consequence side.

And it also, as regulator, I start thinking, does that shift our focus on who we start engaging with on how you managing, responding, how you are preventing large releases, it just makes you think.

So thanks, Allen.

>> Mike from Shanir might have had a question.

>> Mike Myers, Shanir Sabine Pas. You mentioned guidance that wasn't incorporated, for members of the public that might not know, brief discussion of what that meant and the comment the gentleman had led to deeper discussion 193 space enjoy, 193 32605, so we tend to follow industry consensus standards in lieu of prescriptive regulation, there is better discussion what that requires of you the regulator and we the regulated.

>> Good question, anybody from GPTC here? Okay, high level, it is consortium of industry operators, there are some regulators, I think, PHMSA state, as well, state's on there, as well. They sort of develop guidance based on regulation on ways to address it, not an official PHMSA FAQ, not PHMSA policy, there is parts where GPTC prefer not to incorporate directly, it is a good goto, good discussion of keep it separate, don't make it a direct regulatory, it is go to of many sorts and not something we incorporate other than aspects like grading of leaks as come up.

We have had desires or questions, can we standardize an approach of some sort and a lot of people use the GPTC guidance for different grades of leaks and special permits are pointing to that and giving idea where we go from there, hope that helps answer the GPTC question, any other question I refer AGA, the secretaries, the individual used to be Betsy, I think Betsy recently retired, I can't remember who is the aga point of contact.

>> The question more oriented with are requirement of reference, I think a lot of people don't understand that specifically. Thank you.

>> Yeah.

>> Before we go to break, I wanted to mention, I don't know if Andy is still in the room or stepped out.

There he is. This seating freaks me out, all heads are lined up. There is Andy, in response to your comment, I think you raise important points we need to think about. We really think about.

Addressing changes on casebycase special permit basis may not be the best solution, may not be the best national solution and it may only address a specific operator's specific situation.

That is the benefit of a special permit, you can fashion special permit to focus in, dial in on specific operator situation, the special permit, you can sometimes apply it nationwide, the concept because things change, we need larger dialogue and again, messaging, 2023, we are talking about a lot of issues, how do we I don't want to say modernize infrastructure and regulations to get them ready for new energy, how do we make sure they stay in tact, how do we change how we think about leaks and emissions? We were at a pivot point of great change and need healthy dialogue involving all parties issue not just industry or regulators issue would be bad for regulators to huddle in a room, this is the solution, we need to involve the public and involve industry, we need to

involve people that don't agree with us and hear from them.

Also we need to hear from people that are innovative and creative, because we may have tendency to fall into ways we've always done things and maybe there are better solutions out there.

>> Before break, doublecheck webcast questions we didn't hit yet.

>> Yes, question from Ben for PHMSA.

Inga appreciates efforts to reduce emissions and working diligently to do so, PHMSA can assist by advancing class location rule, Inga estimates by finalizing the rule, 800 million standard cubic feet of natural gas will be stopped from being sent to the environment and Congress sees value of this rule, which is why in section 115 of the pipes act, Congress understand mandate meeting by end of calendar year 2021, that deadline passed some time ago, can you update a calendar when PHMSA will hold that GPAC meeting? Thank you.

>> Can you speak to the GPTC calendar? I don't have that

>> GPAC, calendar, yeah.

I think you said GPTC calendar, yeah

>> I think meant GPAC calendar.

>> Advisory committee calendar, it remains on our regulatory agenda, we have a lot of work ahead of us. Allen.

>> I think you are on the right track, Linda, on regulatory agenda, which is posted online.

We don't have a GPAC meeting scheduled right now, there is just a lot of things, you have seen our docket is very, very busy, that is important one, mandated and associated with it, and mandate associated with other ones on the docket, so it is on the list. I can't give a date on the actual meeting, but it is on the list and important to us because it is a mandate, as well.

Just stay tuned, we just don't have it on the schedule right now.

Thanks.

>> The other thing I would mention, we're talking about different issues, this week you heard us talk about things from geohazard and CO₂ and blended hydrogen and transportation and many other things we're talking about today, emission reduction, it carries a lot of work.

For those of you that may have attended Pipeline Safety Trust meeting last week, message I heard loud and clear, with regard to CO₂ was yeah, we need to update regulations, we need to make sure good safety oversight, but there is research, some understanding of risks that need to happen, too, and can you do them simultaneously? You don't want to get ahead of one.

So one before the other.

You have to understand what you're trying to address and make good decisions. You don't want to make a decision and find out a year after, you forgot something important. The question is how do we keep the pace to stay on top of things? How do we do things in the right order and make sure we are getting the information and input we need without slowing down.

So it is a challenge, it is a workload challenge, but we're working on it but it requires a lot of input from all parties.

>> I triggered Andy.

>> This is Andy, yes, you did trigger something and I think I appreciate your comment earlier about rethinking and it takes all of us to rethink and I'd like to advocate for the use of the advisory committee to get more proactive position, use that forum. You have a stakeholder presents, use that forum to think proactively to solve problems ahead, not just react to rulemaking being proposed.

That venue is probably the best regulatory venue I know of right now in any sector of the regulators and how to vet out among common group of stakeholders, healthy cross section, the challenge of an industry and direction.

I like to throw that out there. I really think you have a great forum, other regulators don't have, and I think using it differently would be very proactive, especially like you said, right now give the challenges we're facing. I thought I would throw that out there, food for thought.

>> I will also Bill, pipeline Safety Trust, to tag on to Andy's comment there, while the public is at structural disadvantage in those committees, I agree they are essential to rulemaking and I do believe that that opportunity for all stakeholders to get together in that really unique format does provide for better rules and more robust and resilient rules.

>> Thank you. Thank you both for that comment. So

>> What does that mean?

>> One last question online.

>> Going to break time, let's continue, we can adjust panel later, go to questions.

>> Terrence Peterson, is it PHMSA policy as implement section 113 and 114 to avoid overlap with EPA methane emission?

>> Yes, fair to say, we do not want to encroach on EPA, things come up on my jurisdiction, station is good example, what is covered under EPA versus not, collectively working together with agencies, we give courtesy review of some we think might crossover to each, courtesy to the agency.

I don't think the intent is to encroach on EPA, there are probably areas we work together on.

Hopefully I don't know if that is first path or Linda wants to fill in more?

>> We find that PHMSA and many other agencies overlap in a variety of areas with emission, with EPA, with environmental response, emergency response plans, with OSHA, you can just, we all have to negotiate. Sometimes, I will say this, though, sometimes we are not aware of the degree to which there is overlap because we do independent inspection and sometimes benefit by doing joint inspection, which we've done with Ferc in the past. If anyone in the industry is having an issue saying, I just answered EPA on this same question, let us know, reach out, let us know there is a degree of overlap and we will address it.

>> Leak detection, they are communicating with EPA for sure and they were going to be here, they were invited, but they were not able to make it, but they are engaged on the discussion.

>> All right, any other questions? If not, we'll go to break, we are after, let's we want to give good 15 minutes, this was great dialogue, we'll continue after the break and give 15 minutes. Let's come back at roughly 10:05 or 10:06 central. Panelists come back up and we'll let Alex and then a followon discussion.

Thank you.

[15minute break]

>> Ladies and gentlemen, we will begin again in just a few moments, can I ask you to move back to your seats, please.

all right, as we're getting the slides up for the 10 o'clock portion or after 10 now, but 10 o'clock on the schedule for Alex, I did we made audible and talked with Andy of coming up on the panel to join us and have that extended dialogue with the caveat this is lastminute for Andy. He's had good comments issue but he is not the direct emission person, so thank you to Andy for rounding out the panel.

We don't have a operator, it would probably be a good idea.

We are working to get up the slides, I believe, for Alex. Thank you. It is not directly in 514, natural gas is out there, so we want another just to make the public aware of how biogas and natural gas is used, it was touched on in some slides yesterday, so Alex will give more perspective.

Alex.

>> All right.

Thank you, Max, and thank you for having me here today. I'm Alex, I work for the Wisconsin Public Service Commission, which is the agency at state of Wisconsin responsible for regulating utilities.

That is setting rates and reviewing construction projects and we also are the state partner with PHMSA for pipeline safety, as well. My group, we inspect natural gas utility and pipeline operators in the state, too.

And this I think John I was telling this week, whenever I travel out of the midwest, being from Wisconsin, I always get questions about or comments about Wisconsin cheese.

And sure enough it happened this week, so we're very proud of our cheese in Wisconsin, so much we wear it on our heads for Packer games, so and our cheese would be nothing without the dairy cows in the state, too. Where I'm going with that, up until recently, there wasn't much of overlap between the dairies in the state and the pipeline safety world, but something that we've seen recently with the changes that we're going through for renewable energy and it is not just dairies, either, we have landfill gas, as well, another big part of that, too, we've seen a number of projects in Wisconsin and just want to share some of our experiences and how that pertains to pipeline safety.

I've learned many things throughout my time with the state and I'm specifically in the RNG world, there is a difference between biogas and renewable natural gas and I had always used those terms interchangeably. Biogas is more of the raw product that you would get from either digester or from the landfill, it may go through primary treatment, but biogas is really not the same quality that the traditional natural gas is versus renewable natural gas, essentially biogas that is upgraded even further to a essentially gas that meets the same quality standards that your traditional natural gas sources would.

Particular with the methane percentage, biogas looking 45 to 65% and generally methane is greater than 95% and I've even seen projects where they're up in the 98-99% methane.

So next few slides, I have graphics just general on the process for how biogas and RNG is created and put into pipelines. I mentioned couple main sources are from landfills and anaerobic digesters, so digesters, whether that is manure from animals or other food scraps and then of course, the various decomposing items in the landfill, as well.

So the byproduct can essentially go through various processing steps and then basically that is when you result in biogas and then you can take it even further treatment measures for it and that is where you get that RNG. Biogas on its own can be used for various uses such as generating electricity for heating and then if you want to take that one step further, process it out further to RNG, that is where it can be used in transmission or distribution pipelines, as well.

The process is really similar for digesters versus landfills, landfills may have some additional steps, just nature of decomposition of the constituents in the landfill and then

with the digesters, they may have other byproducts that they can use for other various sources, such as animal bedding.

And then I mentioned RNG, expanding the possibilities for where the gas can be used, whether that is injecting into transmission distribution line, using for electricity, using it for CNG in trucks or other various uses.

I like pictures, so here is a few pictures of some digesters in Wisconsin, at least. So the upper left picture is a new facility that's I think it is still under construction, if not in operation already, close to being in operation. They have 16 digesters there, basically the farms nearby in the area will truck their manure to the site and they have a pipeline connecting to an interstate transmission pipeline and they'll will able to inject that gas into their pipeline.

And then the upper right and lower left are just other examples of what the digesters look like, there are different kinds of them.

Notice the difference between the pictures on the left there.

And then the picture on the lower right, that is the compressors at one of the projects, so pressure is much smaller than your typical natural gas transmission pipelines, but in case where these are getting injected into other pipelines they have to be compressed up to some pressure slightly higher than whatever the transmission or distribution line is operating at, they'll always have those as part of the project, as well.

then a few pictures of what the piping at landfills look like.

Lower left you can see the landfill in the background, that is facility with processing inside of the garage there and the pipeline runs out basically where the picture is taken.

And then on the right, you'll see that is the skid where they have the processing for the facility, as well, and the pipeline coming out of it and then basically the pipeline looks like any other natural gas pipeline generally have polyethylene and in most cases that is fall out of same regulation of distribution or transmission line.

And then another one that we've seen lately, they are called virtual pipelines and when we say virtual, it is not like transporting over the internet or something, it is in cases where you may have a handful of farms in one area, over to knowa injection point able to build one injection point and have the nearby farms truck that gas over to that location and inject it at the same point.

So the picture on the left here is actually where they have the truck ports, where the nearby farms are trucking their gas over to this farm and then it is getting injected in there. So each of the farms would have their own digester and their own processing facilities and then generally once or twice a day, they truck that over and unload it and this specific case, they have specific bay for each farm, too, so if there are desk quality issues they are able to pinpoint that right away to the individual farm with the issue.

And then you can kind of see inside what the truck looks like, it is essentially in this case, they have almost like a balloon basically, they fill it up with the gas that expands

and they get to the table to decompress and let the gas out.

I have this slide in here just kind of to illustrate that really these projects are happening all over the country. Almost every single state has some kind of digester or landfill project either already in operation or in the works.

This is a slide from the RNG coalition that tracks that and I should note, not every one of these has a pipeline associated with them, for example, Wisconsin, we have 27 listed on there.

But certainly a handful of them do and a lot of using that avenue for putting gas into pipelines.

So then just a history of at least how we've seen projects evolve over time, while a lot of this is new, within the last several years, there is actually biogas pipeline in particular operating for decades. We have one in Wisconsin that has been there since 1984, I think.

And so there is really not necessarily a new thing in terms of the entire process, so those older pipelines, most from what we've seen are typically you have a landfill and they transport biogas to some nearby enduser, large industrial customer nearby or other opportunity for them rather than flaring off gas to make money off of it and help the customer offset some of their gas needs, too.

And then more recently, into the 2010, you have seen more incentives both on the Federal level with the renewable fuel standard and the California low carbon fuel standard, as well, and those programs have incentivized more the injection of this gas into transmission and distribution pipelines, so kind of what we always call lowhanging fruit were projects and that was into the interstate pipelines, for us, we have some landfills, they have a pipeline running through their property, in those cases, they build a short pipeline and they are connected in.

Then more recently we've seen distribution companies get more interested in this, too, and this is more of those projects that are further away from interstate transmission line or other places they can inject that gas.

So at least in Wisconsin, four largest distribution companies have modified their tariffs to basically start allowing gas into their pipelines.

So then how does this pertain to pipeline safety? So I'm part of Napster, with John and the last few years, a number of states have been bringing up questions as to build biogas or RNG pipeline, how is that jurisdictional or is it jurisdictional to part 192? And so I think John mentioned, Napster, sometimes we set up task groups to look at various issues, I was part of the biogas RNG task group and we worked closely with PHMSA specifically John Gale and others to talk about what would these be considered.

And as a result of those conversations, we came to find out that most of the biogas or RNG.

When you think about it, similar to traditional gathering line, you have a source of gas,

you are taking it from that source and processing it and then you got to get that gas to point where it can be used.

So most of them are gathering pipelines and then there is some exceptions to that and you know, in terms of what does it mean, they would follow the same requirements as your traditional gathering lines, whether that is type A, B, C or R, subject to the same regulations. A lot pipeline, nature in remember fas or rural areas, a lot of them are type R pipelines issue not jurisdictional to part 192.

They would be subject to the 191 reporting requirement under new gathering rule that came out recently, but generally they would not be subject to those. Obviously power pressure pipelines or steel or in more populated areas, they may fall under those regulations.

So in terms of the types of gathering lines I mention, that will be determined on APcan theI RP 80 in 49 cfr, 192, the process for terminating that is same as traditional gathering line.

There are some exceptions to that rule, some may be considered transmission pipelines by definition, if you have got pipeline going from or to large volume customer, I mentioned older pipelines, those by definition would be transmission pipeline and same if you had incidental gathering line as part of new gathering rule that came out greater than 10 miles, those would be considered transmission line, as well.

Then so we've had the opportunity to inspect a number of pipelines and what I would call learning opportunities that we've found along the way, is that sometimes the developers for these projects may not be as familiar with part 192, as your traditional gas operators and I don't think it is lack of care necessarily as it is just they don't know what rules they are subject to.

Some of these we have discovered after the pipeline constructed and may not have been constructed in accordance with regulations it needed to meet or even if we are watching during construction, may be used to more say processes for building piping in a landfill, which may not have intricacy of part 192, as well.

And then as part of our state agency we oversee damage prevention for the state, too.

One of the other issues that we've come across, too, we've seen some operators who are not a member of the State One call, meaning if you have excavator in the area that called 811 to dig, the operator wouldn't have for receiving that notification and going out and locating it, too, so we've seen pipeline operating at 1000 plus psi, and road that wasn't a member of One Call, those are things we try to stay in front of and to help educate folks as they come in and certainly not to say that this is for all of the projects we've seen, there is plenty of examples of great success stories, too.

And then issue just one other one that I kind of got a chuckle out of and disclaimer with this, this is segment of pipe that is not jurisdictional to part 192.

But if you look closely here, that is actually calk inside between the electric fusion coupling here.

So again, just another example of maybe some opportunities for improvement there and some of the conversations that we have with the operators.

and then just a couple other slides issue not necessarily pipeline safety related, we talked this week about citing and how that doesn't fall with PHMSA.

Most biogas and RNG pipeline, if not all of them I've seen are intrastate pipelines meaning fall under state jurisdiction for both citing and pipeline safety.

So citing requirements are going to vary by the state that is built then.

So at least in Wisconsin our agency only would have citing authority over public utility in the state, so wouldn't have say over whether the pipeline gets built or really even anything up front with it.

So the utilities on the other hand, require tariff change to be able to take that gas into their systems. I mentioned handful of them in the state have done that already and we have others that have it in the works, too, actually one smaller operator is working on project that would be able to supply half of their gas supply in the summer would be from RNG, another interesting project and as I mentioned, some projects are subject to requirements in 192, even before they go in operation, they would be subject to those requirements during construction, as well, too.

And then another question we get asked a lot or talk to operators a lot is about gas quality and your specific requirements are going to vary by state requirements and by different operator requirement, as well.

Just the same as any traditional natural gas, certain constituents coming from RNG that need continuous modeling and talk about oxygen, hydrogen sulfide, water vapor issue those types of things have continuous monitoring and if it falls out of spec, intent gas would get shut off from going into the pipeline at that point.

Couple other constituents maybe unique to RNG and biogas that could require additional monitoring, cyloxine, customer appliances downstream is important to consider and then BTU value from the gas can vary, but you're certainly going to be in the 950 to 990 range and that depends on how good of a processing, I guess, step that you have, the more higher percentage of methane closer to it 1000. Consider redundancy as moons of making sure gas quality speculation at the hub.

That is pretty much all that I had.

I know this presentation will be made available, just another some other resources that we found helpful, a lot of studies have been done in regard to introducing RNG and pipeline and project done for northeast gas association in New York for injecting distribution system and a lot of information out there already and has been out there for a while.

So thank you very much for your time and appreciate it. So [Applause]

>> Before we get to the rest of the panel, I want to see any questions for Alex

specifically? One on the webcast?

>> Yes, question from Bill Defore, is there a report or other documentation available on the determinations made by the Napster RNG task group?

>> Sorry, can you repeat that?

>> Sure. Is there report or other documentation available by Napster biogas RNG task group?

>> Yes, as result of our task group work, we put together a document that explains it how we thought it to be, we can make that available, we have told others in Napster, they can share with operators or anyone interested, so we can certainly make that available, I think.

>> Elane, another one? Or Linda?

>> What is the driver, CO2 projects, there are distinct financial drivers to invest money, I'm curious other than just people motivated by wanting to take advantage of an opportunity, are there financial drivers that promote getting a double nod here. Can you speak to those?

>> Definitely, I briefly mentioned Federal renewable, I can't remember the exact term, Federal credit program and additionally credits in California that essentially the operators can get 10 times or more for this gas than traditional sources of natural gas, it is substantial, to the point operators have distribution piping nearby, they use traditional gas from local distribution company to fuel processes, gas they are producing is too valuable to recycle through the process.

There is a lot of credit out there for it and it is specifically for injection into pipeline versus generating electricity.

>> Part of the process, the idea is this is one of the better ways to reduce greenhouse a lot of states seeing that as first step, better than we can do on the pipeline side greenhouse gas reduction, this is great way of doing it.

>> Question for norcast?

>> Curtis row, rp80 does not address production facility, gathering defined under 193 as pipeline that transports gas from transmission line or main, does PHMSA plan to issue guidance or rulemaking that addresses pipeline jurisdiction?

>> I'll take that, Allen? Or

>> Right now it is not specifically addressed in our rulemaking agenda, but that is continuous process as we learn and evolve with biogas and renewable, that is an area we are learning a lot and market evolving.

To the extent that happens, we'll be addressed and that will be addressed in rulemaking.

>> There are Alex talked about the presentation, there is some situation, is jurisdiction or not and find out technically using pipes that is not a listed specification in our code

and sometimes has to go through state waiver or would be special permit on Federal side and state waiver on stateside if PHMSA review, Alex want to talk about the type of pipe used and things like that, do you want to expand?

>> That is one common issue, using water pipe or another listed pipe that is not allowed per regulations and I know we have at least one in Wisconsin that happened and we went through the state waiver processes as Max mentioned, similar to special permit, but two steps where the state has to approve the waiver first and with any conditions added on and go to PHMSA for approval, too, if we approved it and PHMSA said no, you can't do that, it wouldn't be approved, it is a twostep process for state waiver.

>> Waiver, it sounds like we're waving requirements, typically, there is some type of condition bend it and Alex talked on monitoring.

Andy, do you have something?

>> There we go.

I think it is a vacuum here with a lot of energy, pardon the pun, going into RNG right now and a lot of ambiguity about what to do with it in that interest, the Inga group tried to define RNG and how to manage it and provide best practice clarity, there is uncertainty, how do deal with this animal, so to speak, trying to define best practices on how to identify threats and build the pipeline and what jurisdictional authority you have and how does this fit into the gas stream quality and that is inside this report, was just literally completed a couple weeks ago and I think to where Allen is, you start with level playing field on what best practice looks like and work toward regulatory guidance and clarity, building blocks moving into place.

>> Typically precursor regulation is special permit or waiver from regulation and true to its name, it is where the code does not reflect the state of technology, alternate approaches, so it is very process we're used to, it takes time to go through the process, but it is the way that we really prove and help on a smaller scale prove technology and approach that informs rulemaking, but it is an issue, probably for the next panel, challenge of making sure the code stays up technically relevant, there is process, just taking time.

>> Question here? Yeah.

>> A couple of questions, one, you showed a slide with issues in pipelines, right? My question generally high level was it a case that there was retrofit of pipeline used for conventional natural gas now flowing RNG, and gaps in there or were there also cases where you maybe had a greenfield capital project and something missed in the design or mixed bag there?

>> Yeah, I would say all the ones we've seen would be greenfield project, they are building it specifically for the RNG, and I mention steps missed along the way.

Not that I can think of any that have been converted.

That is in general at least.

>> Okay, good, general comments for what it is worth to everybody in the room. You talked interestingly about reduced heating value, not by a whole lot of RNG relative to natural gas, to me, a bit of light bulb, if you talk and quantify some point in time, how much greenhouse gas able to reduce, ought to do it on effective duty value as opposed to per pound basis, may not have apples to apples comparison with history issue just a thought for what it is worth.

>> Good comment.

>> Alex, great presentation Sarah with doe, do you have a sense of RNG, scale to be built by say end of decade or midcentury in terms of RNG, emission reduction issue utilizing methane from landfills, etcetera and what that looks like in terms of the scope of replacing existing natural gas? You mentioned one utility is 50% for one, if you could comment on those topics?

>> Yeah, in terms of the scope of it or the actual emissions it might offset, I don't have specific numbers for that, I know this is I mentioned, some projects we have that are in operation are the lowhanging fruit where they are located next to interstate pipeline or another place they can easily inject it. Now transitioning into getting more creative with the projects, like with virtual pipelines or other means to get it from point a to B in economical fashion, so I think as that evolves, there will be more opportunities certainly for maybe say smaller farms where it is not economical to put in digester and might become easier for them to do that.

And then in terms of completely offsetting, I don't think that the capacity is there for them to do that. The 50% of the gas from RNG, they would be able to take is for summer when their gas supply needs are lowest.

When you are talking about the peak day winter supply, only fraction of what they need for that.

If they had additional farms, they wouldn't be able to, it would Windows up flaring most of the year for some of them, too. Some consideration in there for trying to get to use more at least.

>> One more question online from Ricardo from Kendra Morgan, what is the document

>> Imsi, contingency improvement effort started last year, second generation improvement effort, one that was eight different tenants of that effort, one was to develop a best practice document around RNG and that report was released and Kendra Morgan is a member of Nga and can reach out and we will get a copy of that, it is in draft final report status, I think by early Q1, it will be final and released publicly.

>> I think with that, we'll transition into the panel, I want to give Bill an opportunity to talk about methane emission reduction, I think we heard from Andy, if he wants to say

anything.

Ideas brought up earlier, Andy brought up esd, if Allen has comments where we go from here, maybe start with Bill.

>> Yeah, thanks.

Going back to comments that I've made over the last few days and heard others make, I don't think there is the potential to sacrifice safety for the sake of the environment.

And again, we're back to talking about 114 now.

You know, to me pipeline safety is keeping the product in the pipeline whether you are talking about liquids or talking about gas any time that product gets out of the pipeline, that is pipeline safety issue and we had that culture change on liquid side and now started it on the gas side.

I've been encouraged by a lot of the discussion, encouraged by the technical advances Cliff talked about on blowdown mitigation.

I was brought up at Pipeline Safety Trust, companies like Williams incorporating methane reduction into bonus program and sounds like Embridge is doing the same thing, this is culture change that is exciting to see. One thing that we want to see through this process of 114 as it is getting implemented is transparency, Senate bill regulationalates blowdown mitigation and reports are all public, operators are talking about what is working and isn't and we would love to see something similar on this Federal effort.

Right now the o&M plans are not public, inspection plans are not public, so seeing something about the lessons learned which was great to get a presentation on today, would be great to get a report seeing what the operators are doing and what is working. I also think there is a great opportunity back in 2015 or so multi stakeholder group got together and looked at metrics and that is when this metric on the liquid side of incidents impacting people came out and there are whole host of metrics we could get together and look at again, I think emission is a big one and work oncoming up with new metric like we did on the liquid side.

Yeah, I think that's good introduction, looking forward to the discussion.

>> Andy?

>> Sure, thanks, Max, I appreciate your point, Bill, it is an and process, it is not either/or, it is and, and, and, safety and environmental consciousness and greenhouse gas reduction, kind of all of the above in my mind.

It is we got to look at every little thing adds up, it is not one big thing we are going to fix and make this go away, looking at every corner and the way we work and every technical option is how we get there.

As you eluded to, at Embridge, 50% by 2025 and metric on how we're doing against greenhouse gas goals, how we're performing against them. I think that helps raise

awareness, everybody has a role in achieving this and we look at it, facts and data, biggest contributor in RNG space is compressors and slip stream emissions and NOC's, CO₂, when you look at second biggest component, it is blowdown and that is straight methane, that is big opportunity and I see EPA heavily in the compressor space, emission space, okay, that is good to know, but these things about blowdown and emission issues are really fair game in PHMSA world and I think those are a lot of opportunities reside in those spaces and we can talk more about technology and things we're doing, but I think in that space is tremendous opportunity to change the way we think and work.

>> Thank you. Allen, do you want to kickoff comments?

>> Kick it off in the spirit of safety management system, on journey related to methane emissions and we have a new authority at PHMSA we talked about and Linda talked about it earlier related to mandate to consider the social cost of carbon and policies we put out and furthermore, in the most recent pipes act to issue new policy making on developing requirement for finding and repairing leaks and managing the program we need to be keenly focused on achieving the new policies and getting this out, there is a lot coming at us, it is a challenge, keep moving in the right direction to get these things out the door.

We are doing well in that area. We need to stay focused on that.

Just reminder, talking about section 113 of the Pipes Act, those that deal with us say 113, that is the rulemaking on leak detection repair, you can expect that to come out next year and while we're talking about that, we're talking about the shift in paradigm much like I've heard talked in the past related to paradigm shift to wearing seat belts in a car, shifting paradigm, acceptable level of release of methane or natural gas is a thing of the past and the concept of grade three leak which in distribution jargon is leak typically monitored.

Aspect of monitoring that is something we need to leave bend, not probably, we would do, expectation going forward and I've seen a lot of good work in this area, it would be that we repair leaks and to that end, we have an opportunity with metrics we do good job of measuring consequence to people, in some aspect especially on liquid side, we have opportunity related to showing performance on methane emission and I think great opportunity there. To what Bill was talking about on national performance measures that developed a number of years ago, we have some on the natural gas side, I think it is good time to get a group back together to look at both liquid and gas measure and introduce some new ones that focus on measuring how we do related to releasing natural gas to the environment, just a couple things, we're on the panel for an hour and there are other things to talk about, those are couple things to kick it off.

>> Any comments or questions so far from the webcast?

>> Yes, we have a couple questions.

One question from Gary, due to relatively high cost to upgrade biogas, there will be a push for waivers on traditional gas quality tariff provisions, that could lead to internal corrosion and integrity risk, is there consideration for national standard for RNG?

>> Alex want to take that? Sounds like might be a FERC thing, I defer probably initially to colleagues at FERC.

>>Yia, that is kind of what I was going to say, too, and if there is different requirements in each state, those may apply, too, but when the distribute what I've seen and I think Alex had a lot of what we're seeing of piping is plastic in nature, some say plastic can't corrode, if you have metal issue yes, they can corrode, we will look at the safety issues and even though we might not have detailed definition of the code, everything is hazardous material of some kind.

>> Thinking of an example, one of our distribution companies were establishing their tariff requirement for the gas quality, they looked at all the interstate gas companies in the state and took the most stringent of each constituent requirements with couple outliers they didn't fully implement and was more stringent than the interstate companies had, too.

>> Good question, great question, Mark?

>> Mark with BlackSmith Group, can I address that specific question on interchangeability, which is what that gets to, gas quality, resource to consider is the natural gas council plus guidelines issue white paper on interchangeability developed in mid2000s, when we expected a large supply of LNG to come from outside the U.S. and as part of that group, that group had end users from all sorts of applications, we had barbecue manufactures, stove manufacturers, gas turbine manufacturers and in that process, the guideline develop operating envelope that looks at heating value and wobi, and other nerts, great tool in considering is impact of lower BTU, or heating value and impact on operating outlook.

>> Thank you.

>> Okay.
Go ahead, Linda.

>> Linda.

>> Okay, so got a question, I'm looking at drivers because drivers dictate our behavior, right? So when I think about oh, we want to eliminate blowdown and reduce them and capture gas, there is huge driver to reduce that and we can all agree that is a good thing. Then I think about what is the other drivers, that would cause you to blowdown? Might be for defect repairs and cut outs and I think Harold mentioned earlier, don't incentivize people tow put a bandaid on the cut, when they need to cut it out. I see Allen smirking,

one of my biggest fixations when operators put bandaid over bandaid over bandaid when they just need to replace the pipe. Compare safety and blowdown and different drivers, how do we incentivize help operators make good decisions about replacement instead of going repair route when they have strong drivers to how you blow down the pipe for miles. We don't want to invest money, anyway issue just tossing that bomb out to see what you think?

>> Maybe since you saw operators issue operators hate to hear how can PHMSA help, I'm with the government, I'm here to help. One thing that come up and Andy may want to touch on it, do we need to shift the criteria to engineer or qualitative risk analysis, do you want to touch on that?

>> It is a great question, I think it is ever the challenge that we're faced with, you know, how do you ensure safety and try to be creative and find other parts of the and proposition without compromising safety. I think a lot of technologies that we're looking at, you know, like composite repair material and things like that issue not really a bandaid, intended to address a localized problem. What I hear you asking is different, when pipe approaches end of life, if pipe is approaching end of life, what do you do with it then? I think that is different question than what I heard bandaid, localized repair is how I heard bandaid, technically very specific evaluation, we can do resurfacing and one of the better things that came out lately, an example of localized repair, would be geohazard, we talked about that a lot yesterday and how to manage geohazard is clarifying vertically right now, industry standards and best practice being defined and people running tools and finding things they have never found before, they are starting to look with new tools for them. Finding as pipes move tsc of the girth weld become relevant, old girth welds can be very significant issue in how far the pipe can be displaced. Minute you stick that pig in there, whoa can the girth weld handle that? What we're finding is composite reinforcement material around the weld is exactly the right answer for that and you're fixing the welds in the strained condition, it is not a pipe that is at end of life, it is a technical challenge, you plug eca and apply technology and remediate the risk, that is a good solution.

Where I see end of life coming into play, coding system is significantly compromised over time, straight currents and things happening to the pipe, fatigue issues on perhaps more liquid pipeline issue that the gas pipeline and other issues starting to approach end of life, repair is now insidious, just you can't not localized, becoming systemic, when you switch over to things like quantitative risk assessment, earlier warning of endemic problems and I think that is a direction that the industry is starting to look to go, we've talked about that many times. I think that clarity that you get from quantitative risk assessment helps you see the scale of the problem you are dealing with and the bandaid approach is not sustainable and becomes very clear.

And I think there are technologies that we're starting to look at in the interest, things like smart pipe is composite material we can actually pull inside the pipe pressure rated

by DOE for hydrogen and CO2 service and alleviates constraint of the pipe and digging it up, especially in urban environments and incentivizes operators, lowers the hurdle rate of keeping services reliable and getting pipe that is end of life out of service, so to speak.

Basically all you are using existing pipe for is conduit to pull a new pipeline in, yeah. I think those kind of technologies are going to emerge, it is different thinking that will emerge with end of life, you know.

Great question.

>> Great comment and the whole bandaid comment, I agree, well, I agree composite repair as long as proven to be restore serviceability of the pipe in our code, we have seen cases where operators put something on intended to be temporary and left it in and turned permanent and we have seen composites leave a bunch in a series and we have interpretations out there, what point is there limits in a row so operators have asked can you use composite repair on long span in the case of reduction and interpretation said that is not repair situation, there are cases where composites are in place or we have seen misapplication and haven't done a big splash, we recently put out frequently asked questions on temporary versus permanent repair.

Not a big splash, but it is out there, there are questions in code of what point is something temporary versus permanent, if you are not aware of our FAQ page, it is out there and just issued in last month or two and Linda drove the questions and issues and we have a group together with legal and others and put that out there, so, yeah.

>> And I'll add from the public perspective, we're really skeptical of lightening up on repair criteria in the intent of lowering blowdown and would be more inclined to keep repair criteria in place and just looking at those blowdown mitigation options, but I think and I think in the meantime as we make that transition, transparency from the operator goes a long way, it is frustrating from the public perspective for a satellite to spot this huge methane plume and then we hear it from Block bloomberg and the operator will say, it is routine maintenance and it is not reportable, it is not monitored by PHMSA and all we hear is it is just routine maintenance and if there was more engagement around the reason for blowdowns, I think the public would be more understanding if it is part of repair criteria, pipe at end of life and things like that.

>> I can't miss the opportunity to plug in practicable issue here at play, every time we pull the pipe down, it takes time.

And FERC certifies us to provide service with zero spare capacity.

So if we're able to work in the shoulder months, then we have the opportunity to pull it down without affecting service, but if the shoulder months start to go away as we start

getting more and more electricity load, that window of opportunity to work without affecting an end user is diminishing, and I think there's other players at the table that need to change their thinking, too.

So we're going to take four times longer to pull a pipe down than it takes to blow it down, that makes all that work stretch out, so it used to fit in a month, now it takes three months.

And we don't have three months because now we start interfering with capacities to deliver energy for power generation and heating, and the mindset of the regulator was always, we just size the pipes to meet the demand, there is no spare -- no spare capacity.

And I think that's a question we all have to embrace.

If we're going to go down that trail, it's great, but it's a solution that's an -- solve all these problems before we can really make that work or in order to make it work.

>> Also, to be sure, you know, the code that we put out does not have a requirement to replace pipe at a certain timeframe, like if it's 50 years old, replace it or 100 years old.

Like Linda said earlier, there's still Civil War era pipe in service, it's in distribution, low pressure application but the idea behind the code is, as the facility ages the requirements and what you need to do it to maintain it to keep the product in the pipe increases over time because it becomes more maintenance, more maintenance prone, but I think we have an opportunity in this area to look at our practices that minimize release of -- related to these types of -- you know, the maintenance activities that we do.

And that's another aspect of section 114 that was talked about earlier, you know, we talked about the inspections, but the other aspect of section 114 is for PHMSA to perform a study that will possibly inform, the way I view it, it will inform future rulemaking but it's a study on our findings related to our inspections, what we've seen related to practices that people are implementing to minimize methane releases.

And so while section 113 deals with leak detection and repair, there's probably a follow-up down the road, as we've learned more from our section 114, you know, inspections, to do further, you know, refinement of requirements, policy making down the road for that.

>> I think Mask brought it up, will there be an opportunity for public comment.

I don't think that was part of the plan but maybe we can revisit that if there's an opportunity.

I will say this is one report we are late on, so sometimes Congress hits us over the head, rightfully so, that if we're late on a report, where is it, but I don't know if you want to touch on that.

>> Typically there's a peer-reviewed -- they're peer-reviewed in some aspect.

I don't think we had anticipated posting that one.

We have a number of studies and reports from the 2020 Pipes Act, and typically our approach has been to write the report, develop the report with various resources we have, get it checked by an authority, and then send it on, you know, run it through the approval process and send it on to Congress.

But it's something we can look at if it's a controversial topic.

We've done that in the past, but something I didn't anticipate right now for the current section 114 report.

>> I think it's fair to say, without saying what's in the report, it is a moving target because we have the 114 inspections going on and we've got new technologies, we heard from Cliff today that are still being evaluated, so at what point is the right point to put it out there, other than we are being asked by Congress, hey, where is that.

Any questions from the webcast?

>> Yes.

Another question from Gary.

As pointed out, most RNG facilities require compression to enter a transmission or distribution system.

Who has regulatory jurisdiction over the related overpressure protection for those compressors?

>> Did I hear RNG?

Alex?

>> Not a good answer, but it depends.

Again, it's going to depend on what kind of gathering facility it is and what kind of -- or if it's a transmission pipeline, what kind of transmission facility it is.

So in some cases, it may not fall under 192, but in some cases it might.

So it really depends on the individual circumstance.

>> Yeah, and I think it depends what kind of certifications we have in place for, like, a state, Alex brought up intrastate cases, in most cases many of the states will handle intrastate gas, but there are other cases where some states may not, or there may actually be some parts of code that when a state takes on the process of adopting minimum safety regulations, sometimes there's components where they may not, like different pieces.

So if there's a gap there, that's where PHMSA would generally come in, but it -- it depends based on jurisdiction and what the certifications are and things like that.

And that's both on gas and the big question, again, different topic, but CO₂ and others is, that question comes up of where does PHMSA handle it versus a state.

If it's interstate typically it will be PHMSA, so it's more the intrastate line whether or not the state handles it or PHMSA might do it.

>> Okay.

Next question is from Jack Wilson.

What quality limits for toxic substances such as siloxanes, heavy metal and other hazardous substances have been established for use biogas in commercial and residential application?

>> Can you repeat that again.

>> Yes.

What quality limits for toxic substances such as siloxanes, heavy metals and other hazardous substances have been established for using biogas in commercial and residential applications?

>> Yeah, so I think there is some studies that have been done on at least -- I'm thinking of siloxanes.

I think California has done studies on those.

When you're talking a lot of these constituents, many of the -- at least some of the be tariffs I've seen, the operators will require that the gas is essentially free of those constituents, meaning that there's none of them in there.

But again it kind of comes down to the individual operator and what they set as those limits.

So in terms of like a standard, I'm not sure if there's necessarily anything out there for that but there are studies that have looked into those various items.

>> I know there's a few other out there, like Alex talked about some of the components sometimes could be H₂S which is really, really nasty stuff, so there are recommended practices, I can't point to the exact numbers but if it's sour gas, if there's H₂S in that content, there is some information out there, regardless of what the main product is, but if it contains anything with H₂S or something else, there is are some RPs out there.

>> Next question.

Pipeline safety and emissions reductions both focus on keeping the gas contained.

Don't the annual reports and incident reports already identify what is working and what could be enhanced/improved?

Just curious what may be missing since those appear pretty all-encompassing.

>> Alan, do you want to take that?

>> It's a good question.

Certainly the annual reports for distribution cover, you know, leaks on hand and have metrics related to that, but, you know, like I was mentioning earlier, we get rulemaking for 113 which we're in the throes of now, the outcome of that at some point will be information collection.

So I think that's where we'll have the opportunity to enhance our metrics, change the metrics for the new policy that comes out.

>> Can you hear me?

>> Do you want to come back?

>> It looks like I'm on.

But I think we have an opportunity to change the -- and update the information collection on the other -- in had to other tools we use from gas transmission and gathering, you know, to other underground storage as well.

>> And the public -- there's a number of measures and annual reports, but things like we collect lost and unaccounted for gas is one can example, and we collect if there's an incident, a release, how much volume was released.

It's in bits and pieces everywhere but like Alan said, it's not in a condensed -- there's places we can -- that's one of the questions I had, where do we go from here.

Are there already existing data we can collect that we can infer, is it -- a lot of folks are -- aren't always thrilled if we want to go down a path of additional data collection because we're already asking for a lot of data from operators, so I don't know if it's additional data collection, if it's using information we already have out there, and maybe it's not just PHMSA data, there's a lot of voluntary databases that are out there we can lean into.

Linda, do you have something?

>> I just wanted to make sure, a bit of a caution.

You mentioned lost and unaccounted gas.

We do collect that on the reports but it is -- I'd caution everyone that that doesn't necessarily mean gas that's gone into the atmosphere.

What we found over time is, the term is very misleading.

A significant portion of that is metering issues and internal metering, the gas stays in the pipeline system but there's metering problems.

So it would continue to gather because many of our state partners find it useful, but we know that, from past incidents, some of our federal -- fellow federal agencies saw it and said, hey, we can find out where all this gas is coming from so they went and harvested it and that's -- that's not what the information is.

You gotta be really careful about the data.

>> Yes, how many hazardous leaks have been repaired, how many leaks repaired in general, but does that give you how much was actually emitted?

Not always.

But it's a very valid point, yeah.

>> And I'll just add, any time there's been studies, leak surveys, you know, third-party, satellite work to try to estimate emissions, it always comes out significantly higher than the EPA estimates and what comes out on the annual report.

So we're missing something somewhere and we need to figure out where that is to get a good baseline and see what kind of progress we're making.

>> Thank you.

Another question?

Go ahead.

Go ahead, Cliff.

>> I was going to ask a random question.

I've been listening the last couple of days to Linda and Alan and Max, thank you for pulling this together, what if we change the paradigm?

What if we take a year, rethink what we do, and evaluate it holistically?

We keep coming at it with a popcorn approach, talk about leak detection, greenhouse gas emissions, talk about hard spots.

What if we take a step back and say how do we take what we have today to the next 30, 40, 50 years?

As we move into these new energy products, hydrogen, looking at the challenges of CO₂ and ammonia, what if we kind of take a step back?

There's an effort going on in integrity management 2.0, API has similar activities but we're all spread out.

PRCI is doing research.

We talked about before, I asked the question of what's the next steps, is it a bunch of similar sessions like this or a little bit more focused?

And maybe what we do is spend time at the already established meetings we have, get GPAC to do a traveling roadshow the next year, three meetings per year, and think about this differently, and not trying to keep building on the current, but create a whole new platform to look at it differently.

Andy made a comment about regulations started in the '50s and they snowballed and built over time.

Maybe we need a different conversation.

But it's going to take us stopping, because of one our biggest challenges and opportunities is we gotta go quick.

How do we do it right?

How do we do it fast?

We need to do it right.

We need to do it with safety in mind and with environmental protection in mind.

We've got to do it right.

We can go really quick.

We've shown that over time.

Infinity.

Let's do it right.

But it may take a whole different thought process, on how we engage everybody, not having it done over here with the industry, not over here with the public, not over here with the government but as the triangle shows on the screen, which I appreciate that drank, the only thing I would argue with it's not just PHMSA, it's DOE, EPA, the rest of the community, public and industry coming together to really enhance and promise safety, environmental consciousness.

We've got to think about it differently.

Otherwise we're going to be here next year asking the same kind of questions.

And it's -- we can do better, and we can think differently.

Now this is a different environment.

We've been for the last 70 years as an industry able to make our own timelines.

We don't have that.

Our public wants something different, sooner than later.

And we need to meet those opportunities.

And we should.

So how do we do this in a different way?

If we're going to do it one regulation at a time, it's doable, but do we achieve the home run hit, paradigm shift that we really need?

Just thinking differently and looking at this entirely in a unique way, do we recalibrate for this next calendar year, and intentionally meet more -- on key topics with a whole picture in mind and really drive a conversation differently or do we have to continue doing one-off at a time?

I don't know.

Just something -- food for thought.

>> I think to your point, this meeting, the last couple of days, has been quite insightful for all of us, and I think it's valuable for us, you know, the policy setting side, to hear your views, especially from this diverse group of stakeholders, so I think it's safe to say we do need to continue the dialogue.

I must say, pipeline safety today has evolved so much since the early days, since we were created out of the 1968 Pipeline Safety Act, and then as you've seen the major events that have occurred over time, we keep reinventing pipeline safety, making major changes, you know, major changes made back in the '90s, 2000s, entering in a layer of integrity management.

You know, here today we're at a major fork in the road related to how we're dealing with methane emissions.

Another opportunity.

How we deal with -- I think our discussions related to methane emissions and repairs and the age of pipelines and when you replace or -- I think those are things we need to rethink, and we need some good ideas.

But it will be an evolutionary process.

I think it will be -- how we go forward.

But I welcome further dialogue and I think we've learned from this week that, you know, it's something we want to do more, and we're planning more to that end.

>> Okay.

Question from Christine a.

Will PHMSA limit CO₂ composition from other components such as H₂S?

>> Limit?

Limit the composition?

>> Yes.

>> I don't know if Alan wants to talk about that, but other than our current regulations that say 90% super critical, would we -- sorry, repeat the question.

>> Sure.

Will PHMSA limit CO₂ composition for other components such as H₂S?

>> And I'll start and Alan can jump in.

Part of our regulations, I think Vinny brought it up, but, one, you want to make sure, at least our current regulations, it's got to be 90% super critical.

There are aspects of our regulations that it's got to be somewhat -- or the material suitable for the material transported, so there is some aspect of that that reviews to what extent, you know, any kind of other constituents are in there.

CO₂, a concern is water content and others, so whether or not that applies.

But I don't know to what extent, unless Alan wants to say, it will drive into the point of a constituent part because that gets into other -- FERC doesn't do liquid CO₂ tariffs but some of those aspects at a state or local levels are better addressed.

>> I don't have the specific code reference in front of me, but there are requirements for, you know, knowing the product you're transporting and the hazardous components therein and to address the threats that are presented.

So in the case of H₂S, there's certain things an operator must do to address the threat that it provides to pipeline safety.

So -- and then as we move forward with policy making on CO₂, for instance, and to the extent we need to refine them to address specific hazards, we'll do that, we'll have to do that going forward.

>> Linda?

>> That was actually where I was going, Alan.

So there are others that set limits on the quality of gas, how it can be used.

FERC does that.

But we also have a role in that if H₂S is in pipe, is any component, the operator must take action, must be aware of that for emergency response issues, right?

If you've got H₂S in a CO₂ pipeline or natural gas pipeline or crude oil pipeline and you're running through a community, the local emergency responders need to know that.

Right?

So you have to be thinking through.

So while we don't set limits, there are some triggers.

>> That's a very good point, thank you.

Any others?

Webcast?

A couple from the room.

Might have time for a few more questions, and we have an 11:30 session.

Go ahead.

>> This is quite a bit off tangent, and that's an understatement.

As we progress in our long-term vision of greenhouse gas abatement to where it's net sore, there was a comment or question also about subsidies that we all are seeking, but how about the end game, the affordability of what we eventually put out along this journey, and the end game to our customers, our consumers, and we all know if you look at, let's say, the price of green energy and some of you may be aware earlier this year Shell actually launched Shell retail energy and I compare that with my previous provide provider, there's quite a price difference.

We're privileged to be able to afford those difference in prices.

Look at the comparison with similar fossil fuel driven or even a hybrid.

There's quite a bit of a price difference.

My question in general is, who's watching out -- the prize game here and working towards affordability of whatever we produce to a wider audience, really, the entire customer base?

>> Who's looking at it, I think we saw slides from DOE, like the cost of hydrogen, things like that, and this is a little bit out of our purview but our leadership does like us to know what others are talking about, so it's a good public acceptance question.

Bill brought up safety concerns but at what point can you get the cost down, the public's willing to accept it, or I know it's good for the environment but if the cost is too high to give this fuel verse another one I can do, I've got to put food on my table, it's a good public perception question.

Others are looking at it from different angles and that has come up.

It's not us for cost, other than if it comes up in a rulemaking, we have to do cost/benefit, but we won't get costs into the fuel itself typically.

Alan, do you want to add anything to that?

>> No, just when I hear the question, it brings other thoughts on.

You know, from our perspective, one of the challenges we have, since we're on a panel of challenges, is understanding the market, and how it's going to evolve.

So we can respond adequately to ensure safety and carry out our role.

So we have various ways of doing that, various federal agencies we partner with to get information, but, you know, just -- it evoked thoughts of that, you know, it's another challenge we face, you know, understanding the market.

We dealt with it years ago with ethanol when it really seemed to be an evolving market that was going to be really big.

It didn't quite pan out that way.

Although I will say, you know, in the way -- as we look to CO₂ and hydrogen and renewables, that does appear here to stay.

I'm saying that based on the momentum that I see around us and just the interest, the grants -- the tax incentives that promote projects.

So I think that helps guide us as we respond to the need for having relevant regulations to deal with the -- you know, what's before us.

>> And it's a good question on equity, too, a little bit.

There's probably some parts of our nation that still aren't getting fuel they might need.

And I think Linda was -- IPC came up globally, Nigeria is saying, hey, we've got a large portion of our public that aren't even getting regular fuel to their homes, let alone we're not even a place to talk about these clean energies.

We know it's out there but we're just not there yet.

We met with some -- state of Georgia and a few other constituents, we're not even thinking of CO₂ just yet because we have other priorities right now.

Linda, she's like --

[inaudible audience comment]

>> You know, thank you for -- I was thinking about that as well.

Andy was actually on the panel with the minister of --

>> Yes.

>> Minister of fuels?

Alan, you were on the same panel.

But the fascinating part that this gentleman said, just as Max said, we have people that don't have fuel, and yet you all are saying you're bad people for producing fuel, my country needs this, my country needs this.

And then it evolved into a conversation later about what about tax credits.

So if you are familiar with the 45 Q -- 45 Q tax credits, those are transferable.

Then the question is, what about emissions credits, what about national emission credits?

What about North American tax credits for emissions?

What about worldwide, so the countries like Nigeria can do what they need to survive and more advanced countries can help pull down the climate impact load.

I just put a lot of information there.

Andy, Alan, you were there.

>> That was a great conversation, I think, when we talk about paradigm shifts, if we shift our thoughts from North America to the world, the decisions we make change radically.

Moving LNG to Asia or India gets them off firewood, which is precisely one of the worst greenhouse gas producers.

So if you look at the worldview, it's a very different solution that you start thinking about, you know.

If we move this here, that takes them off and they make a huge change in the greenhouse gas picture of the world, you know, it isn't -- our air doesn't just stay here and their air doesn't just stay there.

We all share the air.

I think solving a world problem is really, really relevant, and how energy fits in, and the delta that moving Andrea can shift that footprint is very much, I think, a thought we all should think in the paradigm shift.

And incentivizing it, absolutely.

>> That was a very eye-opening panel, true to the name of the conference, International Pipeline Conference.

We were all addressing issues related to our respective -- you know, what we deal with, and, you know, to hear the perspective from Africa, from a major African country, and not even having access to some of the basic things that we take for granted, that was really eye-opening.

>> Maybe Sarah, this might be it, unless we have just one more question.

>> I was going to add to the great question about that, I was going to offer perspectives from DOE.

We have cost targets, for example, like the \$2 per kilogram of hydrogen and how we do that is really through demonstration, bringing down the cost curve by demonstration, you know, similarly for carbon, we've got a carbon negative shot, so I think that goes one way we see enabling the affordability side of new fuels, emerging fuels.

Some of the other things we do at DOE is around decarbonization modeling, how to include and look at where you need plants, looking at IRPs with utilities, so there is a lot of work that I'm not as involved in but I know that is really front and center at looking at how we decarbonize but provide reliable, affordable energy across the U.S.

So with all of the transmission lines, et cetera, needed as well.

So that's another way that we're looking at it, and that's mostly led through our EIA arm of the Department of Energy.

So I just wanted to offer up those two insights, and I'm sure I can connect you with others if you have specific questions.

I think the last third thing that I wanted to say is, when we talk about carbon as well, you're seeing global efforts.

Actually, in the news yesterday or two days ago, the EU, the European Union, came out with their fit for 55 and how they're putting in carbon border tax, so these are some of the implications to think about for -- there's discussions on carbon border adjustments in the United States and how that's being incorporated with products that are being

manufactured, you know, in the United States and getting sent over to the European Union.

So that's another mix into the global trade of carbon-based materials, and that's, I think, going to be another driver towards decarbonization of not just the electricity sector but also the industrial sector.

>> One more spot-check before we transition.

I think we're at a timing point.

We're good?

Okay.

Thank you so much, like Alan said, I think this is just the start of a dialogue so thank you to the panelists and we're going to transition them off the stage and Steve Nanney is going to come up.

Thank you.

[applause]

>> Good morning.

My presentation will not take long, so I don't want to get into the way of lunch, but just to add a detail on what I was hearing earlier on gas emissions, if you look at recent special permits we've issued, or any that someone requests, we've been requiring leak detection, monitoring, repairs.

You can go if it's a special permit like for a class location, you'll see it's a condition 13 KL & M will have requirements on leak detection, on mitigation, timing, classification of leaks, so if you want to get an idea of what Max and Alan and some of the others have been talking about, that is a good area to go for leaks.

Also, if you're having to blow the pipeline down for a repair where you're actually cutting pipe out, it has requirements there for you to follow.

So that's a good area to go look to just give you some ideas of what PHMSA's thoughts are, but if you have a permit, you've got to implement.

Another item or two to just add to it is, we have requirements, new rulemaking for valve closure, which will mitigate leaks.

We have it in every special permit now that you have to do it in 30 minutes or less and put in an automatic valve whether it's remote control or ASV type valves for that.

So we are doing things now before the rulemaking, or any rulemaking, to get these type of thoughts implemented and operators giving us feedback on what works, what doesn't.

So if you go look, that will give you an idea there.

In this presentation, anyway, if you look, it's risk modeling, just to give you an overview of what we've done in the past, what we'll be looking at in the future.

Again, as Alan said earlier, in the spring of 2023 we will have a risk workshop.

It will be going over risk modeling, in this presentation we'll be going through the 2015 risk modeling workshop.

The 2016 to 2017 risk work group, and then future rulemaking or present rulemaking that we've already put in place for risk modeling and what to do with risk results.

Again, the spring of 2023 workshop, some of the ideas that we'll focus on, again, if you go back, it's what risk is, threat identification, data gathering, interacting threats, other threats that may impact the pipeline, and taking that information and doing a risk modeling, risk analysis, and what do you do with that information?

Again, do you put it in a safety management system?

Do you -- what do you do?

In other words, do you put it on the shelf or do you go do something with it?

So we'll be talking about that at the meeting, what can we do there to further -- to move the ball on it.

We've gotten NTSB recommendations, what do we do with those?

How do we incorporate them?

Again, just to give a little more detail, one reason I've got the picture in, I think as we've been talking, some of the geohazard threats that we have, a lot of them are what we had in the past, but also we've got a lot of new ones in the future.

As you can see, this particular pipeline, it's right on the top of a mountain peak, so it's going to have a lot of threats in the future.

Not only did it have threats in construction, but it will have future threats one year, two years, 10 years, 50 years out in the life.

One thing that I wonder on threats are we missing, is how many companies go out through a third-party company to do the design.

You probably go out to a third-party company to do the construction.

How many make sure that the third-party company is actually designing this pipeline, is looking at some of the things we're all talking about today, we're all looking at in the code?

Does your construction company come and participate in geohazard type studies?

That's some of the ideas that I would give as a takeaway to go back.

Even the folks that are routing, designing and constructing, are they participating?

I don't think I've seen any here today or yesterday or the day before.

So, you know, some way we've got to incorporate them because I think a lot of times they're probably routing these pipelines and designing them.

So, anyway, as we go through, we look at threat identification, data gathering, analyzing this, and you can see I've got analyze integrated data through risk moms, in other words, identify the probability of failure, determine the potential consequences of the failure, and then what is the overall risk?

And then the risk analysis.

Assessment intervals, consideration of monitored pipeline defects, and your preventative and mitigative measures.

I put this slide up because this was from a presentation on the 2015 workshop that I used in the presentation.

My point is, threats, risks, and what we do in risk modeling from 2015 to today I don't think has changed any.

If you look here at what's on here, you can see, we had slides that we were talking about then.

You can see here this is a slide.

We had river crossing issues.

Here's the Yellowstone River.

We also had crossings where we were crossing major freeways.

And then also we had seam issues with pipes.

And then we had the public not liking the outcome.

So, anyway, if you just look at this picture, it's very similar to what we're talking about as far as geohazards and interacting threats.

I don't think the picture has changed much.

Again, as far as the 2015 workshop, again, that was in 2015, and then after that, we had a risk work group.

We had five work group meetings.

They normally lasted two to three days, and they had participation of about 40 people, representing various factions.

You can see we had industry, regulatory bodies, national labs, the public, and many consultants that participated.

And you can go and look, you can see, here's our website, you can go look at the report.

In fact, for each meeting, we had every presentation on very unique aspects of risk modeling in there.

I think it's a good area to go to look at just to get an idea of the type risk models and what various operators and consultants were doing at the time.

It's an excellent overview.

Again, we did issue a work group report that was put out on a website in February of 2020.

You can see the name of it is pipeline risk modeling overview of methods and tools for improved implementation.

And the report was an overview of the methods and tools used for risk modeling.

And you can see the items that we have listed here, there's an explanation of the risk modeling methods, whether you're using indexing or probabilistic type models or something in between, looking at threats and interactive threat modeling, consequence of failure of the modeling, and then a facility risk modeling.

We did look at what do you need to do for facilities.

And then risk modeling data.

So you'll find all of that highlighted at this website, and also in the report.

Some of our recent rulemaking, and one reason for having a workshop, we have had some updates in the rules, in the liquid rule and the gas rule.

If you look, one is, the gas rule establishes that gas operators must, for threat identification, look at human error, such aspirational or maintenance mishaps, or design and construction mistakes.

Additionally, address the threat interaction and each unique combination must be considered at a common location.

And then also consider the consequences of a pipeline failure and consider the specific impacts and consequences of each high consequence area.

And then account and compensate for any uncertainties in the model.

Lastly is evaluate the candidate risk reduction activities, such as P&M measures, and reduced anomaly remediation and assessment intervals.

The last bullet was something that was also what we were looking at in 2015.

One of the things in the 2023 workshop would be what have we done from 2015 to 2022, 2023, as far as putting these measures in place, whether it is for geotechnical issue, whether it's for population building up around the pipeline, whether it's gas or liquid, have we added valves, have we added valves that we can close and isolate quickly.

Also some of the P & M type measures, putting in new pipe, have we looked that maybe we have pipes with hard spots or seam issues that maybe we need to do replacements.

What have we been doing on all these type of activities?

And again, I just -- you can see the picture that I've got here, this is a pipeline that's just recently, in the past two or three years, has been built, and if you look, the way we're routing pipelines today, maybe it's the only route we've got is, we've got unique threats that we're adding in, threats that I think, before you put it in, it needs to be looked at.

When you put it in, shortly thereafter, when you have any dry or wet spells, there's additional impacts from these type installations.

Also, if you look here, I've got on the screen, we have added to the -- you can see here in the gas code, 192.917, A through C, threat identification.

We've added human error.

We've also added criteria for data gathering and integration, and also for risk assessment.

I'm not putting everything down, but go back and look at 917 A through C.

Also in 192.935 C, we've added C, additional preventive and mitigative measures for risk analysis for gas releases and protection against ruptures.

And again, have we looked at putting new pipe in?

Have we looked at putting in valving?

We've also done the same type thing in the liquid rule, in part 195.

If you look, my first bullet here, we've added a defined list of attributes for our operator to analyze, and those attributes to put in the risk models.

Also, the 2019 rule addressed consequence of failure in modeling.

And then also the rulemaking requires that operators identify these relationships among anomalous conditions.

And if you go to the next slide, it's a little more detailed of what we put in.

You can see here we added it in part 195.452 E on risk factors for establishing an assessment schedule.

In 195.452 G we've added here analysis of all available information and the consequences of a failure.

And then also we've added to 452, integrity management, I 2, I 3, I-4, identifying get need for additional P & M measures, leak detection, and emergency flow restricting devices.

And again, the 2023 risk workshop, the workshop will focus on risk modeling, analysis, data integration, interacting threats, and other threats that impact pipeline safety.

We'll also look at any new or existing NTSB recommendations, what do we need to do there in our models that they recommended, that they've seen on past failures.

And then third is any other topics that we need to consider as far as improving our overall approach for risk models.

And then lastly, how can you provide topics for the risk model agenda.

Please, after this meeting, later this month, early January, please give us your ideas of things we should consider.

You can see here on the slide, I've got two methods.

You can either put it on the docket or you can go where you registered for the conference and it will tell you what to do.

Please title it 2023 risk workshop topics when you provide a comment.

We would appreciate any comments you may have.

And thank you for listening and I'll turn it back over to Max.

[applause]

>> Just any questions for Steve?

>> There is one question online.

From Andrew from AGA.

Will the risk modeling workshop be focused on transmission pipelines or will it also include distribution pipelines or possibly even include storage, LNG and/or regulator or compressor facilities?

>> We'll take comments and come out later with everything that will be included in it, around true.

>> Additionally, will the workshop be in person, and if so, is there any information that can be shared on potential location?

>> No, we haven't decided exactly when it will be or where it will be, but it will be coming out with more notice than this meeting, like Alan said earlier.

We'll be giving more notice.

>> And Steve made a comment about land surveyors.

I just had the opportunity this week, last week, to meet with some land surveyors, a couple operators as well, and actually, yeah, land surveyors are engaged in certain aspects.

I always thought they were only on the siting side but some operators are using -- [no audio]

When we issue a permit, we look at the condition of the pipe, in other words, what's the seam type, what's been the history on failures or leaks in the area.

What's the depth of cover?

Have they had stress corrosion cracking, have they had any cracking type issues on the permit.

We look at all of those type things and we consider it before we give a permit and if we do give a permit, we look at the conditions as far as assessments, the timing of assessments and what we put in as conditions, before we give it.

We're also looking at the lifetime of the pipe more so than right at -- a moment in time.

Yes, a new pipe, at a moment in time, might be -- would be stronger and would be in better shape, but if you look at it over a 10-year period, 15, 20, if you require an operator to keep it as a certain standard versus letting it be a high bar and then go down, overall, over a period of time, you should have a better safety record.

>> And I'll just add, generally, there is a perception that we approve every single special permit that comes in.

That's not necessarily true.

We have had some denials in the past.

We've had cases where operators chose to withdraw, and part of that is the valuation process that goes on.

So it's not an automatic, if an operator submits, that they will get approved, so I just want to put that out there.

>> One more question from Simon Gant.

Would there be interest in the 2023 risk workshop of having international comparisons?

HSE would be happy to contribute.

We're keen to share information and learn together.

>> Yes, I think we would gladly welcome HSE.

>> Gary Kenny.

There's risk analysis, and there's risk management, which is the decisions taken from that.

Is your workshop going to cover risk management as well?

>> I had in there that we would see how it ties into SMS, so SMS is risk management, would be how I would call it, in other words, when you do the risk model and the

company is trying to see how it fits into their safety culture, how does it fit into getting money to actually do the repairs, to do the work, so I think, yes, that would be a topic of what we would be talking about.

And we would want input of how operators are doing that, especially the ones that have SMS programs.

>> So you're going to be looking at actual decision criteria?

>> We'll be looking at it, yes.

We'll be considering it.

It will all be part of the program.

And the actual program, we haven't developed it yet, we will take input that we get from people here, people online, and the general public, any comments we get for topics, we'll be considering those and putting together an agenda for the meeting.

We haven't put that agenda together yet.

It should be in late January/February, after we get comments.

>> Okay.

Thank you.

>> Any other questions from the webcast?

Anything else in the room?

I think we're going to lunchtime now.

We will have a shift in the agenda in the afternoon, just so you know.

SMS will be first, right after lunch.

And then we'll go for rule implementation.

Whether you're here in the room or on the webcast, it will probably be 1:00 to 2:15 Central Time for SMS and then we'll have a break and then go into rulemaking and implementation.

With that, I think we're going to lunch until 1:00 Central still.

1:00 Central, so looking forward to seeing you afterwards.

[applause]

[Break]

Caption test for PHMSA.

>> Ladies and gentlemen, we will begin in just a few moments.

Would you please move to your seats.

>> We'll go ahead and kick things off for the afternoon session.

Good afternoon, I'm Alan Mayberry, associate administrator for pipeline safety at PHMSA.

To talk about pipeline safety management systems, as we kick off the afternoon session.

I've got a couple people joining me here today that you know quite well.

I've got Linda Daugherty, who is the deputy associate administrator for field operations.

I'll let you introduce users.

>> Max Kieba, director of program development.

>> Pat Carey with Kinder Morgan.

>> Colin Frazer with the American Petroleum Institute.

>> And our thought here today was, I'm going to run through a series of slides, and between at least the PHMSA team we'll have a bit of a tag-team as we talk about PSMS.

We'll give you our -- where we are with it, where we see it headed, our expectations, but we did want to make sure that -- we again want to end this great three days of dialogue without really reaffirming where we are with PSMS.

I appreciate those of you who are participating today here in person and then on the webcast, but hopefully this will be useful for you.

We're trying to switch up how we approach this a little bit.

You'll see a bit of a change in how we present this, and I appreciate Linda's help in, you know, with the materials that we're going to be going through today.

So if we can go to the next -- okay.

We've been talking for PSMS for some time, but to give you a brief history lesson, you may recall that in the aftermath of the Marshall, Michigan, spill, back in 2010, the NTSB, investigating that accident, ultimately issued a recommendation.

It was one of a number of recommendations.

But this one was specific to developing a pipeline safety management system.

At the time they recognized that the pipeline industry really was kind of late to the party, if you will, related to adopting a systems approach to safety, such as pipeline safety management systems.

So at the time they issued the recommendation to the American Petroleum Institute to develop a standard.

And that's quite notable.

It didn't come to us at the Office of Pipeline Safety.

It did go to API that actually has an accredited standards setting process that involves a variety of stakeholders to develop the standard.

So it was really led by a standards making body and it involved a variety of stakeholders, including PHMSA, Linda was on the team, as well as others, and state government, and the industry and the public.

That was over seven years ago, it's hard to believe.

And by the way, if you look on the slide there, we have a number of photos with accidents.

The one on the far left is the PG&E failure in San Bruno.

That was also in 2010.

And actually that was an accident where NTSB also was considering the need for PSMS in the aftermath of that accident as well.

And the one in the middle is Marshall, Michigan, the spill into -- it looks like Kalamazoo River there.

On the right, I believe that's one of the distribution failures that occurred, I'm not sure which one that is, I think it might be Philadelphia or Allentown.

But, anyway, that's sort of a brief history.

Let's move on to the next.

As far as PHMSA's philosophy on this, we agree and I've long said, our whole team has said, regulations alone won't get us to zero accidents.

We agree that zero is our goal, but, you know, we can respond to accidents, we can develop new regulations, and we can learn from the accidents in those new regulations, but we repeat the cycle over and over again over time.

We've got to find some way to get around that.

I'd like to say we'll regulate until the cows come home and we do a digital gent job as shown by our regulatory docket, we have a lot of rules in play.

They're not the key to closing safety gaps.

SMS and a systems approach to safety is that key.

If you look at the accident history over time, and the data that we show you and show the public, it shows a gradual decline as we try to achieve zero, it's headed in a good direction but it never quite seems to get to zero.

And that gap between where it is right now and zero, really, we're not going to get to through regulation.

That's going to be up to the operator, a big focus is on the operator, to adopt SMS, to really help us get to zero.

Okay.

>> And one of those items -- you guys can hear me fine.

I think one of the issues, when we talk about regulations, those are prescriptive or performance-based, but what the real issue comes down to is safety culture, and making the right decisions.

When you have a choice, you could go one way or another, having a sound safety culture so that you make the right decision when you're presented with a choice, getting in your car to go home tonight, you have a choice to put your cell phone in the seat beside you or wherever you put it or you have a choice to put it out of reach.

That is a decision you make.

Is it right or wrong?

Today it might not make any difference, but at some point it might make a difference.

With safety culture, with SMS, it's about pushing people to the point where they think with intentionality about every choice they make.

And they make good decisions.

Even if they're difficult.

>> Thanks.

Really speaking to the bullet there as far as voluntary adoption, as you probably know, in the seven years that SMS has been around, we have not incorporated by reference into the code, 192 or 195 or any of the federal pipeline safety codes.

We've certainly talked about it but we are -- firmly believe that the voluntary adoption is the way to go, especially in the early years.

Maybe at some point in the future we can talk about regulating and adopting it, but, you know, putting it into a minimum federal standard for pipeline safety, we felt and we continue to feel is not where we need to be with this because we need to see what it can be, we need to promote voluntary adoption so we remain committed to that.

But people need to embrace that and take it to heart, and take it seriously, and adopt it, as Linda said.

It needs to be underpinned by a strong safety culture.

We've gone along seven years, which is hard to believe, again, and then, you know, lo and behold in September of 2018 we had an accident on a distribution system in Massachusetts, you have a couple of slides here, and this involved the overpressurization of a low pressure distribution system.

And in the aftermath of this, we came very close, one, we came very close to regulating, requiring that SMS be put into the code, it was definitely talked about with our Congressional oversight committee and in numerous conversations between myself, Linda on the Hill with my counterpart at NTSB, Rob Paul, we continued to maintain that, yes, while this accident really shouldn't have happened, and a strong pipeline safety management system underpinned by a strong safety culture would have helped prevent this, we remain committed to -- you know, it would be the best approach, would be to still keep it voluntary but have the expectation that operators do adopt it because it would have, we think it would have help prevent this accident.

And in the aftermath of this accident, instead of regulating, we took a bit of a different approach.

Congress also took a different approach as far as not mandating us to regulate it, and we'll get into that in a second, but I wanted to ask Linda if she had anything to add.

>> I was going to say, Congress gave us a mandate, which we'll cover in a second, they aren't requiring us to regulate it yet.

The yet is very important.

As you'll see in the next slide.

>> I was going to say at some point, usually you're used to hearing us say we're one bad accident away, I guess now is the time to say that.

We actually -- we really thought this was going to be that accident, but we really need to take the -- what SMS offers and, again, I just call it a systems approach to safety, embrace it, and adopt and jump on the journey.

So our expectation is that SMS is adopted.

And then in the aftermath of the accident, we just looked at section 205 of the Pipes Act, Congressman dated us to prepare a report on the adoption, on where the industry is in adopting PSMS.

This mandate specific to distribution systems, the accident was specific to a distribution system, but, you know, the common thread in all these accidents, though, there's a human element.

There's a cultural element that we all need to take to heart, and so while you may not operate a distribution system, I think you can learn something from the accident.

But I think, again, it tells the story of the need to just adopt this systems approach to safety, to get better.

>> I'll just jump in on section 205 there, that's partly under my team's purview.

We did do a 60-day notice on the extent to which -- at the bottom there the feasibility for distribution operators, the number of customers, the amount of natural gas the operator transports, but it's kind of looking into the feasibility of -- to what extent distribution operators are implementing SMS and I think Colin might have slides later, but there is a sense that many operators are doing it, or at least distribution, I should say, there's probably some really, really small operators that, frankly, 1173 itself might be new to them.

So trying to have that dialogue of okay at least some elements of what's in 1173, go down that path, to what extent are you implementing the elements and then also what are the feasibility concerns.

So, again, we had a 60-day comment period.

We had good comments from industry, including the industry pipeline SMS team, things like, you know, we had how much is it fully implemented?

The plan to check X cycle never ends, it keeps going, kind of like those aspects.

We had cost questions in there that -- there were questions whether they were feasible or not.

We're working through those comments and we're hoping, I don't know if we'll have them at the end of the year but early next year possibly we'll get the 30-day comment period out there.

>> So you've gotten the setup, and we're going to roll through the next few slides fairly quickly.

I think you get the message from where we are with it.

We have the report, and I'll just move in the interest of time.

As Linda pointed out, you know, it's very important that SMS or PSMS -- we use those acronyms interchangeably, they're underpinned by a strong safety culture.

Culture really influences so much what you do.

You can develop the best standard in the world but if you don't have buy-in, if you don't have leadership commitment, which is a key part, and it's the reason why I'm here, Linda's here, Max is here and promoting this, then it's really difficult to have an effective -- to really build your culture.

And here are the things.

You've seen this before, that culture influences behavior and then that behavior drives performance.

Here's a little bit more about culture.

I want to go fairly quickly, but I don't want to understate the importance of culture, another way with you put it, it's the glue that holds SMS together.

It's doing the right thing when no one's looking.

>> A comment that I would have on this is, when you talk about safety culture, and you look at its impact, what we see is the impact.

So if you were listening closely to the presentations on day one, they talked about decisions that controllers are making on whether to shut down a pipe, whether to let it run a little bit longer, maybe they're living in the river or swimming in the river of denial, do I really have a leak this time, that hope.

It's not a criticism of controllers, it's the -- the safety culture is, I have to assume that I've got a problem and shut it down even though I know my bosses may come in and say, why did you shut down the line?

You know, when I started in the industry, I was told every employee has the ability to shut down the pipeline.

But then I had colleagues that came up to me and said, you can, but if you do, you better have a darn good reason, right?

What's the driver?

What's the culture?

Making tough decisions, doing the right thing when it's going to cost you more, when it's going to be unpopular with your colleagues, yeah, guys, we gotta stay an extra two hours on this site on Friday night when everybody wants to be over at the adult beverage place because we have to reduce stress on this line before we wrap it up for the evening, or, you know, just all the decisions you have to make on a daily basis.

It all goes into your safety culture and the way you consider and make decisions.

>> And we it from our perspective -- we see it from our perspective, seeing everything that goes on out there.

How does the regulator impact safety color?

One thing we learned recently is get out of the way.

There was an audit of PHMSA by the Office of the Inspector General, and I won't get into the details but there were a lot of learnings.

We're on the journey with you, we're learning with you, but we had things to learn related to culture as well.

That report is available publicly, so I would commend to you to take a look at it.

I know many of you already have.

We did find opportunities for improvement.

And one of those opportunities was developing our own internal PHMSA -- adapting SMS internally.

We've coined it PHMSA Plus.

And here are the elements of PHMSA Plus.

This again, SMS for the regulator, and it's -- it will guide us in how we do our business, but you can see what plus stands for.

I won't read all of those.

But as you walk the journey, we're walking the journey with you.

As you have found it to be challenging and it's not a cake walk, we've found it to be that way because honestly we had some false starts as well on adopting it.

But you have to start somewhere.

You need to start, it's important.

It's important -- the leadership commitment part, while it's not lead by example, but as far as leadership commitment from myself, from my boss, the administrator, deputy administrator, we promote the adoption of the principles of SMS internally, and externally.

So, obviously safety is the pinnacle of what we're all after, but, you know, it's beyond that.

Linda was on the team that worked on this.

>> One of the things that -- Masu was the lead but one of the things I would point out, when you see safety on a regulator's SMS plan, the immediate thing is, are they talking about their internal safety, are they talking about the safety of the industry?

And I would say it's both because if we make bad decisions as a regulator, we can adversely impact the industry.

If the signals we send have unintended negative consequences, we bear that responsibility, right?

So we have to be very careful that we think through the results, we think through our actions, we think through anything that could happen.

If we go out with a rulemaking and we don't take all factors into consideration, we might end up creating more harm than doing good.

So it is a very careful balance.

So I would suggest to you that PHMSA's internal SMS doesn't just look at our own safety, but it looks at the safety that we influence as well.

>> Here are the elements of PHMSA Plus, which -- many of which match the 10 elements of the standard 1173.

Number one, obviously, leadership commitment.

In the interests of time, I'll move on.

And this is the circle of life, I like to say, the plan, do, act, or adjust as far as the approach we take to everything we do.

First of all, we recognize our role leading -- you know, the role entrusted by Congress to protect Americans and to provide safety leadership.

We all have a role in getting to zero.

We all are accountable.

And we need to hold each other accountable.

Lastly, stay humble.

When you get on your high horse and you think, wow, we're really good and look at where we are, you know, don't stop there.

Always stay humble.

We can allegation get better.

It's a journey, it's not a destination.

I know you've heard that.

With that, I think --

>> We asked -- I don't know if we want to take questions now or go to the industry side, but we asked Colin to come by to talk about where the industry side is on various PSMS aspects and then pat's here also to give the operator perspective.

As we get those next slides to come up, I do want to thank them for coming as well.

And I believe Colin will talk about it, but the 1173 gets updated, you know, some of those aspects.

If you want to give intros, too, that would --

>> Good afternoon.

As Max said, my name is Pat Carrie, I'm here representing the implementation team of SMS.

I just wanted to give a little background of the implementation team.

As Alan pointed out, the group that wrote the -- there's several members of the committee that originally developed the SMS document, Linda being on there, Mark was here earlier, Jon was out there earlier, all members of that same team.

And some of them still stayed engaged with the implementation side, and you'll see Jon's name come up on a couple slides later as being one of the leads of some of the -- of this organization.

One thing I want you to take away from this discussion today is that this implementation team is here to help, and the key thing here is that there's a website out there, pipeline SMS is a key thing for that pipeline SMS.org is the name of the website, and there's a whole array of resources that are available on that site that provide evaluation, checklists, some other -- some other training material, just a wealth of information for people to get started on the -- their journey of SMS.

Both Alan and Linda keyed in on safety culture.

And that's a key part of any SMS program.

And it's not only establishing a safety culture, but leadership to maintain it, just as kind of a side story, at our last committee meeting, one of the homework assignments -- I'm the incoming chair of the committee for next year.

Our current chair is with Enbridge, and she had shared a video of a recent event that Netflix had published a program on downfall, is the name of it, without mentioning the companies that were involved in the incident, but it's very focused on safety culture and taking a company that had established its safety culture over a long, long history, and how it was able to erode that safety culture into several tragic events, and having a significant impact on the company.

So it becomes an issue of leadership needing to maintain the expectations of that safety culture, key parts of it.

As part of our discussion to kick off our last committee meeting, there was a lot of discussion and input on how that particular episode, the video itself.

It's a Hollywood thing, taking a real life event and putting it into a video -- or an hour and a half documentary, but it does drive some key points home that are definitely worth the watch.

Again, it was downfall, and all I did was search Netflix and it came up.

So a key thing here is to take the pipeline SMS org.

The team was established about the time of publication of the RP back in '15, and it had been in place.

It expanded after a year or two.

It expanded in order to be more than just an API effort.

It became a one industry effort.

And there was outreach from API to several of the other groups within our advocacy groups within DC, in order to have membership and participation in this particular group.

And all of those groups are listed across the bottom of the screen here.

But you have several trade organizations, and most recently, the contractors have joined the mix, and Colin will go into a little bit of detail of how we've developed a new tool this last year that will help enormously with the contracting community.

You'll notice it -- the GPA is on here as well, small gas operators, small distribution companies, the American Gas -- I'm sorry, the American Public Gas Association as well as AGA, are all part of this particular group.

As I mentioned, I'm the incoming chair, and Colin will be here to cover the last part of the slides.

It will go through some very specific efforts that the group that he's been working on, swells API's efforts internally for assessments will be covered.

More on the different groups that are involved, as I mentioned, the overall objective is the industry coming together in order to enhance pipeline safety, and the ultimate goal of zero incidents is out there in front of everyone and how do we get there.

So within our focus areas that we have, there are several subgroups that are listed there on the side of increasing industry participation -- this is the same group that puts out

the yearly survey that comes out through the different trades, as to their membership, in order to get a gauge on what the implementation of the document is, as well as feedback on where stumbling blocks are, where people are struggling with the implementation.

What our committees do is take that and develop specific training webinars in order to cover specific topics to help that implementation step.

Erin has been very focused on the survey.

That was one of the pieces of feedback that Max had mentioned that the committee provided under the -- the data-gathering that was out on the 60-day notice that Max mentioned before.

So we've used that survey in order to inform our comments that went back to PHMSA.

The increasing stakeholder engagement, Jon has been leading that group for several years.

It becomes a lot of communication issues that come into play there.

And we'll go into a little bit more detail on what some of the work product of those particular groups have been looking at.

Colin is going to go into a little bit more detail on the support of the operator journeys.

They've been working with the AGA on some of those efforts.

The oversight, the governance team, is looking at trying to develop and maintain some metrics that we use on the implementation, you know, the number of assessments that the API is performing, the level of participation from the industry, the number of hits that we get on the website.

All of those things are issues that are being tracked in order to see how we're doing and what levels we need to move up on.

Again, more detail on the focus areas that we're looking at.

The contractor guidance framework, again, Colin will cover this in greater detail, but this is -- it's an interesting perspective because the contractors that sit on that group brought a document that they had developed through the Distribution Contractors Association on kind of a framework of SMS for contractors, kind of the mantra of that particular group is that they didn't want the operators to do the same thing that we had done to them under the OQ, where they had to implement several hundred different types of OQ programs in order to align with the operators.

This is an effort in order to head that off so that the contractors have their own program that they can more fit and align to the operators program, essentially having their own stand alone, so that's an underlying that the contractors had in participating in this effort.

Colin will go into this in a little bit more detail, the assessments I've mentioned before as well, and then the safety culture survey, this is something that various groups have done, you know, again, a key part of the document is safety culture.

Trade organizations that I'm most aligned with is the INGA group and we've had that safety culture survey in place for, oh, you think we're on the third or fourth survey that we'll be doing now, doing it every couple of years in order to be able to get the results, evaluate those, allow us the chance to adjust on our overall program, areas we needed to improve, and then reevaluate that on the next round.

As that's progressed through the years, we've gotten the rest of -- through this one industry effort, we've gotten alignment with some others.

CEPA was involved with this when they were still part of the organization.

And so we branched out to the Canadian brethren as well and had them participate.

And this year going forward, we'll do it as one industry and that's something that will be done in '23.

There's a lot of coordination behind the scenes that goes into that in order to make sure that, you know, people are -- realize that it's not a fishing exercise, the issue of having too many surveys and the fatigue that becomes involved in that.

Increasing industry participation.

We're always looking at the survey.

Those of you that have participated in it, may seem to think that it looks like the same question set every year, but we've had a lot of internal discussions on how we try and break that up, and trying to move forward with it so the first time that you ever participated in the survey, it may take you into a different branch of that, but that's something that's in development and I don't know whether we'll get to it next year or not.

We're currently out with our survey for this year, and I think that the first deadline that we had asked for responses has already passed, but that's one that we -- we never really give up and the trades will be reaching out to whoever is missing and trying to get that response back from them.

One sidetrack here is that in our survey results from last year, we had a pretty considerable jump in the mileage that we reported.

We made a very concerted effort in order to align with the processes that PHMSA uses in order to track mileage, up until that point we had been really just looking at the gas transmission mileage, the liquid transmission mileage, not really paying attention to the service mileage of AGA, through various years we had tracked number of services but never really converted that to mileage in the same way that PHMSA does.

So last year we did that and had a pretty significant improvement in the amount of mileage that was actually reported.

I believe it was in the neighborhood of the mid eighties percentage mileage that's out there.

Not to say that we -- we have a long way to go with the number of operators that are responding.

If you look at the overall numbers, there's a lot of small operators that don't respond, and it's always a focus that we have on trying to improve the level of engagement with them and that's really the last bullet on this particular slide, is supporting the development of the small operators programs.

Within the update of the document that I'll get into with the timeline here at the end, where we are with the reaffirmation of the RP, is that, as part of that update, there would be an annex that we would develop, very similar to what was done with the contractors program but it would be more of a guide for small operators in order to develop something that's flexible and scalable for their particular organization.

Moving still through the areas of focus, the stakeholder engagement, you know, we do put out an annual report.

Once that report comes out, we try and engage with some of the key stakeholders that have interest in this, reaching out to the regulatory community to the review that, also reviewing what our focus areas are one -- what we see in the report, and we've also reached out to some of the -- at the public organizations that have interest in the -- in pipeline safety and the SMS document.

Something that John was very active in engaging with one of the operators, was the tie between SMS and ESG.

The discussion that we had within the committee is that there's a lot of parallel in the metrics that are reported under ESG, and, you know, it's not a matter of duplication of work, there's synergies there, and this was something that we tried to align those

synergies so it became obvious to somebody that may have a big push from ESG but they haven't necessarily engaged 100% on SMS, you know, when you look at it, if they're doing the ESG, they're a good ways along on what is required out of SMS.

And that document was there to try and align between those two to give people a starting point on that implementation journey that we all know so well.

The last one, communicating materials and tools for pipeline contractor integration, now that we have the guide there, developing some of the communication tools for the rest of the contractors that may be out there to say -- to show that this is out there and that they can use this.

Backing up to looking at the different contractor communities that are involved in this, we have several trade -- large contractors and their trade organizations are engaged on the committee, so we've got a good quorum to get started, but obviously there's going to be contractors that aren't part of that organization and that communication tool will be hopefully would be helpful to engage them.

The governance and oversight, you know, looking at the progress and the actions that we need to take in order to reaffirm 1173 going into next year, and overseeing that.

Again, I've got a timeline that will go into that, and some of the metrics I mentioned early on, making sure that we were reviewing that and keeping that fresh, and then publishing some of those results.

So the timeline that I mentioned, as far as the API document itself, as Alan mentioned, published in July of 2015, there was actually an extension of two years that was done in 2020.

And right now we're out for ballot on the reaffirmation of the document so that we can extend it five years.

In that five years, rework -- update get and rewriting the standard, but that's already started.

Comments were received on the document last year.

There was a group that was set up to evaluate those comments, recommend whether updates would be done, and then submitted that back to the task group with oversight of the document.

Those recommendations were accepted and essentially part of the voting for the reaffirmation in order to charge that group with reworking that.

That particular group is looking for people to engage in that rewriting process, so that would be something that kicks off next year.

We have a good starting point of what needs to be addressed and then working through that.

As I mentioned, the voting group, it took some time in order to get a balanced team together.

There's another standard that's out there that's being developed, if you haven't heard, on stakeholder engagement.

That particular makeup was pretty unique in the way that the team was set up between the public, the regulators and the industry on having equal footing in that particular discussion.

We tried to do that within the voting group as well.

It's not necessarily made up the same way, but the focus was to attempt to do that.

That particular group, like I said, the ballot is out, and I think that the actual deadline is tomorrow for reaffirmation.

I'm not sure what the status was.

The last time I checked, they had about a third of the response in that they needed -- well, a third of the voting group had responded.

That's required in order to keep the standard current.

And then one the next five years we will update that process, the objective is to obviously get it done before the five years is up, but I think that the softer target of trying to get it done in the same timeframe that the line-up with about a 10-year anniversary of the first standard, but hard deadline would be five years from now.

So that's pretty much all I had to cover, and I'm going to turn it over to Colin to go through some of the efforts that he specifically has been working on.

>> Thanks.

Hi, everyone.

I'm glad to see we have a full audience even on the last day in the afternoon, so it's good to see everyone and I hope everyone online virtually is learning a great deal about this important topic.

My name is Colin Frazer, I work for the American Petroleum Institute, senior manager of system programs.

So I manage all of API's assessment programs for various standards that we've created assessments for.

As part of that, I manage the pipeline SMS program and I work hand-in-hand with the pipeline industry group that Pat has done such a great job of talking about here today.

As part of this group, I really wanted to give you all an update of where we are on assessments, and give you kind of some key learnings that we've come out with from the about 12 assessments that we've done to date.

Just to get started, given I don't know exactly how familiar the audience is with our assessment program, I'll give you a few details just to help you conceptualize.

So RP 1173 was published in 2015.

As part of RP 1173, section 10 has a triennial audit requirement where an operator is required to assess how well they're implementing RP 1173, and the requirements therein.

So after the standard was published, the industry team got together and said, how are we going to tackle this, how are companies that might not have deep resources and knowledge and management systems going to fulfill this assessment requirement in the so that really led the industry team to sanction API to create kind of an out of the box solution to help get experts into companies to provide valuable feedback to fulfill those section 10 assessment requirements.

And an important point here, we call this an assessment program as opposed to an audit for a very specific reason.

We do not want these assessments to be check the box, here's your audit report card, sort of engagements.

We want to send qualified experts to operators across the country to really dig into their systems in a truly transparent and collaborative way to provide them really meaningful feedback and kind of a cold eyes approach on what might make their programs mature from an 1173 maturity spectrum faster, as well as convey good practices that they've seen at other operators that work well throughout these implementation journeys.

So as part of this program, API kind of acts as the coordinating body and I have a team of expert assessors that I build teams and send them out to operators to conduct these assessments.

As part of these assessments, it does fulfill the section 10 audit requirements of the RP because an operator gets detailed feedback about each of the statements that are found in RP 1173, but they also get very meaningful feedback on just general opportunities to increase effectiveness of their programs as they exist that are completely apart and separate from any gaps identified to the 1173 shall statements.

So it's really meant to embody this collective approach of continuous improvement that I think we've all up here spoken about in some way, shape or form.

An important part of this, too, and I know Linda talked about it, Pat talked about it, we've all talked about it, is safety culture.

Safety culture is a key part of this standard.

And it's one of the main things that our assessors are really keen on addressing with operator leadership, as well as going out into the field and getting meaningful feedback from the front line employee on what they think the safety culture is like within an organization.

We've seen a lot of very positive feedback about transferring and translating what we're hearing in the field back to operator leadership as part of these assessments as well.

I'm not going to go through kind of details of each of the number of assessments we've done, but I just want to highlight, we're doing these assessments on a very large breadth of types of operators.

We understand to understand that 1173 applies to all pipeline operators, not just the large liquid operators, not just to the large gas operators.

There's a whole spectrum of products that this standard applies to.

And we're seeing success of this program across that spectrum.

An important question that I get asked a lot about this assessment program is, you know, do you have to be doing this well in order to take advantage of the program, and I always say, I want more people who are less mature to start doing these assessments because what we're finding is the feedback from these experts can actually help operators mature a lot more quickly and understand what a mature program looks like in a lot of specific areas.

So with that said, we kicked off this program in 2020, right before Covid, great timing for us.

But that being said, as you can see here, we have seen a gradual uptick in this program and we look forward to maturing it and bringing it to more and more operators as more folks are implementing SMS and as kind of word of mouth spreads that these assessments are valuable and are not check the box audits where you get a report card and nothing else at the end.

One key component to the assessment program that I want to highlight is our ability to benchmark, and I think this is really valuable.

We consider the benchmarking as being kind of the carrot to this effort for those who participate.

So we actually kind of statistically analyze the scores that we give based on the industry maturity model, across different operators.

That way when you participate, you can really see where the spectrum of the industry who we've assessed to date lies and where you lie on that spectrum in comparison.

That way you can do a better job of kind of focusing resources on areas where you might be lagging behind some of your peers.

Some key things and learnings.

We talked a lot about safety culture.

Safety culture and leadership as one of the highest scoring areas that we've seen in assessments to date, which is one of the most encouraging things that I'm taking away from assessments we've done.

The leadership teams in these assessments that we've done to date are committed to safety, and are committed to taking these outputs and making meaningful changes via the cycle in their operations and taking feedback from the field and from our assessors in order to make their operations more robust and more mature to the 1173 requirements.

Additionally, you know, I'm not just going to highlight the good, stakeholder engagement, the scores we've seen can be improved.

A lot of operators, speaking to regulation, are very focused on their public awareness programs, and 1173 goes a little further than your public awareness programs.

We hope that, with the publication of RP 1185, operators can take nuggets from that and really drive those engagement programs further to meet more of the 1173 requirements.

Also, we're seeing external learnings incorporation can be improved as well.

One of the requirements of 1173 is that an operator has to have kind of a structured process for understanding the events that are happening in industry, and incorporating those learnings within their operations as well.

So we're -- and this is a takeaway for API to do more work specific in that area and hosting more events where operators can share stories in a trustworthy manner that helps the entire industry.

And last but not least, which will segue into my next topic, is contractor applicability.

We've heard a lot of commentary in the field about how contractors fit into this puzzle.

And we've actually heard from our assessors that a lot of contracting firms are hiring them to come in and do gap assessments to 1173 as mandated by some of the operators they're doing business with.

And sometimes those are resulting in some disparate contractual requirements.

And we want to acknowledge that having different safety requirements in different areas, we don't think really makes anyone safer.

So we want to do a better job of trying to align an industry and contractor approach to help better integrate these contractor programs.

So with that said, we've talked a lot about it, the wait is over, I'll talk more about it now, but we want to talk about the contractor framework that was recently published last month.

I really like this diagram at the bottom left.

It really, I think, embodies what the document is supposed to do.

So as the pipeline operators implementing RP 1173, we understand that a contractor's management system or just their safety programs has to be incorporated in some way in order to truly be efficient and to ensure safe operations in those contractor-led jobs that happen in the field all the time.

So the vision for this is, you know, we recognize that contractor adoption is essential, and while we feel that the industry framework is clear, the contractors could use some more guidance.

So the goal here is to increase SMS support of contractors and provide them a mechanism to structure some conversations with the operators that they do business with.

So what does that really look like?

Really, the second bullet is kind of key on this slide.

So what we've done is, we've highlighted 56 of the 234 total shall statements that we think are really key for the operator and the contractor to have conversations on, and to collaborate from a safety program's implementation standpoint, to ensure that they're both aligned and how the contractor programs integrate with an operator's pipeline SMS.

We are very keen on the fact that contractor scopes of work very widely, so we tried to do a good job of incorporating all 56 shall statements that would be applicable to kind of any contractor that is doing work, but we recognize some of those shall statements are completely out of scope for certain contractors, scopes of work.

So what we want to do is just give contractors a way to sift through all these requirements in a meaningful way to target what is truly in scope for their operations.

This is the content and the different sections we wanted to make sure that safety culture was highlighted as well, just because it's so important to this work.

And on here I just wanted to -- yes, so this is available for free on pipeline SMS.org and I also would be remiss to not say that this is not an API standard.

So this did not go through API standards process.

This is something we created as a guidance to help industry at this key moment, because we know these conversations are already happening, and if we waited two years to write a standard for it, we would have missed the mark.

So we wanted to make sure that there was something out there to try to and align these approaches in the current way.

All right.

Those are some of the different pages from that, but I encourage you to go to pipeline SMS.org and download that.

Looking forward, we want to recognize that, like operators, contractors, some contractors aren't going to have a lot of depth of expertise in this area.

So we are also exploring the possibility of creating a much smaller in scope assessment program to help get some of our key assessors out to contractors that really want some help in understanding how their safety programs integrate with an operator's safety programs.

So we're currently in the process of working with the contractor trade associations that will be a part of pipeline SMS industry team to understand the scope of that potential assessment program and what would be valuable for them as well as what outputs might be valuable for some of their operator customers that use them for work.

And with that said, that is kind of the prepared remarks from API, but we're happy to take any questions from the virtual audience or from those here this person.

>> Okay, thanks.

Let's start in the room.

Are there any questions?

We can start there.

Linda?

>> Do I have to walk to the mic?

So, I love that you all have developed a contractor approach.

I'm casting my mind back and looking at Mark and John back in the 2013/14 time range when we were working on 1173.

I remember the impassioned, we've got to do something about contractors, got to make sure they get the message, and that's what -- how many years has that been?

Just a few?

It's cool to see that something is actionable here, that we've got something.

We've moved beyond a, yeah, we gotta do something to, you did something.

Doesn't mean that the journey is finished, but it is nice.

A comment generally on safety culture, though.

So, I have the pleasure of participating on the international regulators working group on safety culture, which is sponsored by the CER, the Canadian equivalent.

And we have -- Bessie participates in that group, anyway, a lot of provinces, very diverse.

I bring it up because we talked about earlier about, pipelines don't recognize international boundaries, right?

Safety culture in Canada has -- they've established a statement of what safety culture is or could be.

They've identified a way to evaluate it.

They've done a lot of work in that area.

They also have a regulation for SMS.

My question to you is, is the API group -- you mentioned CEPA.

You mentioned work with CEPA.

Then you said something about when they were part of the group or something like that and it was passing.

So I'm curious, do you have Canadian counterparts that are still engaged and help shaping a North American approach to some of these concepts?

>> Definitely.

The Enbridge and TransCanada are parts of the implementation team, so we've got the Canadian influence for sure.

The reference to CEPA was the fact that that organization is no longer, so that's why we lost them as being part of the oversight governance team.

>> Has there been a replacement for that group?

I honestly don't know.

>> Not that I'm aware of.

>> That's too bad.

>> Maybe some of the Canadian operators would know more about what's happening on that.

>> I would just hop in to say that I don't think a replacement for that group has been replaced but API has started having more and more conversations with the Canadian Standards Association as a result of that, and actually I don't know if people are familiar, we're actually in the process of working toward a process safety event standard in collaboration with that group to align on process safety event reporting across the industry right now.

>> Okay.

Thank you.

>> How about online?

>> Yes, a question from Jeff Hedges for Colin.

How do you train year to year changes in the safety culture survey if you are updating the questions?

>> So that's a really great question.

When we say we change the questions, first and foremost, I would not say we're changing all the questions.

There are some of those questions on perceived maturity and where people think they are in the journey that are going to stay the same.

Where I think the changes come in is whenever we see kind of areas where industry might be struggling and we want to tease that out a little bit more, and the survey is a key way that we can go about that because it gets distributed to all of our sister trade associations to complete.

So Pat, I don't know if you had any insight into that aspect.

>> My comments on that were more along the lines of those that had not -- you know, if you've engaged and had -- been implementing the SMS from the beginning, some of the questions that are asked are a bit stale and just are regurgitations of the year before.

Those may be germane questions for somebody that's just starting the journey, and we wanted to have some way of segregating that so that those that have been involved with it for a longer period of time, don't have that repetition and can focus on some other areas that may be more of interest to them.

But, again, our implementation team is really focused on getting started in the journey, and then also supporting as we go, and the assessments are definitely a key part of that support, especially if you look at some of the benchmarking that goes on.

>> Any more online?

Okay.

Go ahead.

>> Thank you.

Enbridge.

Just on the CEPA comment.

So they did close their doors at the end of 2021.

It really was a -- I guess a lack of value seen from the members, kind of stepped away, so I don't know what the future is for that.

I can't really comment on that, but I wanted to give some insight for that. Maybe one comment and just building on what Pat said, we work really closely with Sydney. Through some of the operators that are on both sides of the border have very much incorporated some of the insights from some of these regulations and really building that out through our management system. And one thing I guess just a point I would make for folks to ponder on this and it ties into the culture. As you've seen, we've got really strong leadership on a lot of these things. So when you have your management meetings or review meetings, obviously you get visibility up to the Canadian side and an accountable officer or a senior officer in the organization. In a really strong culture, we should not be afraid to share our dirty laundry within our programs and how do we create visibility to the areas that we need improvement? Because when you have visibility to your senior officers, they can help get things done quicker because you create the visibility. So thinking about your metrics and really what we need to drive and work on and having that openness in reviews to talk about that and really create some good actions to move us forward and it is a journey. Thanks

>> Absolutely. I love to hear you say that. So I remember someone commenting you've all heard that what gets measured gets done, right? And I remember someone saying, well, when the board or the executives meet or the big company, do they not get a report out on a periodic basis on slips, trips and falls, their liabilities? Should they not also equally get a report out on where they are on key SMS, key performance indicators or on SMS? What are the executives and the leaders of the organization signalling to their folks what is important? What is important to the company? It's not all about profits because your profits can be damaging if you don't have a good SMS, right? So thank you for your comment.

>> Here and then go ahead Mark.

>> I'm Mark [indiscernible] with the blackSmith group

>> Just a comment for PHMSA. In your PHMSA plus, can I suggest to you that you look at the James Baker report following the [indiscernible] and Pat thank you for the downfall thing. I've gotta watch that.

Let me first of all, experience we did a number of audits on major integrated oil and gas operators, one following a very serious incident they had and the supervisor said what's

our safety culture. We get all these things on slips, trips and falls how could we have a big bang that took this refinery out for three months. So we looked at the safety culture and the most telling response was from one operator, who said our safety culture, yeah it's really strong, but I'll tell you this, when I lean over to look at a piece of pipe to measure the wall thickness on it, my company's more interested in whether I'm gonna crick my back than the measurement of that wall thickness. So you don't have a safety culture, that's been my experience. You have safety cultures and those are fractured by slips, trips and falls, by these lowfrequency high potential events, which are a real bugger to get your hands around and you also have it by region, by nations. You have all these safety cultures in an organization and it'll differ from top management down to bottom. So in all of this discussion, my own experience is don't think about [lost the feed]

>> You referred to we, I think that provided a lot of fodder for where we're headed on this, a lot of lessons learned there and other accidents as well.

Any other questions here in the audience? Elaine, online, still none?

We're gonna do a couple things well, first off, I have homework for you. Please take this back to your boss's bosses. They have to hear the story if they haven't, and hopefully they have, because this has been promoted at the highest levels of the trade associations and in our discussions with senior leaders we do it as well, but we've gotta ensure that there's a commitment at the highest levels within your organizations. So please carry the message back, please stay on the journey, don't lose faith. It's right that we do not need to regulate SMS right now. We're counting on you, so please continue the journey and let us know if there's anything we can help do. Right now we've been staying out of your way as you can see, as a regulator but we do ask about it. We're measured as Congress has done in how industry has adopted it. So please take it to heart and go and do great things with it. With that, I've said enough. We're gonna transition right? I think you're up and what we're gonna do is we're gonna omit the break and go straight into the last topic.

>> You guys ready? Yeah?

>> Thanks to Pat and Colin.

[Applause]

>> So we are skipping the break. I told you on Monday I thought we might end early and I'm doing my best to get you there. How many of you are going to catch a flight? Okay, somebody and the rest of you all in Houston? Well, you can go partying tonight.

So what I'm gonna talk to you about is some changes we've made about how we implement rules. So for years I don't mean four, I mean for many years PHMSA rolls out rules and they go out and the industry sees our inspectors show up, but I want to get to the point of how a rule where they come in and how you might have an opportunity to weigh in and how we look at our rulemaking. So jumping right in so this is very highlevel. I'm gonna talk about our statutory authority on laws and I didn't bring any lawyers with me. So if any of our lawyers are watching, you can't kick me under the table you're too far away. Regulations how we develop our internal training and then also guidance, which shows up as FAQ's that come out to the industry and then how we actually go out for our inspection and compliance. So where do baby regulations come from? We're gonna have this talk today, okay? I thought that was cute. The labor pains of okay, let's not get graphic here. We prefer the baby shows up under the cabbage leaves right? Did you notice I put the [indiscernible] I'm sure there's some other particularly lovely rules we could put in that packaged delivery. So a lot of folks wonder how does PHMSA comes up with these ideas? Some folks don't have any idea especially if you're a member of the public and you haven't dealt with a regulatory agency much. I'm just gonna go over it quickly now this isn't a complete list this is just a big bucket of where rules come from. So basically Congress gives us our authority to exist and I'm talking about PHMSA, and with that authority to exist, they give us authority over broad topics like pipeline safety or LNG safety or fill in the blanks, and it's limited. There are limits, but we have broad authority to provide safety oversight and as part of that is developing rules to oversee that safety. Now we have to follow something called the it's API, administrative procedures act and it basically says how government can promulgate rules and you have to go through a series of steps. You have to come up with a draft and you have to let the public comment on it for so many days and you have to get certain input and you have to get all these different types of reviews. I can't come up with a brilliant idea one day and go to Alan and say I think we should require bells on every pipeline release something silly. You have to go through this process. Part of that process is you have to do cost benefits. So that means even if I have a brilliant idea, if it doesn't make sense, if it's not feasible and it costs too much, it probably won't get through the process. But back to the bullet there, Congress gives us broad statutory authority to regulate. Most of our rules were originated way back in the '70s they've been tweaked here and there. We had an influx in the early 2000s with integrity it's basically been the same package that it's been for decades. So we have the ability to regulate and develop regulations. Often, Congress will say you PHMSA or actually it goes you, secretary of transportation will develop a rule to do X, and then the secretary of transportation says you know they're really talking to you PHMSA and then we roll out and go through the regulation. So two categories, broad authority where we can initiate rules based on our lessons learned and say hey, we need to develop a rulemaking, but more commonly it's Congress saying thou shall develop a rule. Now,

Congress may direct us to regulate an issue if I use this pointer on this little screen, you guys won't see it Congress may direct PHMSA to regulate an issue, like Congress may say you must issue a regulation for this or you can regulate in this area. That gives us broad statutory authority. Sometimes Congress does something that's even more challenging for operators. They create a selfexecuting mandate. Sometimes and this is why you have to pay attention to what Congress issues in these pipes act reauthorizations. They'll put a statement in there and the difference is when they want us to develop a regulation, they'll say the secretary of transportation shall implement rules for X. Sometimes Congress says pipeline operators shall do X. That's called a selfexecuting statute that means PHMSA doesn't have to do anything else. That's kind of like a regulation right there, you must abide by it, whatever Congress says. We usually follow up with a regulation to try to put boundaries on it, though.

So I've talked a little bit about a congressional directive, that's where Congress says thou shall create a rule. And then you've got this selfexecuting mandate, watch out for those those will bite you in the booty. I talked about we have broad safety authority if we see an emerging threat I'm gonna talk Turkey here we've talked about geologic hazards, we've talked about PIRs we've talked about emissions many of those could be fodder for regulations in this area. We have the authority to do that rulemaking. Have I lost people? Sorry people send questions and we have a question from the online folks. Sometimes people write in and say hey, PHMSA we think you should do a rule or amend a rule, create a rule. We do get those and we do act on those, we don't ignore them. Sometimes those come in from trade associations, sometimes those come in from a member of the public, it can come from anybody. And the other category that we often end up with rules originating from is when we get a recommendation from NTSB, NAPSRS our state partners. Our state partner's here. The office of inspector general or any other agency. They can say hey, PHMSA you need to take a look at this. Now I'll tell you if we get a recommendation from these folks, it carries a little more weight because they usually have a very sound basis for why we should move in a certain direction.

So this is kind of yeah, this is a little bit of a confusing chart. I couldn't find that Smart Art on PowerPoint that would really help me. So track with me. There's a concept, somebody says a new rule should come into play. We obtain a RIN number. What that is is a formal request by PHMSA to the Office of Management and Budget and it's where we say hey, guys, we need to make a new rule and we get a number assigned to it and the rulemaking will be tracked by that RIN number. We will gather input and sometimes we get the RIN before we start talking to people. We will gather input. The input we gather has to be provided publicly, so we'll create a docket where all the information goes. A lot of times, people get a little squirrely when we talk about ex parte. All ex parte does is it makes sure everybody has a voice, that we aren't just listening to one stakeholder group, that everybody can weigh in with an opinion or a thought. All right.

We'll draft some regulatory text that's usually internal. Sometimes we seek some help from our state partners or sometimes they're federal agencies. Hey, we've got this right, what do you think? We'll go through tortuous internal reviews, then we'll seek public input through a 30day notice or a 60day notice, but we'll always go out with a new rulemaking and say "What do you think?" And when you send us comments, we have to go through every single one of those, and that can be painful when you get two and three thousand comments. Just ask Jon Gayle about that sometime. And based on that, we do provide some changes and then it goes through more review and then we finally issue it. A lot of people say why does it take so long to issue a rule? It's because we have to go through a very strict formalized process. What I didn't put in there is some rules may require an environmental review, some may require us to coordinate with other agencies. Some may be controversial and so we have to have multiple discussions on it. It's not simple, but I will say the positive side to a slow rulemaking process is that we generally try not to do the ready shooting I'm in Texas I can use that kind of analogy down here so generally it's very thoughtful and sequential. So hopefully we get most of it right.

So a rule's rolled out this is what I really wanted to talk to you about. So what's next? This rule goes out, it's confusing as heck. Usually when we issue a new rule half of our organization goes I don't understand what this says, because you have a group that's doing the rule and the rest of the organization is saying I'm not really sure I read that the same way you do. So we have to figure out a way to develop internal consistency and then we've gotta figure out a way to make sure that we can communicate the intent of that regulation to people. An example came to mind we recently issued a rule and we made one little tweak, but by inadvertently removing one little word, we changed the entire context of the rule and threw a ton of people into a tailspin and we had to say we really didn't mean that. So look at the intent, we have to be very careful. So when we issue a rule, we go through great effort on communicating internally getting everybody aligned and then communicating externally. So this is a long text heavy slide, but I want to go through it for a reason. So this is our process I should pause for a moment and say previously up until about a year, our rulemaking implementation team was based out of our headquarters policy and programs group. We made a strategic decision to move it to field operations. So what's the difference between policy programs and field implementation? Policy and programs is where our rulemaking team is, it's where we have our state program team, it's where we have just a whole bunch of folks in that group. It's basically our headquarters group. Field implementation is inspectors, investigators, our accident team, it's the inspector standards team. So it kind of makes sense when you're looking at implementing a new rule for inspectors. So we created a new division and I'm gonna jump ahead for a second that new division is located in field ops. It's led by Rod Seeley and right now he has Chris [indiscernible] and Todd

[indiscernible] I'm sure you know them as well. They are managing a process when a new rule comes out, it comes to them and then they start developing a plan and they pull people across from all the different regions and this is what I want to talk about. So the first thing they do is they receive training on the rule. The implementation team, which can usually be 5 to 6, it could be larger and it includes our state program partners if they're gonna be implementing it. We pull representatives and across the organization, so we can synch up on exactly what was the intent of the rule, what are the boundaries of the rule, and then we train them intensely, so they know that rule forward and back. That group is tasked with creating guidance and FAQ's. When they're learning what the rule means they're given a rule and they read it and they say this does not make any sense. That is a classic indicator that probably the industry's not gonna understand it either, or there's gonna be aspects of the industry. So they're tasked with creating guidance and FAQ's for the industry but also for all other inspectors. You might consider this team the early initiators, the early adapters, they use a train the trainer philosophy to train all our inspectors. We have 180 inspectors on the federal side and about what, Jon? Somewhere around 500 state inspectors. So someone asked about consistency and lack thereof this is how we try to move towards consistency. That team will attend trade association meetings and conferences. A new rule comes out reach out to Rod if you want someone from our team to come out of course we can't send him out to a hundred different meetings, but if you have large gatherings where you want them to come out and talk about a rule, that's your goto people. They'll come out and speak this is our intent and this is how we intend to enforce it. They also develop the inspection protocols they look at the rule and they say the rule says thou shall and our question is did you, what's your data, what does the field look like when we do our field inspection. So it's this group that creates the inspection protocol. Then they go out and they conduct the initial compliance inspections. This is the team if you're an operator, you'll see a new rule, I've got six people, I'm located in and my operations are in Texas and Oklahoma and I've got these guys coming from Trenton New Jersey to come do our inspection and I've got one maybe from Alaska and maybe it's a state inspector. That's why it's diverse. The main purpose of these initial compliance inspections is to baseline and adjust. We run through the first year, we testdrive a lot of inspection approaches, trying to figure out what fits, does it achieve the intent, does it make sense and we listen to what you tell us. If we do an inspection and you think we've got it wrong or we're not looking the right way, we take that back and we adjust how we do our inspections. It's part of that PDCA it's in our best interest to get this right before we train 700 inspectors who do it the wrong way. We want to get it right and the way we get it right is getting feedback. It doesn't mean we'll always agree with the feedback, but sometimes we do and we have adjusted our inspections. We've also found things also, the team has found things where we get feedback that we thought was obvious and we find out it's not obvious to everybody else. So we have to go back and do more communication. Then

this group conducts formal training for all federal and state inspectors or we'll do a train the trainer approach where we go out and do mass training and have those people train on down because we have a lot of people to reach. A lot of times we'll have outreach seminars. Someone mentioned us last year doing the section 114 webinar we changed it later it's because we had to do it really fast. Congress said go out and do it and we didn't have any time to go through our full process so we had to whip something up and say this is where we're coming. In the ideal world we take more time trying to get it right. At this point once we start rolling this out we hand it to the regions and states for longterm inspections. At some point the implementation team is done, their job is done. They've implemented it and it might take a year or two years. It usually will last a full year, but once they hand it off to the regions for steady state implementation, that group will often weigh in on enforcement. They'll come in because they have the greatest expertise on the rule, they've had the experience of training on the rule, they've seen it in play with different operators and they know what works and what doesn't work and what's reasonable. So if an operator comes back and say I really didn't know, they can weigh in on capability and appropriateness. So that's what the team does overall in a nutshell. Again, just recapping, a new regulation gets issued, we create the implementation team and we train them, they develop inspection protocols and guidance and FAQ's as needed and we will develop FAQ's throughout that implementation time or even afterwards as we see the need and we roll those out and make them publicly available. We do team inspections, we adjust how we do our inspections and then we hand off to the regions. This, I have a recommendation for you. If you are asked if you want to volunteer for a new rule implementation inspection, I highly recommend you say, come on in, PHMSA. Why would I do that? Does anybody have an idea why I would suggest that? Come on, come on. You can't answer you're part of PHMSA. It's a freebie. Now, you don't always get a hundred percent scotfree as long as you're showing that you're really trying to comply and really working on it, these new inspections when we first go out, we're just trying to steady up our process and we're saying hey, you want a free test drive with us, give us some feedback to help us get better and unless you guys are totally blowing it out of the water, we're gonna be nice. Now if we find deliberate, intentional just total disregard of a regulation, we can't walk away, that's not our job. But if you say oh, well, the rule just got issued six months ago, we didn't realize, we're probably gonna work with you and find out if you didn't really realize and if you didn't, we're gonna give you some grace there. Rod asked me to say this, if you have any thoughts or input please reach out to him and if you have any ideas on how we can get it better to improve, he wants to hear it, but he also said I can't take 2,000 operators individually coming with multiple individuals from each operator. So if you have an affiliation group whether it be a trade association or whatever group and you say hey, we've looked at this rule and it'd be really helpful if you consider this input on enforcement, we welcome it, we definitely do.

I think okay. Any questions?

>> Thank you, Linda. This is Doug [indiscernible] I'm with Phillips 66 I'm encouraged to hear about this new implementation team under Rod's leadership because I think that'll help a lot in driving more consistency in inspections and knowledge across all of the regions. I'm interested to know in your rulemaking process how you get that kind of input before it becomes a final rule? Because I didn't hear that Rod's team has that opportunity before it gets published but the feds might have some misinterpretation and chances are many operators will have the same question.

>> Excellent question. So we're actually changing what we did let me back up. Previously when a rule was in formation our regulatory group would seek input from the regions and different folks and they would and from states and from different groups. They try to seek input internally from a very diverse group. Recently we have asked that our implementation team reps also sit in on that early rulemaking, so they can hear the conversation. Rod actually reached out a couple months ago and he said, I need to be part of these conversations on these new rules, I need to know where they're coming from, why are we doing this, what's the background that got us to these rules? So we have now looped him into all those discussions, so he'll be seeing the records and involved in the conversation.

>> Great thank you.

>> Back a couple of slides actually it's the slide where you talked about having the FAQ's. So you mentioned producing guidance documents, enforcement guidance, probably inspector guidance and also FAQ's and publishing those FAQ's. Is there any intent to proactively publish those other guidance documents as well? Being this is a new regulation that would be implemented, it seems like it would go even further to help inform those that are being regulated.

>> We have, we have done that. Our enforcement guidance is available and that is out there already, but for new rules sometimes it takes time to develop. Our intention is to make available what is appropriate. We can't there is a line though and Mike you know this, you used to walk this road. There's a line between sharing the intent and what we are looking for for compliance, and then there's the step over where we tell inspectors here's the red flags to look for. It's that part that we don't always share. I think you guys would understand why.

>> So you brought up the new valve rule. Congress in the 2011 PHMSA basically I'll use the term direct, you can push back on me but said do this and it took approximately 10 years to move from Congress saying do this to actually promulgating the rules. So I'll try to do this in an English polite way

>> You don't have to be polite. Why does it take so long?

>> Well, that's one, but under your PHMSA plus, are you looking at 10 years to implement something that Congress has directed? That's just too long.

>> That's a fair question. We got spanked pretty soundly and this is one of those things where I'd say it's not always the delays are not always our rulemaking folks' responsibility. Big picture things happen in the world and that's not an excuse, it's just a reality. Ten years is too long for a rule. If you look at our recent rules, I'll say this Tristan who's our deputy administrator I don't know what magic he works, but we've had some rules go through on hyperdrive. Those of you that have been around for a while because you've seen so many rules come out so fast it's like whoa how is he doing this. So the process remember I told you it's very painful, the internal reviews. What I didn't say is, rulemaking goes through internal inside of PHMSA and then it goes up to OST and then it may go over to OMB which is the White House and they make more changes and those take months sometimes. Sometimes they don't it just depends on who's doing the review. We also compete for resources with federal highway, federal aviation. So there's not dedicated work in DOT and OMB they're looking at EPA rules so it's not an excuse but it's a lot more complex. When we take ten years to issue a rule we get spanked by Congress. So we have huge incentives, we have huge incentives to get the rules out as quickly as we can. I thought we'd have no questions on this.

>> Kurt [indiscernible] with Embridge. You mentioned on the slide you certainly have the advisory committees and we're certainly a big proponent of them. They certainly represent the industry and they often get involved when the rules are already drafted. Certainly they have some advisement into what goes into the rules, but it's more around reviewing the draft language that's there. I was just wondering if PHMSA's ever considered having either a technical subcommittee of the advisory committees where all those members of the advisory committee can have some of the technical experts help draft those rules alongside PHMSA as part of that type of committee? And looking at your regulatory agenda that was basically talked about through this whole week, I think that would provide a lot of extra assistance for your teams to get the rules through quicker and come forward to the advisory committees in a way they've already had their input and it'd be easier to push them through. So has there been any consideration for something like that?

>> So yes and no. There has been a lot of discussion in previous years about using the advice of the advisory committees in different ways, on policies, floating ideas through them. However, setting up an advisory committee falls under FACA act which is the federal advisory committee act and there are very strict rules. If you'll notice, every advisory committee discussion gets docketed. It must be posted. It has to abide by all

that ex parte discussion, right? The other part of it is, if we create a working group, a FACA working group it has to abide by all of that.

>> Yeah I was gonna add, the role of the committee is to provide advice and specifically they develop what's called a report, but the report of the committee is the record of the meeting. But we have to really steer clear of and we had some issues with this a few years ago when we were probably deliberating and we were actually putting red text on the screen

>> And you got trouble.

>> And that was going too far. Our attorneys were not too pleased and it did bog the process down, we were into wordsmithing. So we've found the sweet spot seems to be to vote on concepts, but the devil's in the details and words matter. So we're gonna provide the advice from the secretary and we're hopeful that it comes back that we had intended during the committee meeting and the vote, but really it's very important to us but at the same time it's advice and the secretary doesn't have to adopt the advice, but we usually do pretty close. If we don't, we discuss in the preamble that we may have varied from how we voted. And it's been said and I think Andy Drake mentioned this and others, committees work really well and we rely on them, it's really helped us and regarding subcommittees, sure we've done that before, but it's up to the committee chair and it's their decision. We're just there to kind of help, we have staff that provide support that present the materials, but it's really a committee action and the committee's made up of the 15 members, five public, five industry and five government members. So it's their decision if they want to set up a subcommittee, that's fine. Just keep in mind it can make it take longer, there's a balance.

>> There's always a balance. Any other questions? Well, I'm gonna roll right into our wrapup. Thank you so much for being here. And how did you know I was doing it? That's pretty clever. Thank you all for being here. We've covered a lot of very intense targets in a very short amount of time. There were some strong messaging. I know you heard it I talked to some of you in the room and you said we heard. So we did that deliberate intense message. We'll talk more in 2023. We are opening the dialogue on a lot of these issues. The world is changing. We want to be riding at the top of that wave right? We want to be part of the change and help direct and see where things go. We don't want to have the wave crashing on us. And when I say we, I mean all stakeholders. Everybody gets a seat at the table, everybody gets to have their voice heard. In 2023, we will be coming out and having at least one, maybe multiple well, I know we're looking at right now two meetings, underground natural gas storage folks have said they need to have a meeting probably in the May, June time frame. And also some of these topics we've talked about this week, probably in the first quarter of 2023. We'll give you more

advanced notice I don't know if it'll be virtual or inperson or a combination of both. I will say that we had many more people online than we had in the room, but I think that was okay. I liked the dialogue and the inperson communication. Give us your feedback folks. We make decisions based on your feedback and input. Thank you to all the panelists and I wish you a happy holiday and safe travels home, wherever you may go. Thank you.

[Applause]