

UNITED STATES DEPARTMENT OF TRANSPORTATION  
PIPELINE AND HAZARDOUS MATERIAL SAFETY ADMINISTRATION

**Carbon Dioxide (CO<sub>2</sub>) Pipeline Safety Public Meeting**

Des Moines Marriott Downtown

700 Grand Ave

Des Moines, Iowa 50309

Wednesday May 31, 2023

DAY ONE

START TIME 8:03AM CDT

END TIME 5:18 CDT

## PROCEEDINGS 8:03AM CDT

MR. MAX KIEBA: Hello, everyone. First, we don't do this very often. I want to say first I would like to say thank you, sometimes, we don't, in today's society, we don't always say thanks. You took time to be here as well. I appreciate everyone, first I'm Max Kieba, you've probably seen my name on websites and e-mails. I do appreciate you from the public who have answered the phone call from a 202 area code. Some thought it was a political campaign ad, but was asking someone to speak folks I appreciate that. I know there are a number of things, many of you are trying to get some answers and understand you're frustrated by a number of things. I can and we'll do our best to answer what we can from at least from PHMSA's perspective. I can't guarantee we'll give you all of the answers that you might be looking for but what I can commit about my team we but we'll treat you with respect. And you came here looking for information and We'll try to give you more information. On behalf of me and the PHMSA team, we'll do our part to treat you with respect. With that, just a couple of safety things if we do need to evacuate. Best is to go out the doors and straight down and exit. I'll probably be following our friends in uniform, too. If there's something more substantial, if there was an emergency going on they'll help guide us. Restrooms if you haven't seen are over on the right, they're out the doors to the right. Well, there are a bunch on this floor and given the amount of people, we have restrooms on the floor immediately above and below. If possible, we did get a request, if possible, if you don't absolutely need your cell phone during the sessions, if you don't mind, turning them off to airplane mode. Life outside this doesn't end, I'll leave that up to you whether or not you need it or not. If there's any media in the room, the hotel has asked, if possible, well, they've asked to keep all of your activities within the room, they don't want broadcasting recording in the public area. If you don't mind, following with that. If you haven't met our public affairs individual Damon Hill, he's here for media questions or context. With that I'll go over the overview of the agenda. Sorry. I thought we had -- did we have a slide with the agenda up? If not, we'll go over it as well. So, first, we'll have opening remarks from our Deputy Administrator Tristan Brown. We're going to have a panel Alan Mayberry will also give

opening comments and then, a panel on who regulates what. There are questions about the Pipeline and who regulates what from a federal perspective and state perspective. We'll go over the that and have another panel on public perspectives and public advocates we have landowners, at least one landowner is willing to give their perspectives as well. We'll have a session on tribal government perspectives and then lunch and after lunch, we'll have a session on, a lot of folks are asking, what's the current state of R and D and other aspects and things like, what standards are out there for CO2 pipelines and how does the design materials construction actually work and geohazards. What's the potential of something happening with a geotechnical perspective. That will take us into today and tomorrow, we'll have other sessions. Comments, people have asked, how do I give comments and questions. If you would like to give a comment, we'll start stacking people up as they signed up. There will be Q&A in each panel, each session is about 45 minute to an hour and there will be Q&A specific to that panel. For instance, the first panel will be 9:15-10:00 and half hour for open comments and questions. We'll go through the list if people signed up. We understand some may not know if they have a comment until they hear the discussions, we'll go through that as well. We'll work through, throughout the day, after each panel, we have about 15-30 minute blocks for to give open questions and comments period. At the end of the day, we'll have an open hour for open comments and questions. If we get to the end of the day, roughly, 4:00-4:30 and we still have a list of people stay waiting to give questions and comments, we'll accommodate that. If your name hasn't been called, we'll still get to you. And it's -- we have a public docket that's open and you can comment on that any time. During the session, some people have commented and after the meeting as well. You can put on comments and attachments and things like that. That's it for opening run of the show. Alan, do you want to introduce Tristan?

MR. ALAN MAYBERRY: Hey, good morning, everyone. Thank you for being here. I would like to introduce my boss, Tristan Brown. Tristan is the Deputy Administrator of the Pipeline and Hazardous Materials Safety Administration. He's the head person of the agency. Without further adieu. Hopefully, the technology works, we'll be piping in Tristan from Washington, D.C. Tristan, over to you.

MR. TRISTAN BROWN: All right, this is one area of piping that Alan doesn't regulate. But, well, good morning from the nations capital. Welcome to the public meeting regarding the Pipeline and Hazardous Materials Safety Administration or PHMSA's regulation of carbon dioxide CO2 pipelines. I wanted to echo Max's thanks to all who registered to attend in person and joining virtually from around the globe. Thank you to the diverse group of panelists who will be presenting from interest groups, state and tribal governments and other Federal agencies. As well as industry and international regulators and for the first time, a panel directly representing the general public. Thank you to the dedicated team from PHMSA led by our agency's most senior civil service pipeline expert Alan Mayberry. Who had dedicated his career to public service and pipeline safety is in attendance to hear directly from you over the next few days. Along with the team of PHMSA experts, like Max from across our offices at PHMSA. As many of you know, this topic is of significant national and international importance both from safety and environmental standpoint. Which is why it remains a top priority from PHMSA to hear directly from you regarding the regulation of CO2 transportation. To help set the stage for today's discussion, in case you is intimately aware and familiar with the role of PHMSA. I'll provide a little overview of our agency, our mission as delineated by Congress simply our mission is to protect people and the environment by advancing the safe transportation of energy and other hazardous materials that are essential to our daily lives and specifically Congress has granted PHMSA the authority to establish regulations of pipeline safety from a design construction operations and maintenance. With an added requirement for any new proposed regulation, the expected benefits of the regulations exceed the expected costs. Today, we're here to examine the scope and justification for strengthening our existing the CO2 Pipeline regulations. Since the 70's, we have regulated CO2 pipelines and since then, we've more than regulated 5,000 miles of these lines. PHMSA is currently drafting a rulemaking to significantly strengthen the safety and environmental protections for CO2 transportation via pipeline. While not specifically mandated by Congress to do this rulemaking, given the passage of the bipartisan infrastructure law and the inflation reduction act over the past two years which both include major incentives, for Co2 related infrastructure we believe it's vitally important we establish stronger safety environmental protections for anticipated build out of carbon dioxide related infrastructure and

connected to other CO2 facilities. PHMSA has no permitting authority over the CO2 pipelines. We don't get to decide if they exist or not. This falls under the jurisdiction of individual states respecting to permitting. After a state permits a pipeline to be built, the project deployment is subject to PHMSA regulations as we work with the state partners to oversee the safety and the design of the construction and operations of the pipelines. PHMSA has a team of about 300 people and state partners who have additional teams that research develops and standards ensure compliance of what amounts to the worlds largest most sophisticated system of oil, gas and hazardous liquids systems and pipelines, amounting to nearly 3.4 million miles of pipeline across our nation as well a bunch of LNG facilities and underground natural storage tanks that we also regulate. This is about half of what the agency does, but that focuses on pipelines and the topic of today. This topic has been on my mind since joining PHMSA in 2021 and visiting with the victim of the 2020 pipeline failure that occurred in Satartia MS. In May of last year, I visited Satartia which is a small town about an hour outside of Jackson, Mississippi. I met with victims, health professionals, first responders and local officials and their first hand accounts to of how they were affected by that tragic incident. Over the last few years, PHMSA personnel were investigating and documenting and holding responsible the party involved. Issuing a notice of violation, civil penalty compliance order to the operator of the Pipeline involved in the incident and issuing an updated nationwide advisory bulletin to all operators and needs for operators to plan for and mitigate risks related to land movements and geohazards and initiate new research the key issues in the incident. Ultimately, we initiated new rulemaking across the board with the goal of strengthening the rules on liquid and gas transportation CO2 -- where the rules have failed to sufficiently to mitigate the safety and environmental threat. The focus on crafting a strong rule in the tremendous interest and involvement over the last few years, especially throughout the Midwest led to todays public meeting taking place in Iowa. This comes on the heels of PHMSA's Deputy Administrator for Field Operations Linda Daugherty's briefing the state legislature committee that recently considered the issued this at the state level. Deputy Administrator Dauherty She's in route and she'll be in attendance the event to hear from you. The broad interest in the rulemaking, it's uncommon for most agency's rulemakings, also inspiring from the public from the meeting's program and many other

informed perspectives that represent the public interest voices. The goal is to understand the breadth of risks from the public perspective and to learn a potential solutions and means by which may mitigate the risks. To be clear, if there's something we can do as an agency to mitigate risks, we'll pursue it within the letter of authorities granted by Congress. Not all can attend and not all can attend the two-day session. If you wish to contribute comments and questions, we have electronic means of commenting. As Max has mentioned We're recording and sharing the meeting online. After we conclude, we welcome your comments during and after the event. Finally, I wanted everyone in the room and joining online to be aware of the jurisdictions granted by Congress and the nuances of the jurisdictions aren't well known and we understand that. While PHMSA jurisdiction We're setting safety standards, we're aware that folks don't necessarily know and may have comments beyond the jurisdiction. We welcome them. We have other federal officials in attendance listening and we'll share the comments if they're outside of the jurisdiction. I personally look forward to watching the event and reviewing the comments to continue to juggle my day-to-day duties over the next two days in Washington. Thank you for your work and dedication to improving communities like yours, so with that I will give it over to Max or Alan? I look forward to hearing from everybody.

MR. MAX KIEBA: Thank you, Tristan. In line with the comments to apologies, all of the individuals online, we'll also work in comments here in person and we have a process in place for those online if you want to ask a question. I'll hand it over to Alan for, he's our Associate Administrator for Pipeline safety at PHMSA and our senior career official as well. Alan?

MR. ALAN MAYBERRY: Thank you, Max. Tristan, thank you. I appreciate the wind up for the meeting. Thank you, again, you'll hear that again, thank you for taking the time to be here today. It's important to do events like this to hear from our stakeholders. Thank you for taking the time. You know, we're here to seek your input and establish the public record on how to strengthen the safety standards for CO2 pipelines. As Deputy Administrator Tristan Brown said PHMSA oversees how pipeline companies design and operate pipelines that carry hazardous materials. We don't determine if they're built or permitted or sited, that's for others at the state and federal levels. They set the standards for safety and enforcing the standards through tools granted by Congress such as inspection and enforcement that we have that works across the

U.S. we do that through research and participation and voluntary standards setting committees through the establishment of federal Pipeline safety regulations, like this rule today through the public meeting. I recently returned from an international Pipeline technology conference in Berlin. PHMSA's pipeline safety regulations don't impact just here at home, but also abroad but serve as a model for the world. That adds to the impact of today's topic, focusing on regulating the transportation of CO<sub>2</sub> a key climate change agent but potential climate change solution. Now, I'm into my 41st year of working in the world of pipeline safety. I'm keenly aware that the work to regulate CO<sub>2</sub> pipelines has a potential for broad and historic impact. I think back over the career and the aftermath of the infamous tragic pipeline event in Bellingham Washington about 24 years ago, it took the lives of three young men. I made a personal commitment to do what's right. It's right here, in the heart of, I mean, my heart and the team that I'm here representing today. I've been honored for the past 17 years to work as a Pipeline safety leader and most recently as PHMSA's the safety senior career official. And yet, I'm one of 300 of the brightest and best minds in the world to bear what we oversee. We're primarily engineers by formal training with a passion for safety. We know that getting things right saves lives. You know, I'm proud of the entire team who helped organize one of the largest public meetings that the agency has hosted. That's the one today and tomorrow. Meetings like this are important to complement our safety policy development process and ensuring constructive and open dialogue with all stakeholders and the public and regulated industry government entities and technology providers. My paper isn't cooperating here. You know, that way, we ensure the most effective pipeline safety regulations possible. Now, PHMSA has started working on the current CO<sub>2</sub> regulation as Tristan referred and we'll expect to have this proposal published in the months ahead informed by this two day meeting. We post monthly updates on our progress and we'll continue to do so until we complete the rule. In closing, I wish to thank everyone for taking the time again to be here and tuning into the web cast. We look forward to ideas, comments that help strengthen the safety rules for CO<sub>2</sub> pipelines. I wanted to thank the incredible PHMSA staff that put together the meeting. I look forward to hearing the dialogue. Thanks Max, and I will turn it back to you.

MR. MAX KIEBA: Thanks, Alan. I think we'll transition to the first panel. If the individuals from who regulates what and how projects are reviewed, can you start coming up. While they are coming up I wanted to say, we've gotten questions on the meeting is recorded and web cast and the recording will be available on the public meeting site two weeks after the meeting. Yes, you can review it for different snippets as well. So, as these folks are coming up. When we formed the panel, a number of questions came up, who regulates what? I have the pipelines and some of the well sites coming near and on my property in some cases. We thought we would bring a number of federal agencies and a couple of our state folks as well to come up and explain more of how exactly the process plays out. We have -- each will go through more. Harold Winnie from our central region office based in Kansas City and would also oversee, well, depending on how the pipelines are assigned and many including Iowa and we do have existing CO2 Pipelines in North Dakota for awareness. We'll switch to our state folks, Jon Wolfgram Chair of the National Association of Pipeline Safety Representatives and is also the state program manager of Minnesota. Steve Giambrone from the Louisiana Pipeline Safety Program I know we're in Iowa, but there's activity nationwide, including in Louisiana. Steve will help give perspectives from the state. Then, we have Molly McEvoy from the Environmental Protection Agency, talking about the things like class six wells and she'll explain that and Kevin Dooley with the U.S. Department of Energy. We'll go through intros and perspectives, and we'll kick it off again to audience Q&A. Harold? Give some intro? You may need to hit the button. Yeah. You may need to hold it down.

MR.HAROLD WINNIE: Do I have to hold it? Okay. I'm Harold Winnie. I'm the project manager and general engineer in Kansas City for PHMSA. Good morning, everyone. it's good to be here. I just wanted to talk a little bit about PHMSA. As Alan said, We have no siting authority or permitting authority, PHMSA is the safety agency responsible for the safety of the pipeline. Our jurisdiction and regulatory authorities is over interstate and most intrastate hazard liquid pipelines or CO2 pipelines. If a CO2 or hazardous liquid pipeline is built and constructed and placed in service, PHMSA or the appropriate state program will be responsible for enforcing the federal regulations such as 49cfr 195 49cfr199 for drug testing and enforcement according to the part 190 or enforcement procedures. PHMSA will maintain regulatory pipelines from the



start of construction to testing startup suitable materials proper pitching and installation of the pipe for the protection of the pipe and hydrostatic pressure testing of the pipe before it's in service. Beyond construction, PHMSA looks at inspection of the maintenance in the field, also, the inspection of the written operation and maintenance plans. The protection and monitoring the pipe exposed to the atmosphere and testing the valves and periodic patrol and pipeline repair. We look at the integrity management program and understanding of the pipeline threats to the pipeline. Does the operator have that and assessment methods, inline inspection tools. Operator qualification procedures of individuals performing the tasks making sure they're qualified. Drug and alcohol testing and public awareness. Notifications and information according to the practice of 1162. The central region as Max said has two existing CO2 pipelines that we inspect, one in, it was built in about 2010 and the other was built in 1999. It's a 12-inch telescopes into 10-inch and goes in North Dakota into Canada. It's been around. PHMSA regulates and inspects and conducts the enforcement for the interstate Pipelines in most states. Some states have hazardous liquid certifications and some with intrastate agent inspection status. Individual states implement the damage prevention programs where anyone excavating must identify the landowners. The one call systems are each of the states. Thank you.

MR. MAX KIEBA: Thanks Harold. We will now go with Jon Wolfram plus the Chair of the National Pipeline Safety Representatives and as I mentioned Thanks, now, John, both John and Steven are two states that Harold talked about. But if a state has hazardous liquid certification within their state, they have certification to handle intrastate pipelines. Anything interstate falls back to PHMSA, thank you.

MR. JON WOLFRAM: Thanks, I'm the deputy director of the Minnesota of Pipeline safety and the chair of national association of Pipeline safety representatives. NAPSR. We're the pipeline safety representative folks and as NAPSR we represent the state regulatory agencies. There's 400 plus inspectors dedicated to ensure the safety of pipelines and the transportation of hazardous liquid and natural gases throughout the respected states. Harold highlighted what we regulated on the state level. As the state pipeline safety folks, we're looking at the operations, maintenance construction and design and emergency response of all of the pipelines. We may

look at natural gas pipelines that deliver natural gas cooking and heating and liquid pipelines. Max also mentioned that a number of the states are also working with PHMSA to inspect intrastate Pipelines as well. If you're newer to the safety world, we have the intrastate Pipelines, the state highways and local roads, and then, we have interstate Pipelines. It's like the interstate highway system. We have miles of pipes that cross from state to state, delivering the products. We inspect and regulate 2.8 million miles of hazardous liquid and natural gas in the states. There was a handout that provides the break down, we're focused on pipeline safety. It's also the routing and permitting. As some states, we have separate agencies doing the routing and permitting. Specific to the state of Minnesota, I'm representing the safety regulatory agency. We're looking at the operations maintenance and the construction of the lines. We have separate agencies involved in the routing and permitting of the lines. A little bit more on the Pipeline safety side. Each year, our state pipeline safety groups do annual certification with PHMSA to carry out the pipeline safety jurisdictions in the states. We go through and adopt the federal Pipeline safety regulations as our state regulations. That's the liquid regulations we'll talk about today. In the state and many other NAPS states, we're adopt those as the federal minimum safety standards for the states. The states do have options can adopt more stringent pipeline safety for intrastate, but not interstate Pipeline regulations. Thank you, glad to be here today.

MR. MAX KIEBA: And John touched on it. We've gotten questions on federal preemption-- we have, where it's true, if it's an interstate line, all of the projects in Iowa, there are no safety conditions that can be applied for interstate facilities. Those are federal preemption laws in place. We refer to the folks if siting and legal. We have, as we said, encouraged people, if you have pipeline safety questions and concerns, throw it on the public docket and we may be able to consider it for the minimum federal Pipeline safety regulations. We'll talk about that in the coming days, we've seen comments and questions on that. We have gotten questions, too, can PHMSA put out something formal. We'll take that back to consider. Jon, national Minnesota and we'll go to Louisiana. Steven?

MR. STEVE GIAMBRONE: All right. Thank you for that. I'm Steve Giambrone with the State of Louisiana. Jonathan mentioned the contact information sheet. There's a slight error on here and

perhaps it's someone in my shop provided wrong information. We have it listed that the public services commission in Louisiana handles siting. They regulate rates and services for petroleum and natural gas liquid lines, but not permitting and siting. I don't want phone calls about permitting and they don't know what you're talking about. I work for the office of conservation. We are a full state partner with PHMSA in the hazardous liquid program underground storage and we enforce the damage prevention laws in Louisiana. We have a program in place for determining the public convenience for the CO2 lines. Statutes were passed years ago to provide for the CO2 lines with the oil recovery projects and back in 2009, they added these certificates for the pipelines with the regulations in place for holding the public hearings. The hearings are for the CO2 lines serving EOR, but they're not a permit per se and they're not a siting per se. They're public hearings to determine the necessity of the pipeline. The permitting of pipelines or other types of lines are handled through various agencies throughout Louisiana. If you're in the coastal zone of Louisiana, you would go to the office of coastal management for a permit. That's one permit that's submitted. There may be a joint review, if it passes through a wetland area, you would get a permit from the CORP. If you're crossing the highway, the department of highway would review it. If it's the coastal zone, one permit with many agencies giving the input. Outside of that zone, you're going into the agencies to get permits. They'll look at different aspects of the line. The safety and the construction the maintenance and abandonment is handled by the office of conservation through our pipeline safety program. We have a 195 program and we adopt all the federal minimum standards and we have 23 agents statewide performing audits on the pipelines. We certify every year. And the program seems to work fairly well. We have a great partnership with PHMSA and appreciate their support. It's a partnership with the feds. We sometimes team up on audits with the federal government. We have two significant CO2 lines in Louisiana. They serve enhanced oil recovery projects. They're regulated by the feds. We don't have intrastate lines currently. Some are in the works. We don't inspect any CO2 lines in Louisiana. Thank you.

MR. MAX KIEBA: Thanks, Steven. I lost the mic, here. Scott? Also, in addition to hazardous liquids certifications for intrastate pipelines. Some states have interstate agent status to inspect the line. PHMSA takes the enforcement. When asked how many inspectors, 600 total. 200 on

the PHMSA side and 400 on the state side. Together, almost over 3.2 million miles. That's federal and state working together on that. We're going to take a step back. We'll look at how the projects happen. Each operator may or may do it differently. They want to see first where they'll store CO<sub>2</sub> in this case and injection wells. Typically, operators look at it multiple ways and we'll explain a little bit more and Molly will explain it more. She's one part of EPA.

MS. MOLLY MCEVOY: Hi, good morning, I'm Molly McEvoy and I'm a general engineer at EPA in Washington, D.C. I work in the understand ground injection control program. The UIC program in the office of water and ground water and drinking water. Within the scope of a project with the component, the program only regulates the geologic component or in other words, the CO<sub>2</sub> injection well part of the project. The program regulates the injection of fluids such as CO<sub>2</sub> and wastewater into the sub surface. We do this under the safe drinking water act and the main focus is the protection of under ground sources of drinking water. There are six classes of wells and class six is the well class for CO<sub>2</sub> injection for the purpose of geologic sequestration this occurs thousands of feet below the surface and below those underground sources of drinking water. And the regulations were started in 2010 and designed to address the unique risks associated with geologic sequestration. We'll get into the requirements in a second. I wanted to touch on who's responsible for the permits. Currently, EPA is responsible in all states, tribes and territories except for North Dakota and Wyoming. This is because of primacy. If the state has that, they have the ability to issue permits for the UIC wells and to enforce within the state. In order to receive that, the state must prove their classic regulations are stringent. Other states are in the process of applying, right now, it's only Wyoming and North Dakota. Back to the classic six requirements. You must meet technical financial and managerial classifications. Some examples are site characterization to ensure that the geology project area will contain the CO<sub>2</sub> and it must remain in the zone. Well construction requirements operating requirements and requirements for testing and monitoring, requirements for emergency planning and reporting requirements. The review of the application by the permitting authority entails multi disciplinary evaluation to determine if this includes the information is accurate and supports a risk-based determination that the project will not danger underground sources of drinking water. The permitting authority ensures that those requirements are in each class six permit

and issued on a per well basis. A draft of each permit is available for the public before a final permit is issued. The public can comment and view the draft permits. However, the EPA is encouraging additional two-way communication in the communities located in the vicinity of the project recognizing a need for communication to be happening much earlier in the process than the draft permit phase.

MR: MAX KIEBA: We are getting suggestion if you are listening to virtual I am multi tasking those kind of terminology and explains some of DOE

MR. KEVIN DOOLEY: I am Kevin Dooley and I am a carbon transport engineer DOE role we're not a regulator or a rule maker, but a technology and science innovator, we ensure the prosperity of the security of the American people from addressing energy environmental and nuclear challenges. The bipartisan infrastructure law enabled \$10 billion in potential funding for Carbon management projects from scaling from capture to transport and storage. We're looking at implementing the funding programs and deploying that for various levels of studies. We're here to help out and discuss the details and here to, you know, just listen. Thank you.

MR. MAX KIEBA: Great, thank you. We have some federal agencies not up here; we have questions on offshore pipe lines and we have relationships with department of interior. We have a workshop on offshore and when the department of interior takes over, things like that. A lot of questions come up. I know there are frustrations out there. There's no one federal agency that handles one, such as -- with that, I'll go to starting questions, if you have questions specific to the panel, start thinking about them. Harold, you talked, PHMSA engaged in the construction. Can you give insight on when that happens. Are there other notifications in place?

MR.HAROLD WINNIE: Federal regulations require notification 60 days before this. We have a bulletin that defines that. That starts when they start the pipe and easements. That's when an operator has to give the notification. So, the operators have already, the CO2 pipelines have given the notification and obtained the operator identification numbers and that kind of thing. We're aware of what's going on. We're working with them ahead of time on construction design, when the pipe is made and where it's made and we'll have the people at the factories

and the pipe mills observing what's being done and observe as best we can to inspect and make sure it's done properly and they follow procedures.

MR. MAX KIEBA: And maybe to John or Steven. We may not directly have the siting authority in the state, but there are others. Are you engaged on project reviews from your expertise for pipeline safety as the process comes along?

MR. STEVE GIAMBRONE: Sure, so, you know, we perform a number construction audits in Louisiana. In fact, 20% of the inspections are construction audits. Much is distribution as the folks are adding the services to the systems. When we have big projects for transmission lines, we'll often go in and, you know, weeks, or even a month ahead of time, we'll check the qualifications of the welders and the procedures and the qualifications of the personnel involved with construction, we'll look at the design of the pipe and make sure the plain is in align with the testing pressure to get to the meop. We do a lot to check the paperwork and of course, while they're out there, we're making regular visits, viewing construction and viewing, you know, when putting coating on the pipe and making sure they're following the procedures and everyone on the site is qualified to do the work.

MR. MAX KIEBA: Thank you. John, anything to add from your perspective from Minnesota?

MR. JON WOLFGRAM: I think there are a few pieces that back more to the delineation from the routing and permitting to the, you know, the pipeline safety regulatory side. Again, each state is going to have a specific statutory permitting and routing and siting process. Hopefully, from the state you're interested in, you can go through and -- and a little bit about the interaction we may have in our particular state -- we're talking more about what's the pipeline safety oversight look like. What do the regulations look like. After that? Maybe expand on the class six wells. Things like, each operator and maybe the pros and cons of primacy and why the state may go forward with that.

MR. MAX KIEBA: Lets go to Molly. And a class six well, is the

MS. MOLLY MCEVOY: Also need to demonstrate that they have the financial responsibility instruments in place in case they had to close the project unexpectedly. So, there's extensive

review that happens. We're also -- that's in the mix of the pace and it's -- that's why we're having a meeting here as well. We're seeing new things come down the pipe and what are the challenges and the new technologies and the safety things that we have to think about. I know we're talking about committees and the various groups and working amongst states and PHMSA to dig into these, what are the new regulations and standards and emergency response and things like that.

MR. MAX KIEBER Kevin touched on it with a little bit. Here's what the end goal is. What kind of mileage are we talking about. There are public documents out there. Does anyone have a feel what we're talking about as far as pipeline mileage? A rough ballpark?

MR. KEVIN DOOLEY: I can expand. I think we all know that the models are great and they're not perfect. There are assumptions built into this, like not going offshore in the Princeton study. We have two to three studies that look at 30-60,000 miles. That doesn't include, shipping, trucking and railroad. Potentially, if we look at an optimized system with all modes of transport, that mileage will drop down. CO2 transport is not just on the United States scale, but international scale. It's our job to look at news articles in the United States and external in the national community. We see there's a large amount of shipping desires from individuals and countries in Japan and Korea.

MR. MAX KIEBA: And the forecast they're aware of. Okay, we'll have some sessions late e, some questions have come up on the conversion of the service. Potentially converting that. We'll have panels talking about that. With that, I think I'll open it up. If anyone has questions to the panel and we're running ahead of schedule, we'll get to the public comments.

MR. MAX KIEBA: Yeah. I'm sorry, just for the record, and if you don't mind, introducing yourselves, where you're from.

MR. ALAN COGWELL: Is this on? 60,000 miles, I didn't know how that fit into this whole discussion?

MR. KEVIN DOOLEY: Yes, we're looking at gain to net zero, we're looking at trying to offset the amount of emissions that the United States produces and trying to move that to sequestration.

That's a feet of pipe that needs to go into the ground to be able to move the sources of CO2 to the sinks of CO2 and where we'll put it understand ground to store it indefinitely.

MR. ALAN COGWELL: Are you saying there's going to need to be 60,000 miles of CO2 pipeline in the United States to accomplish?

MR. KEVIN DOOLEY: Yes, that's what the estimates are from various institutions. Like I mentioned, these are estimates, but this is our pathway. I don't remember the quote of existing mileage of pipelines that we have, I believe that's in the –

MR. ALAN COGWELL: what size pipeline are we talking about? Transport or, you know, are we talking about a ten foot or 50-foot? What size pipeline are we talking about?

MR. KEVIN DOOLEY: I can't remember, I apologize, but I believe the most efficient way to transport CO2 is in liquid form.

MR. BRENT HOPP: I am Brent Hopp and I am a farmer in Emmitt County Iowa. When I was in high school, I learned that two things can't occupy the same space at the same time. Kevin is talking about the 60,000 miles of pipeline. We're talking about, between the two companies -- you may be talking about 600 million tons of carbon monoxide going down a hole every year.

Two hundred miles, pumping, approximately 30 million tons per year down into a hole, 60,000 miles, may be talking about 600 million tons of carbon dioxide down a hole. What is the process? How does it work? Can you explain it to us?

MS. MOLLY MCEVOY: Yes, a permit for a well would have a limit about the volume of CO2 to be injected. What rate it could be injected into the subsurface. The limit on that would be pretty much defined by the geology of what the geology would be able to take. Then, when CO2 is injected into the formation it will be injected into, there is displacement of fluids. For that reason, it is called the area of review, model. Understand what is happening above the injection zone, doesn't just include where the CO2 plume, it includes the pressure advance, it will displace in that formation. Extending outward where there would be a pressure influence. They need to monitor that for the life of the project as well.



MR. BRENT HOPP: If that fluid there is displaced, how can something not possibly get into the ground water?

MS.MOLLY MCEVOY: That would include all the area where the pressure would be influencing the fluid. The operator would need to demonstrate there is no possible endangerment of underground drinking water in the entire area of review. We have seen applicants that have five areas of miles of review. That is much larger than the CO2 plume they are injecting. In that five mile area radius, there are no faults, fractures or existing wells to potentially allow that existing fluid moving outward, to migrate upwards. The fluids in the formation, they need to look at that as well and monitor that.

MR. BRENT HOPP: If that gets out of hand. If something happens, then. Does the ground come up? Or does the water go somewhere? You know? If those things don't happen like they are supposed to happen?

MS. MOLLY MCEVOY: So, there is a requirement for emergency and remedial response planning. The classic requirements are designed to make sure that there is never a need to use the emergency response planning. To mitigate the risk of what you are talking about, is the purpose of the program. I have a lot of information that I could provide on all of us. If we don't have time, we can talk offline?

MR.BRENT HOPP: Every time I pour concrete, it cracks. I can't imagine there is any rock that doesn't have a crack in it. Thank you.

[ Applause ]

MR. MAX KIEBA: I can say some parts of DOT and other parts of EPA are talking about what is the potential emergency response plan for some of the large wells. You may be aware on the natural gas side, so those things are coming up. What could be the potential of a release of a well? How would those be mitigated? We don't have all the answers right now. Anyone online with a question or comment?

PHMSA READER: Thank you for sending great questions on line. Some of the questions do relate to some of the issues that would be addressed later in the meeting. There is three questions from D-lab. Are the CO2 pipeline joints and connections monitored after construction periodically? How often?

MR. MAX KIEBA: Sorry, was it joining?

PHMSA READER: Joints, and connections.

MR. STEVE GIAMBRONE: I am the pipeline division director. Both the state programs and PHMSA conduct routine audits of our operators. Part of the integrity management program, operators will run in-line inspection tools, and if you are not familiar with what I will call a smart pig, take an x-ray of the pipe. They are looking for defects in the pipe. They are going to know where those certainly on new construction, where all the joints in the wells a have been. They might perform pressure testing, in lieu of the running of in-line inspection tools. There are provisions in the code to monitor the integrity of the pipes, above and beyond the maintenance -- routine maintenance that you are continually doing throughout the year.

MR. HAROLD WINNIE: I was going to follow up. Just wanted to say that we start out with requiring the operator to develop welding procedures according to API11.04. They have to qualify the procedures for the type of material they are using. Once they have qualified those procedures, then they have to qualify every welder on the pipeline to those procedures, and prove the welder is qualified to those procedures. We move through that process. Then we have inspectors who periodically go out and show up on the job. Look at the welders. Make sure they are following procedures. They have procedures in their truck. And make sure they have the welding equipment set on the right amps and volts. Following the procedures that need to be followed in order to perform that. The process as far as the travel speed of the welder and the time between passes, all of those requirements, we have inspectors that do that periodically. Then we have requirements for the operator for the contractor to perform an examination of the wells. Most operators do 100% of the wells either with X-ray or phase to ray UT inspection to look at the welds and make sure. And depending on the welding procedures, sometimes it means not doing it when the weld is done, but 24 hours after, to

make sure you don't have cracking in the well. Observe it is done. We follow all of those procedures, and try to maintain that.

MS. ANNA RYAN: Anna Ryan. I am from here in Des Moines. I have a couple of questions about PHMSA regulatory authority. I will start with the easier one. It is my understanding that pipeline safety act prohibits PHMSA from applying new regulations for pipelines already in the ground. We are hearing from some companies that they will be abiding by any future regulations that PHMSA adopts. I was wondering about the discrepancy between what regulations would apply to existing pipelines.

MR. MAX KIEBA: I can take that. There are parts of the code called retroactivity. Part of it is based on our statute. If it is a new requirement that comes on, for instance, the design of this valve. It would apply to any new valve going forward. If you have all the valves, you have to replace it with the new valve. That is why some are coming up. There are other parts of the code that are retroactive. Operation of an existing line. Anything to add there?

MR. HAROLD WINNIE: No, I think you covered it.

MS. ANNA RYAN: My second question relates to the nature of the carbon dioxide that remains in the pipeline. In particular, the regulations define carbon dioxide a hazard only when it is 90% carbon dioxide for a critical state, it has to be greater than 88 degrees Fahrenheit. Minimum pressure of 1170. It will be below 88 Fahrenheit, and when it crosses state borders, is that an interstate hazardous liquid state pipeline?

MR. HAROLD WINNIE: Yes, it is. If it separates, and has a portion of it that is in a super critical state, it is regulated by PHMSA. We don't lose our authority or oversight on that pipeline.

MR. PAUL BLACKBURN: Thanks for being here today. Paul Blackburn. I have five things to run through. We talked about each for a while. Jurisdiction issues. The first one is whether PHMSA can consider safety in routing or have the authority to consider where a pipeline is routed. Should it go by a hospital or nursing home? The second thing is mitigation of abandoned pipelines. The industry saying states can't mitigate it after it has been abandoned. Also have jurisdiction issues capture facility boundaries, the companies are saying that PHMSA is saying, it starts at the fence. For capture facilities, pumps pressuring pipelines are also compressors and also dehydrators. Where is PHMSA going to draw the line in terms of internal capture facility?

The final thing. One more issue, is the boundary between PHMSA jurisdiction and the sequestration sites. You have 49 -- issue I think it may need to be addressed by reauthorization. That statute itself is a problem there. And the final thing the EPA may or may not know that IRS turns to a 45 tax credit requires verification. The EPA -- IRS turns to point the EPA verification plan for being 45 tax credit verifier. These tax credits go sideways have a lot of flaws in them and, there will be a lot of finger pointing. Thank you.

MR. MAX KIEBA: We can commit to take them into consideration. I don't think we can answer them on the spot. That will be taken into consideration. Any online?

PHMSA READER: Yes, Katherine Campbell. The navigator pipeline proposed for Illinois, runs through two seismic zones. New Madres and Wahbash. For both the pipeline and for sequestration, could earthquakes not rupture the pipeline and/or compromise the integrity of the sequestration? There is another question, followed up. How can that be predicted for the life of the pipeline and sequestration?

MR. MAX KIEBA: I don't know if anyone in this panel wants to address it? We will have a panel later that talks about geo-hazards. I think it is fair to say, there are standards in place for combined stresses, including the potential. Among others, there is a bulletin on how to look at geo-hazards.

MR. KEVIN DOOLEY: Pipeline design, does take into account there was an event in the pipeline was able to sustain its integrity. Even though there was movement in the pipeline. Pipelines lines could stress and strain.

MR. MAX KIEBA: Areas like California. Strain based design. He mentioned Alaska, things like areas with permafrost.

Things like that.

MS. MOLLY MCEVOY: I wanted to add one thing about seismicity. There is requirement in permitting to evaluate the seismic history of a site. Typically, it is recommended for monitoring of induced seismicity to make sure that will not cause an issue as well.

MS. JULIE JOHNSON: I am Julie Johnson, I am from Pocahontas County. We have a farm that has been in the family for 100 years. First of all, I want to state for anyone sitting on the panel, it would help us if you speak directly into the microphone when you are speaking. It is a little

bit hard to hear. If you get close up to it and speak directly into it. We would appreciate that. My question is for Molly. You stated that there are only certain geologic sites that are compatible with sequestration. Are there any geologic sites in Iowa that are compatible for hazardous CO2 sequestration?

MS. MOLLY MCEVOY: That is a good question. I don't know the answer to that question. I am sure there are people more familiar with the local geology than myself. I can take that question back. I don't have the answer to that right now.

MS. JULIE JOHNSON: If you could follow up we would appreciate that. Navigator CO2 Ventures has been saying, well, if we can't get a sequestration site in Illinois, maybe we will have a sequestration site in Iowa. I find that really bogus. I would like to know once and for all if there are spots available for sequestration in Iowa.

MR. GEORGE CRUMMINS: I am a George Crummins. Floyd County landowner. In the inflation reduction act, they allow 85 -- only 55 the navigator people say, they we use it for past or recovery. In Iowa today, there are three plants negotiating with a company that would put a unit at the plant, that will capture the CO2 and convert it to fuel. If we can get them to adopt that, there would be no need for the pipeline, et cetera.

MR. MAX KIEBA: George, is that, I want to make sure to address on the list here. Any online?

PHMSA READER: I am going to go back to Dee Lamb. The person had a few more questions. Are CO2 pipelines included in the one call system for diggers? Or do diggers have to check the public PHMSA pipeline website for our projects? How deep below the surface are CO2 pipelines constructed.

MR. MAX KIEBA: Want to take it from general regulations.

MR. HAROLD WINNIE: Yes, they are normally, the states require most large operators to be in the one call system. Federal code requires them to be part of the one call system. They are part of it. As far as depth, we have minimum depth requirements. Sometimes they can be different than that, greater than that. It it depends what the depth is of the pipeline.

MS. KIM HEGMAN: I am Kim Hegman from Polk County Iowa. There has been a lot of talk about oversight. One of the main problems is that in Iowa, the enforcement, and actual

punitive fee or some kind of monetary adjustment. Someone who hasn't followed the regulations or protocol. What federal department will oversee the enforcement of the rule?

MR. MAX KIEBA: I think you are talking about the interstate pipeline safety considerations.

MR. HAROLD WINNIE: Pipeline safety compliance would fall to PHSMA. Excavation, soil restoration -- something along those things falls to someone in your state or county.

MS. KIM HEGMAN: You would have the ability to fine and penalize and utilize what you put in place. And it would be more than a slap on the wrist?

MR. MAX KIEBA: There is it a fee structure put out. Some say it isn't adequate. I think it is a fair comment that has been made. In our regulations, and statues.

MS. KIM HEGMAN: That would be at the federal level. J

MR. ALAN MAYBERRY: Just to add to that, Alan Mayberry. A major part of what we do is inspection against the code. The federal code. If we see noncompliance, a common tool is an enforcement action. We have a variety of tools that Congress gave us to oversee the industry. One of those is the issuance of civil penalties for violations of the code. We have tools at our disposal as well. I assure you, we will use them where we need to use them. It is part of our history, last year in 2022. I say that because I tell you that is not our sole purpose for being. Our expectation, keeping that product in the pipe. If there are issues, we take that. We do have a variety of tools, and we will use them.

MR. MAX KIEBA: Thank you for the feedback, it sounds loud up here. It doesn't sound the same out there. Yes, please silence your cellphones if possible. Go ahead.

MS. MARY POWELL: Mary Powell, from Shelby County, Iowa. Can underground storage trigger an earthquake?

MS. MOLLY MCEVOY: In theory, underground injection could induce seismicity. There has been a lot of development in that science to make sure that does not happen. I mentioned it specifically in the class 6. Class 6 permitting, there is monitoring, to make sure that it doesn't happen. If there is any underground seismicity detected that would slow injection or stop injection or mitigate that before it ever becomes an earthquake that could be felt on the surface.

MS. MARY POWELL: It could potentially trigger an earthquake in the Midwest?

MS. MOLLY MCEVOY: Class 6, for UIC, we would want to prevent that from happening.

MS. MARY POWELL: Wanting to prevent, and preventing is two different things. My next question is, what studies have been done on the type of ground the pipes will be going through. Looking at the soil composition on the land, the amount freeze and thaw cycles, how it impacts the construction and stability of the life of the pipeline?

MR. KEVIN DOOLEY: That goes back to my original discussion on pipe studies. We expect operators to do geotechnical surveys to make sure they are capturing the soil behaviors and characteristics. That should be in a site survey, going through the different routing options, collecting that data, and into their selection and design of the pipeline.

MS. MARY POWELL: I understand the collection of the data. My question is, how long does that pipe last underground, in the type of soil that you are going through and the freeze and thaw cycles? When we are dealing with clay soil in Iowa, wetlands, it is different than running it through a state that is summer all the time or through a desert. Iowa soil is different. What studies have been done that shows, when this pipe is placed in soil like we have in the Midwest, how is that pipeline prevented from deteriorating, or how is it going to weaken that pipe, underground with a permanent easement on property?

MR. KEVIN DOOLEY: From my history of being in the industry in designing pipelines echoed through the Alaska permafrost regions you are designing a pipeline life to that design life. It is a case by case basis based on the modeling on the frost and freeze cycle will create the loads on the pipeline. It is up to the operator on a case by case, to design that pipeline. I don't know which one you are talking about specifically, the operator itself would have to ensure that it met that design line.

MS. MARY POWELL: Are there research studies that show, from PHMSA, if you are regulating safety, research that says, if this pipeline is put into the Iowa soil, what is its life? I am looking for research data, not project models.

MR. HAROLD WINNIE: I am not aware of any research studies that have been done. However, if you look at the history of pipelines there are a number of pipelines across the Midwest, Illinois, Michigan, North Dakota, Nebraska, that have been in place since the 1940s, 1950s still in place and still in operation. It has to do with how well an operator maintains their pipeline,

what they do to preserve that pipeline. There is not much impact from freeze and thaw, and the type of soil on it, if it is properly coated, inspected and maintained.

MS.MARY POWELL: Are those other lines that you refer to same PSI? The same amount of pressure going through the pipeline?

MR. HARLD WINNIE: There are a couple that are. There are some that aren't. The one in North Dakota was built in 1999 -- 2000 when it was put in service. It has 23 years of history. It has been in operation. It was designed and built properly. Maintained. There is anecdotal evidence out there that, freeze and thaw, no significant impact from that. You are looking at other pipelines operating at that pressure. The pipelines of the '40s and '50s were not designed to work at those pressures. They were designed for lower pressure lines.

MS. MARY POWELL: Has PHMSA set any regulations requiring setbacks safety for animals, for humans and distance between shut off valves?

MR. HAROLD WINNIE: We have depth, within 50 foot of a structure -- hazardous liquid structure as far as the safety setbacks, we don't regulate the setbacks on pipelines.

MS. MARY POWELL: Based on plume studies you have done to look at the environmental impact on life, humans, animals, environment?

MR. HAROLD WINNIE: No, we don't do environmental. We do some environmental impact, but not studies that I am aware of on that.

MR. MAX KIEBA: In the interest of others, asking for comments, we can have follow up. I got an e-mail. The media player may not be working. I just forwarded that.

MS. MOLLY MCEVOY: Can I clarify. Going back, to clarify my response. I wanted to convey that classic relations are designed to prevent any undue seismicity from occurring. I am not an expert on seismicity myself. I will take that question. Who at EPA would be better to address that. The classics are designed to prevent that, thanks.

MR. MAX KIEBA: As part of an agenda, we did open up a comment period. I will go down the list. When you have a break, where you can ask any of the panelists. In the interest to those who signed up, I want to give those a chance. Is Meredith here?

MS. MERIDETH MCKEON: That's me.



MR. MAX KIEBA: I was hoping it could work out that way. George will have an opportunity to comment.

MS. MEREDITY MCKEON: Before I read through my prepared comments. I think what you are hearing is the reliance on the companies to ensure safety is not a good policy. I think that is where you are hearing the concern. That is why you see strong attendance here and online. I think we are hoping as government agencies, you are able to step in. Set back distances. Relying on third-parties who have an investment in trying to get these pipelines in as fast as possible, that is not in the safety interest of the people affected. I guess I can save my other comments for later. I am Dr. Meredith McCain. I received my undergraduate from Iowa State. Both my medical degree and master's in public health from the University of Iowa. Most importantly, my family, our multi-generational farm where my parents have lived my entire life is now in the path of these pipelines. In fact, their house is a few hundred feet from these pipelines. I am outraged and disappointed this process did not start with safety. How have pipelines been mapped and informational meetings been held before safety standards specific to carbon pipelines been updated based on the unprecedented size, volumes pressures, of the recent pipelines that have been proposed. These pipelines are not running through remote terrain. They are running near towns, schools and home. My uncle died from asphyxiation from gas on the farm. 911 was called but when volunteer EMS services arrived, they realized they were unequipped. By the time they had additional resources, they were too late for him. It is established that rural Iowans are more likely to be uninsured, they are more likely to have more health comorbidities, the affected person is more likely to have heart disease, and COPD. In addition to this inhalation injury, making recovery significantly more challenging. They live further away from higher levels of care, ICUs, ERs, capable of handling multiple life-threatening injuries at once. Higher mortality rates than urban areas and lower life expectancy. And routing hazardous pipelines around their homes and neighbors is an avoidable disparity. In medicine, we make a pledge to the Hippocratic oath, first, do no harm. The patient should be no worse off than before we started to intervene. I ask you to halt the pipeline approval process in the Midwest, including asking affected landowners to sign uninformed easements until safety data is available, understood, implemented into the

discussion. I hope you all of involved with these regulations walk away remembering first, do no harm. Because the rural people in communities were here long before carbon pipelines deserve that. Thank you.

MR. MAX KIEBA: I have Jess on the list. Lesson learned. Front end questions on the moderator side. We will work on that.

MS. JESSICA MAZOUR: My name is Jessica Mazour. This state is my home, and I will do anything to protect it. Thank you for holding this meeting, a lot of people care about this. We have major concerns. I wanted to bring you up to speed on what has happened thus far in terms of safety. It helps to paint why people are so concerned. Last year, the Iowa utilities board ordered Summit, Navigator and Wolf to file three safety documents. Modeling, emergency response plan and risk assessment. Summit, Navigator and Wolf are fighting that. They took the IUB to court. That is still an outstanding issue, hasn't had a judge's ruling. We know they are fighting not to share safety information with us. We know that county supervisors and local EMS have been asking for similar documents so they can prepare themselves. Nothing. They are not sharing it with anyone here in Iowa. Since there are no setbacks, and rule that need to be updated. Setbacks from homes, schools, and livestock facilities and more. Right now, pipeline officials are bullying any County and local government trying to protect themselves. Anyone who tries to protect themselves, they sue. We know CO2 is dangerous. It is heavier than air. It travels through low lying areas. It is an asphyxiant and a toxicant. We need to have the ability to protect ourselves. There is three things we need from PHMSA. We know you can't issue a moratorium, but you could direct states that it would be good idea to slow down, pause and put a moratorium on the processes. Especially because these companies are trying to get approval before you are done writing the rules so they don't have to abide by them. So we need you to direct state, it is a good idea to hold off. Second, we need clear guidance on preemption issues. We need you to say what counties and states, can and cannot do. My question is related to that, would be, can counties pass setback zoning ordinances? The third thing we want from PHMSA we want the strongest rules possible. These are homes, family, communities, we don't deserve to have these dangerous pipelines that can

kill us next to our homes, so that these private companies can get wealthier than they already are. So the question would be can counties pass local zoning ordinances?

[ Applause ]

MR. MAX KIEBA: Folks are not aware --

MR. STEVE GRIAMBRONE: I will try to speak to that quick. As far as local ordinances are concerned, you can enforce them. If they are not legal, it is up to those companies to prove in court, these conflict with state, federal laws. Generally, I don't want to speak out of turn here -- generally, you know, you can say for the states, we can pass requirements that are more stringent as long as they don't interfere with complying with other regulations within the code. Interfere with other operations within the code. I don't know why a setback or some kind of zoning, I don't see how it would interfere with a company pipeline safety regulation. As long as it doesn't, I don't see where it would be an issue.

MR. MAX KIEBA: I was going to add, hasn't it been mentioned yet, years ago there was an effort, the Plan Informing Piping Alliance PIPA. If you do a search, even though we don't do citing, we did give suggestions, and things to consider at a local level. I will say, I don't believe it went as far as into CO2 considerations. It came up in the December meetings, breathe new life into PIPA. Hopefully, there is guidance out there. I can't say for sure it is directly the CO2. I'm sorry. I am getting, again, speakers, if you don't mind, try to speak directly into the mike. We are hearing on the virtual side, and the folks out there are doing as much to pump it up. Speak directly into the mike. I know it sounds loud out there. A media player issue. We tried to research it on this side, it may be a fire wall issue on your end, too. Let's put George up, the first person that showed up early, I want to say, 7:00, maybe earlier.

MR. GEORGE: I got my chores done, too. I have been, well, I have been -- I worked in Africa and Brazil. I would like to talk to safety. Thank you so much for coming and addressing this issue, which is critical. At the public meetings, we have had what are required by the pipeline companies, supervisors working with setbacks, and local governments, that sort of thing. They have given incomplete, in some cases inaccurate answers. One of the environmental reps for one of the pipeline companies said that CO2 is all around us, we breathe it every day, what is the problem? The Satartia incident was brought up. They mentioned it was hydrogen sulfide

causing the problem, not the CO<sub>2</sub>, and nobody was killed. There were no victims. If you go online, and check the Cameroon disaster in West Africa, there were 1,746 people killed, 3,500 head of livestock, and the plume travelled at 60 miles an hour, and suffocated people 16 miles away. A study of a plume is important. The other thing about safety, every one of the ethanol plants have above ground equipment to capture, store and pressurize 2,100 PSI. Whatever you put in the pipeline, there is videos of above-ground plumes, as well. That pressure is quick. Most of our plants are supported by volunteer fire departments and emergency crews, and the promise of the pipeline companies they will be equipped and trained. If I was a volunteer, I know there is a leak, I will be busy. Thanks for coming. Put some teeth in this thing.

MR. MAX KIEBA: The incident in Africa, it was a natural phenomenon. People, and a lot of cattle. I heard, at least, questions, personal safety, and what is this going to do to my soils, is it going to affect my crops, my cattle, other livestock? Thanks, George. Emma Schmitt? Laurie Smith? Again, please speak into the mike, if you don't mind.

MS. LORI SMITH: Hello, my name is Lori Smith, in Emmitt County. My husband and I own 350 acres, that pipeline wants to plow up the middle of. Half the width of this land was purchased by my grandparents in 1941. I am fighting to keep it in the pristine and prime condition that it is today. That is not why we are here today. We are here today about safety. My son lives approximately 500 feet from the proposed pipeline. His family of five. My daughter lives approximately one half mile from the proposed navigator pipeline. I, myself, live four miles from the proposed pipeline. I am not too concerned with my safety. My kids, I am. You know, we have two local schools that I know are in close proximity to the proposed pipeline. We need to keep their safety in mind. What we talked about earlier, we live in Iowa, there is great variation in temperature. We go through the freeze and thaw cycle. Is this pipe going to be able to withstand that? It is doubtful. There are going to be ruptures. I hear that it is probably going to be a zipper rupture. How many feet is that going to be? Or miles? These pipelines are carrying highly pressurized CO<sub>2</sub>. I am just pleading, as Harold said, there is a 50 foot setback presently in the rules. I guess I am thinking that should be more like miles. At least one mile. I am pleading that it PHMSA rules are more strict to protect the citizens of the United States. Thank you.

MR. MAX KIEBA: That is where I understand some of the confusion. What is a setback from a site? We will hear about the tomorrow. In case a release. Individual damage, we are looking at, what would be the radius of CO<sub>2</sub>? If anyone hasn't seen the public incident report, we were talking Satartia -- that was a mile, at least a mile. Other things that have to do on public awareness, things like that if you read the report, that is one of the things acknowledged. The dispersion modelling that was done. It missed Satartia as being potentially impacted. George had a lot of good questions about dispersion. Emergency response will be on for tomorrow. What do they need? Some of those aspects. What we might do, too, we think we have panels lined up. We think we know what most of the concerns are. As more comments come in, if we don't feel it is being addressed in some panels, we may work some in on the fly. Robert Randall.

MR. ROBERT RANDALL: Robert Randall from a small town. From Atkinson, Nebraska, population, slightly over 1,200, 300 miles from here. The Summit carbon pipeline is scheduled to start in the ethanol plant in the most western location in our vicinity. Before it is joined by the collaterals on the way to Sioux City. The ethanol plant is within the city limits of our small town. Likewise, the ambulance bay, and the fire department is nearby. Our volunteer medical first responders have had no training in carbon incidents. With the experience of the Mississippi accident, it seems that our town people would be essentially vulnerable in a similar situation. We would ask that you give increased attention for reducing risk to those of us in this position. Please get the safety rules in place quickly. Thank you.

MR. MAX KIEBA: Sherry Web. I can't read the writing.

MS. SHERRI WEBB: I went to country school. You had to have good handwriting.

MR. MAX KIEBA: My son asked, why don't we learn cursive? I can't answer that.

MS. SHERRI WEBB: Thank you for being here in Des Moines. It is nice to be listened to, rather than talked at. I am Sherry Web, I live near Woodvine, Iowa. Our family farm is in Shelby County. 123 years in our family. It is a century farm. It is more than land to us. It is blood, sweat and tears. My grandparents farmed it. My dad farmed it. And we have a renter now that farms it. It is more than just land for us. It may seem we are overreacting to the possible scenarios. But the pipeline companies have not supplied us with answers. They have not

supplied us with information. They have not complied with requests from the IUB or anyone else. It is not just the boy scouts that have to be ready. Farmers are always ready for anything and everything. We have extremes in temperatures. It will be 100 degrees in another couple of weeks. Eight months later, 25 below zero. Right now, and two years ago, we had cracks in our ground that were two feet deep and three feet deep. We are in the middle of a drought right now. It never rains in Iowa. 2010, major flooding. 2019, major flooding. Satartia with the heavy rain, that could easily happen here. The frost line is 48 to 60 inches deep in some areas. 60, my brother drills wells, he knows where we are sitting at. How does CO2 remain critical, when the ground temperature is way below 32 degrees. Valves, receivers, launchers, above ground equipment. Large field equipment. Are they going to come out and make sure those are mowed so you can see them? Are they going to check on this stuff regularly? Whenever they feel like it? What about a tornado? What happens when it takes out a valve? 20 miles apart. Does that pipeline unzip for the entire 20 miles? Where are they going to be stationed to turn it off? If WIFI is down or the possibility that will be done. Railroad crossings. They are going to go under the railroad, if you have ever sat and waited on a train, you know the ground vibrates. Under the roads, you have heavy equipment. Iowa has unbelievable weight limits on heavy equipment. It is way above what it should be. Our infrastructure will be in shambles by the time this is over with. It will something happens rupturing the soil. I could see it bounce with the e-mails, it was being forwarded back and forth. The Iowa State professor said 70% the earth worms will be dead. Any living thing in the soil will be dead. The vegetation will die. And soil is a living thing. It will be years before it is productive again. Rolling hills, confinement at the bottom of the hill. Silver Creek at the bottom of the creek. CO2 stays low. So, I am a little unorganized this morning. We are in a very rural area. Any kind of incident during a blizzard, who is going to get out there? This little road our land is on is a one-way road. You are not going to have a container go out in front of you because a CO2 pipeline is out there. It floods out there. Hazmat is --I am not sure, some people say, I will be busy. George said, I am going to be busy today, I am not going to go out there. With some of the issues that you brought up today, is FERC a consideration? For the pipeline, I can't believe 60,000 miles of pipe. That is awful. Plain awful. The less the yield will be on our farmland. There will be a continued yield,

less, it will be less. Our food supply will be affected. Our feed supply will be affected. When you get down to it, our ethanol issues will be affected, too. If you don't have the corn to give to them. With new technology, carbon capture will be obsolete soon. There is a lot of new stuff out there now. My final question is, because of the setbacks of liquid or super critical CO<sub>2</sub>, should they vary depending on topography? If your land is high and everything is down low, should setbacks be tested on that? My last comment is, who will be tasked to tell parents their bus load of children died because there is no color or odor to CO<sub>2</sub>? Who will be asked to tell the child that their pony died because the rupture happened. Who will tell the family, grandpa and grandson were out hunting and they found them dead? Thank you.

MR. MAX KIEBA: We did have a portion scheduled to give a break. If the panelists restoring break. I will be available on the side as well. And we will give a full 15-minute break. Come back at 10:50. Central time. Those, wherever you are in the world. 10:50 central.

[ 15-minute break ]

MS. MARY I am pleased to be here to listen to you all. Take your concerns and try to answer as many questions as we have.

I'm fortunate to have the panel with me, we will have the group talk about their perspective on carbon dioxide transportation, pipelines. And to start off, I wanted to introduce the panel that we have. And then, we will go through and have everybody give their comments, first, Amanda Mackay with the Pipeline Safety Trust. Welcome. Then we have Stephen, he works as the senior attorney, for the Fossil Economy Program for the Center of Environmental Law. And then, he and his teamwork at the Nexus of Human Rights, Legal and Financial Research Policy and Campaign. And after that Carolyn, she is a lawyer and archaeologist. Her bio, she has she considers future generations to be her clients. Last, we have our landowner, Cindy Hansen, a lifelong resident of Iowa, native of Iowa, I appreciate your comment, when you say, a farmer's daughter, raised on the farm value where she learned the value of family, land, nature, livestock, and the environment. Also, over the last two years, she has learned more about CO<sub>2</sub> than she cared to learn. I appreciate everybody getting up here and talking about their perspectives on carbon dioxide.

MS. AMANDA MCKAY: Thank you, I am Amanda Mackay, the program manager for the Pipeline Safety Trust. We are a nonprofit watch dog organization based out of Bellingham, Washington. We are based out of Bellingham, Washington, because of the tragedy that Allen mentioned in his opening remarks. There was a pipeline that ruptured in our community. It exploded and killed three boys. I live in Bellingham, Washington, my grandparents lived there my entire life. It is a remembrance we have as a community every day. That is part of the reason why I work for the Pipeline Safety Trust, to ensure that tragedies like that never happen. You know, we as an organization didn't know a lot about CO2 pipelines until a couple of years ago. Like many other landowners and others here today. It began with the rupture in Satartia Mississippi, that sent 45 people to the hospital. And the article by Dan Zegart that woke us up to the concerns. In 2022, the Pipeline Safety Trust commissioned a report by an independent pipeline safety engineer that highlighted some of the key concerns with CO2 pipelines. It highlighted the technical risks that many in the room are aware of. That CO2 is odorless, colorless, heavier than air and asphyxiant. And highlighted the regulatory gaps within PHMSA within the regulations. And the new sources of CO2, bringing contaminants into the pipeline, and the potential to cause corrosion. There will be a panel on dispersion, during the event. The fact that the dispersion modelling was not sufficient to encompass the town. And existing pipelines converted to CO2 service, all of the technical issues around that as well. The Pipeline Safety Trust is looking into the regulatory process and the limitations there. Currently, there is no congressional mandate, PHMSA put out they are working on updating the CO2 regulations, but that is difficult to do without a congressional mandate. That could take years. As we will talk about more, you know, these pipelines are proposed now. We need a rule making to be expedited. There are statutory limitations, and it has been mentioned a bit, section 6104 clause, that limits the design and construction requirements to new pipelines, and not applying to existing pipelines in the ground. And the Pipeline Safety Trust recently sent a letter to the head of the DOT, to ensure that all phases of CO2 are regulated including liquid and gas. So, I think we are going to get into a bit of the technical aspects around the public concerns of CO2 pipelines. I want to touch on the routing and citing concerns we heard about in the last panel. Currently, there is no federal agency tasked with the routing and citing of the pipelines. It is left



to state authorities who may not have the resources or expertise to ensure the safety measures are in place to protect the community. And I think that when we were talking about a setback discussion. There are no setback requirements, you are only talking about different levels of safety measures required within certain population areas. The plume dispersion modelling has the potential to really only change the safety measures. That is something we need to take into consideration. I look forward to hearing more about that in some of the other panels in the later discussions. Thank you.

MR. STEVEN FEIT: Thank you so much. It is an honor and privilege to be here. I am a senior attorney and research manager for the Center for International and environmental Law. Use the power of the law to protect the environment, promote human rights and and ensure an a just society. I want to zoom out and talk about three things. One, why we are talking about CO2 pipelines in the first place? Two. Why this build out is different. And third, how the two elements exacerbate the risks of the build out. So, the reason we are talking about CO2 pipelines is because of CCS. Carbon dioxide pipelines come directly downstream from carbon capture. We are seeing a massive, global push for the wide scale deployment of carbon capture and storage. This is the way for fossil fuels to justify continued production and use in the 21st century, in era of climate action. You can have the energy of fossil fuels without the green house gas emissions. The capture part, extra energy use, the increased emissions, the pollutants at the source. Cost -- et cetera. There is a massive, global push for the roll-out of carbon capture as part of the justification of the continuation of the fossil economy. We see this in international negotiations at the United Nations framework convention on climate change, where the Paris Agreement was negotiated. The the organization for economic cooperation and development. You see carve-outs, financing for fossil fuels is limited, but abated fossil fuels are still kept in. Abated is a word to mean with CCS. Then, there is the oil production component of CCS, which is EOR. As we heard, multiple times today, the vast majority of captured carbon has been used for advanced recovery and production. The limiting factor for EOR, system affordable CO2. The large part is the push for carbon capture and storage, is about securing the supplies of carbon dioxide. All of that is the wind at the sails for the push for carbon dioxide pipelines, that is not just happening out of nowhere. The second

thing I want to talk about, the way in which what is being proposed is different in scale and scope to what exists now. We heard about the plans to build 90,000 miles or more of pipelines. The whole interstate highway system is 47,000 miles. That gives you a sense of how much pipeline we are talking about. In that sense, it is difficult in scale. It is bigger than what we have seen before. It is really different in kind. That is important, too. The majority of CCS done to date has been at gas separation or gas processing facilities. You drill for natural gas, you have to separate out the CO<sub>2</sub> so you can market the gas to sell. Gas separation is among the better use cases for this kind of technique, in terms of getting pure, high-quality reams of CO<sub>2</sub>. Compared to for example, industrial facilities, or the electricity power plants. New wave of proposed CCS projects, fertilizer, plants, a proposed rule on power plants, and efforts to build out carbon capture in the power sector. When we are talking about the sources of CO<sub>2</sub>, we are talking about a that will be going into the pipelines. Most of the CCS done to date, is single source. You look at light creek, Slightner and Slovic which are projects off the coast of Norway. Boundary Dam and Petronova. Individual facilities that feed into pipelines that go to EOR fields or some cases, storage. The proposals now are for as we heard in the previous panel, a root and hub and spoke model, where multiple sources feed in CO<sub>2</sub> from differing kinds of facilities, at different purities, with different amounts of water and impurities, that raises the level by an order of magnitude. Finally, it is worth noting, since the majority of CO<sub>2</sub>, CCS has been used for COR to date, there will be a massive expansion in the amount of geologic storage proposed. Geologic storage proposed. We saw places off Norway, the challenges of sub-C storage. I would note the push to offshore. That adds sea water to the mix. The complications, and the risk of corrosion, managing any blowouts or issues. We saw what happened with Deep Water Horizon and we know how difficult it is to monitor existing gas wells, when they occur in deep water environments. So, when you take all of that together, we have this massive, global effort to deploy CCS at scale. On a scale never been done before. At a level of complexity, we have never seen. Opens up the door to impurities, and water in the CO<sub>2</sub> stream, and all sorts of challenges on regulatory capacity and oversight, all of the nuts and bolts we gave to do to make sure they operate safely. What we are facing is a new risk. And needs to be treated as such. Not just more of what we already have. Thank you.

[ Applause ]

MS. CAROLYN RAFFENSPERGER: Good morning. First, I want to thank PHMSA for holding the meeting. It was brave of you. And responsive to the letters that we wrote. I want to thank you. I want to thank the Pipeline Safety Trust and the other organizations that joined in the effort to call for a public meeting. I want to thank those of you who represent the public. We are what democracy is supposed to be doing. The government agency is to protect the public good. The commonwealth. Our corresponding duty is to give or withhold our consent. Our free, prior, and informed consent. What you heard was a lot of informed people today. I think you heard people, and learned a lot about the subject, the accident in Satartia and accidents in other countries. You heard about how regulations are made. What is missing, you heard a lot. They are informed. So, we are fulfilling our responsibility to give or withhold our consent. Consent is the basis of governance. It is the panelists sitting before you. We are the public. No conflicts of interest. We have no conflicts of interest. We are your clients. Department of Energy, Environmental Protection Agency, PHMSA, EPA, all of it. We are your clients. Not so much the pipeline industry. We are your constituency. The technical complexities pointing out the vast network proposed. That is on trial in the Midwest. And in places like Louisiana and the gulf. It is on trial for a good reason. What I want to add what Steven said. The regulatory complexity and the gaps that are inherent in a system that was thrown at us, in part through the reduction act that developed over the last -- 2007, 2008, 2010. So, what we have is that EPA regulates a small piece of the deep well injection, how much CO<sub>2</sub> goes in there, with no relationship to the IRS. You have the Department of the Interior, their responsibility for public lands, waters, things like that. PHMSA doesn't have a functional rule for what is proposed. The Army Corps of Engineers, is using a brand new permitting system for permitting CO<sub>2</sub> Pipelines. Nationwide permit 58, they have been using Nationwide permit 12. They have a permit system they have not tried out on CO<sub>2</sub> pipelines. It was not designed for something this vast. With this incredible risk. CO<sub>2</sub> is not your old grandparent's pipeline. The 1940s and 1950s. The CO<sub>2</sub> pipeline poses a unique hazard. If the CO<sub>2</sub> pipeline poses a unique risk, in how lethal it is. This is a material that can kill you. It can kill the plants around you, the living organisms deep below the earth in the deep sea. There is an entire ecosystem, where they want to store that CO<sub>2</sub>,

that can sequestration. We are going to minimize the pollution of drinking water. That is the law that governs class 6 wells. They haven't considered there is a living ecosystem down below the earth's surface. The lack of any kind of integration at the federal level, the piece meal at the state level, you heard the two have privacy, over Class 6 wells. So other states like Louisiana are trying to get it. We have a vast system of carbon capture, and the pipelines, and enhanced oil recovery. We don't even have a hazardous waste manifest that can keep track of how much CO2 was collected, and how many ends in the pipeline and the sequestration or OOR. There is nothing to keep track of the CO2. We know PHMSA's data, we have leaks and incidents reports. You will hear more about that tomorrow, I believe. I can name names. Endless pipelines, Satartia alone. They will have leaks at the valves, and that vast infrastructure. Nobody is keeping track how much is collected or ends up in another place. They will get a tax credit for this. There is no piece meal regulations. I wanted to talk about the two phases of this. One is the construction phase. Those of you sitting in the room, many wearing red, by the way -- the universal sign for stop -- look both directions. We are asking you to do 360 degrees. Look above and below before you go forward. The construction phase poses unique struggles, environmentally, not considered in regulations. The Minnesota environmental impact statement for Enbridge line 3, included the risk of sex trafficking women and children, especially during construction. PHMSA, if you can mandate drug and alcohol testing, you can prohibit companies from hiring sex offenders and convicted people who have been convicted of domestic violence, as pipeline workers that are coming into the states. You can require they not allow those people to be to the crews, and the construction crews. You have the capacity to regulate the pipeline companies in ways to protect our communities in a better way. And we are here because of the extraordinary hazards that CO2 poses. We are asking you to up your verification and reporting system. Yours currently is not adequate. You will hear more about that tomorrow. All of that is to say we need a moratorium on pipelines at the federal and state level. The Army Corps of Engineers, all of our precious waters crossings before PHMSA drafted a rule. Before we got some hazardous waste manifest system for the pipelines. Before we have an integrated federal system that does more than be a salesman for the CO2 pipelines. The federal system needs to regulate, not just be a promoter. I am

concerned about the department of energy, giving all of this money, without these regulations in place. You need a regulated system, and integrated system at the federal level. Then of course, PHMSA, your rule is so important to us. We are grateful for the work you are doing, and for this meeting. We wrote you that letter in November. And six months later, are you holding this meeting. We wrote follow-up letters as well. In the letter, we asked if you issue that advisory for a moratorium. That you would tell the states, hold on off your permitting. Advise the Army Corps of Engineers, you know, wait until we have got this done before you proceed. We will have a safer system, and maybe at some point, somebody in the system will say, perhaps these are too dangerous and cannot be regulated because CO2 is an extraordinary hazard. Thank you for listening, and for all of you participating in this meeting. Thank you.

MS. CINDY HANSEN: Can you hear me? I want to thank PHMSA for conducting this meeting, I want to thank all the landowners attending. A lot of you are still doing fieldwork. That pulled you away from getting that work done. Others of you may be missing your children or grandchildren's little league games today. Thank you for taking time off that. For a few of you, maybe more, I know that farming may be your life calling, you have a second job, to make ends meet, and taken time off for that thank you for being here and driving all the way to Des Moines for the meetings. My siblings and I inherited century farm ground, in Shelby County, western Iowa. Our land is on the proposed route for Summit Carbon Solution pipeline. Three hazardous pipelines proposed for Iowa. They would crisscross the state with more than 1,500 miles of highly pressurized CO2 pipelines. I do mean crisscross. Summit and Navigator pipelines cross each other several times in Iowa. The Stockdales are here. They have Navigator and Summit crossing at their land. The consequences of a single rupture are potentially devastating. The consequences of a single rupture are potentially devastating. A double rupture could be catastrophic. The pipeline routes are too close to schools, nursing homes and hospitals in our state. They would pass many livestock operations, they will be under heavily travelled interstates and other roads, carrying school busses full of children. You can see a train on the same track in Iowa every 20 minutes. Anyone who lives, works or drives near the pipelines could be at risk. Ask the citizens of Satartia, Mississippi. Some dealing with the effects three years after the pipeline ruptured there. What happens after multiple freeze and

thaw cycles here in Iowa? Rocks migrate upward. After the freeze in Iowa, if you farm, you go out and pick up rocks, so you don't hit them with your equipment. Rocks migrate upwards, how are pipes not going to migrate upwards? Will drought cycles affect soil stability around the pipes? What happens when the farmers drive heavy farm equipment over the ground? Will the integrity of the pipes and wells remain intact? Water repair crews, contractors repairing terraces, will be at risk. Recently, a large sinkhole opened in Marion County, it was 40-50 feet wide. What happens if that was underneath a pipeline? Landowners will face long term reductions in crop years, property values would be affected. We have seen it in Shelby County where our farm is located. One had a voluntary easement signed, one did not. The land that brought less money was the land who had the easement signed. Landowners were told by some of the insurance companies they will not be able to get liability insurance over the land where the pipelines run. How are landowners expected to cover damages that may occur if they have no insurance? Our land is supposed to go to the top of the slope. Our neighbor's hog confinement is at the bottom of the slope. If the pipeline ruptures, that CO<sub>2</sub> goes down the hill into the hog confinement. Who pays for all of those dead pigs? Rather than to mitigate our concerns regarding these risks, the pipeline companies have downplayed and even dismissed the subjects. Shelby, where our farm is located, have done their due diligence. Our county supervisors enacted ordinances to protect the health, welfare and safety of their citizens and the properties in their county. They are now being sued by the carbon company. They refuse to share their emergency response plan and plume modelling. How do we understand the risk, when we don't have the necessary information in front of us? Why do we trust these companies to keep us safe, when they have little or no experience in transporting hazardous CO<sub>2</sub>? I worked as a critical care nurse for 32 years. I understand the human body, and the effect that CO<sub>2</sub> has on it. We know that CO<sub>2</sub> is odorless, colorless, gas. It is heavier than air. At room air levels, CO<sub>2</sub> measures 0.04%, or four hundred parts per million. These levels are harmless. CO<sub>2</sub> that is compressed and concentrated becomes an asphyxiant. Exposure can result in long term respiratory issues and permanent brain injuries and even death. We know compressed CO<sub>2</sub> is a deadly agent. It is the USDA's preferred method for euthanizing diseased poultry and litters of pigs. CO<sub>2</sub> pipeline ruptures can cause the same thing, if people are caught

unaware. In Iowa, advanced life support should respond within 20 minutes to a rural setting. How many people will be dead in 20 minutes, if a 20-mile pipeline ruptures? 16 EMS departments in rural Iowa have closed since the year 2020. 40 departments have two or fewer EMS workers on their roster. 184 departments have only five. Five departments in our state have one EMS person on their roster. The majority of Iowa departments are volunteer. Some of our counties have as few as two EMS departments. Iowa does have 19 regional hazmat teams. These teams are expected to cover anywhere from 1 up to 12 counties in our state. Depending on the population. How long will it take hazmat to respond, if there is a rupture? How are state and local officials supposed to make decisions when they don't have adequate information or resources? A few things that are at risk. CO2 leaks and ruptures will damage valuable microbes and nutrients in our soil, taking years for that to rebound. Wildlife, flora, pollinators, will all be at risk. CO2 combined with water in our bodies creates carbonic acid. In our water and soil, it will cause leeching of nutrients and heavy metals. Here in Iowa, that includes lead, arsenic, and uranium. Yes, we have uranium in our soil. CO2, in our body, if it enters the lung, it will cause permanent scarring in your lung tissue. The report from Sartaria tells us we are not prepared to implement these pipelines. A state moratorium should be enacted until PHMSA has adequate time to issue the strongest regulations possible to clarify what state and local governments can and cannot do for law and ordinances. The 45Q and 45Z tax credits would be better spent to find a CO2 mitigation system that actually works, and not a waste of taxpayer dollars. A study from the University of San Diego showed that the end results when you consider the capture and transport of this CO2 for sequestration is capturing 11 to 20% maximum. That is a waste of taxpayer dollars, we need better results. They should not step on the rights and safety concerns of landowners and citizens. Please join us in asking PHMSA to protect our families and our land. Thank you.

[ Applause ]

MS. MARY MCDANIEL: I would like to thank you all for giving us your perspective. I am hoping that dispersing modelling, we are going to cover today and tomorrow. I am hoping we will be able to address some of those as we go on. If I could ask you all some questions. Whoever would like to answer it. That routing and siting is a major concern in the communities for all of

the different projects proposed. Can you provide a specific insight from the setback perspective, the emergency response or a combination of all of those? Is the siting and routing, the major concerns, and more perspective about what specific concern that is from the emergency response, what to do if you are in that area.

MS. CAROLYN RAFFENSPERGER: Having to deal with technology. Can't deal with microphones, and we have to deal with CO2 pipelines. What I hope you have heard today is uncertainty. Uncertainty about topography. Uncertainty about how unsafe a setback can be. A vast amount of uncertainty. When we are talking about siting and routing, in the face of uncertainty. We have unique challenges. That we not proceed before we have two things cleared up. Jurisdiction. Making sure it is covered. If a County can say, we will have this set back. They are allowed to do that by law. That if it is preempted, there is someone in charge, someone can regulate that that knows something about it. In the meantime, we are faced with uncertainty that guarantees that we will have problems in the future. You can reduce it with science and research. We need to wait until that is done before we proceed with a rule. Then, we need to make sure that jurisdiction is covered. We have the people who are closest to the decisions, that know where the nursing homes are, and who is living in basements, and what confinement operations are downhill. We need to have people able to make decisions about minimizing the risk that is inherent in the pipelines.

MR. STEVEN FEIT: I think this has been implicit and maybe explicit in our conversations in some of the questions. I want to draw out the difference between CO2 leaks -- shouldn't call them leaks, if the pipes rupture, it will be massive releases. And a sense, there is risk in the area, when you have an oil or gas pipeline that ruptures. There is a risk. They represent geographically diverse risks, that are dependent on the topography and geography. If you look at the maps, from you look at where the proposed routes are going, through valleys, over waterways, we are talking about interactions with the topography and geography that is site specific. It is not just setbacks, but the relationship with the terrain.

MS. AMANDA MCKAY: I think another the weather and temperature requirements. If you have CO2 rupture, and it is dispersing into ambient air. If you are in the middle of winter, these are the unanswered questions. We need to get it figured out.



MS. CINDY HANSEN: From landowners' perspectives, something PHMSA can't do anything about is the use of eminent domain. We weren't asked ahead of time if we would want to host the pipelines through our ground. It is being forced upon us. The other thing is safety and resources to protect us.

MS. MARY MCDANIEL: We were talking about setbacks. If there was something discussed about a setback, a certain distance did you all have some idea in mind as to what you were potentially looking for as a setback distance?

MS. CAROLYN RAFFENSPERGER: We are looking for protection.

[ Applause ]

To ask us for an amount?

MS. MARY MCDANIEL: I think that is what I was trying to get to. Through the studies coming out. Whether in essence, there is a particular distance, or should be more involved to have the terrain, the operating pressure. I wasn't inclined.

MS. CAROLYN RAFFENSPERGER: You just gave a list, a brilliant job.

MS. MARY MCDANIEL: We talked about contamination in the soil. Was there anything in regard to contamination. See it on there. Is there anything else, each one of you addressed it differently. Any other thing we would add in regard to the contamination from potential releases from carbon dioxide pipeline?

MS. AMANDA MCKAY: Yes, I think Steven alluded to this a bit. We have all the different, new sources, eating into the potential pipelines. They are bringing new contaminants. The potential for new contaminants that will affect the integrity of the pipeline. Hydrogen sulfide, methane, carbon monoxide, oxygen, knocks and socks, and hydrogen and then water, creation of carbonic acid, which is extremely corrosive to pipelines. These are the type of contaminants we are talking about. Things, I should think about setting criteria limits, when it comes to the product that is in the pipe. Again, another area that needs to be researched and developed further.

MS. CINDY HANSEN: This is more maybe a question for PHMSA, I don't know the answer. When does PHMSA jurisdiction start? Does it start from the pipeline that leaves the ethanol plant, where the CO<sub>2</sub> is captured? Does it start at the capture site? Then, my question is, who

regulates the toxic chemicals used to purify the CO<sub>2</sub> prior to that transport? And who regulates how the chemicals are disposed of?

MS. MARY MCDANEIL: At this point, it wouldn't be us. Once it is captured and put in the equipment. The pumps and compressors, from that point on is our jurisdiction. Also, Amanda, what you were saying that is based off of, design and construction criteria, looking at that. The possibility for corrosion rates and the possibility for the pipeline. When it comes to the spills and releases, I am thinking it would be an emergency response, and the different contaminants, I wanted to make sure you were included in that for an emergency response, for the potential contaminants in the CO<sub>2</sub>. We have a lot here in terms of what the concerns are, and with the rule making. Do you see concerns or things at this point that need to ensure there are limitations that we have. You sort of mentioned that. Some of those limitations you would like us to explore and expand on that.

MS. AMANDA MCKAY: We have a whole list!

As mentioned before, PHMSA should be updating the definition of carbon dioxide, to include regulation of all phases, not just super critical. PHMSA needs to demonstrate the area for CO<sub>2</sub> ruptures, it will be required for research and development. Hopefully, we will hear about more later. PHMSA needs to identify and incorporate fracture propagation on CO<sub>2</sub> transmission lines. We heard about the unique fracture propagation, opening up like a zipper, what can PHMSA do to prevent that from happening. We have heard so many times that CO<sub>2</sub> is odorless. How can PHMSA mandate the injection of an odorant transmission of an odorant into transmission pipelines. We just talked about setting maximum contaminant levels for CO<sub>2</sub> pipelines, and another thing we will hear more about, strengthening federal regulations to CO<sub>2</sub> service. This is something we are concerned about. We need to learn more about before that starts happening.

MS. MARY MCDANIEL: With that, anybody in the audience have questions for the panel?

MR. ALAN COSGROVE: Is this on? I am Dr. Allen Cosgrove. In my capacity as a volunteer with team Rubicon, an emergency response team. I go to the County and the state emergency management meetings, which are completely open to the public. They have not talked about CO<sub>2</sub> mitigation at all. This is more a comment than a question. I recommend everyone in the

room go to the County emergency management system, and state emergency management system meetings, and raise the issue, so it brings it to the consciousness, so they bring into the County government and the State government. So that they think about it, and realize there this is a potential problem that they have to deal with. Thank you.

MS. MARY MCDANIEL: Does anybody else have any questions?

MR. JERRY GOLDSMITH: I am Joe Goldsmith. We talked about setbacks, and about the information that we need to decide how far we have to have setbacks. Are there studies available that you know for carbon dioxide that give us the information to make intelligent decisions regarding how far away we need to be from structures and that sort of thing? Where is that developed?

MS. MARY MCDANIEL: I can answer from the RND, there is on-going research and development, that is something I believe, taking the feedback we are getting today and tomorrow, go back and look at it some more. I think that is an important consideration.

MR. JERRY GOLDSMITH: Do the pipeline companies have to submit that kind of thing to PHMSA?

MS. MARY MCDANIEL: They have to know what the area that would be affected by any release from the pipeline, brought up from Sitartia, based on the modelling they had done. Those are things we are looking for a different dispersion model.

MR. JERRY GOLDSMITH: Is there any requirement, when they seek an easement from a landowner, for example, they are required to show us the dangers. If I buy a pack of cigarettes, I find out it is not healthy. Drugs, are there side effects, what are the side effects if I put these on my property?

MS. MARY MCDANIEL: This easement is outside of what we do. You can request, it is the agreement between you and the pipeline operator between you and what it is there. When it comes to emergency response, that would be there is a public education and awareness program. The other comment about the emergency response in the area is shared.

MR. JERRY GOLDSMITH: It seems to be, if it is a hazardous pipeline, they should be required to tell me, it comes with a detriment to you and your family if it ruptures. I can't believe anything in the system doesn't say, there has to be full disclosure of the dangers of this pipeline, for

someone they are asking to do a volunteer easement. In eminent domain, they force me to put a hazardous pipeline on my property, they still don't tell me how dangerous it is. The landowners, to have some protection, that is my question.

MS. MARY MCDANIEL: We will take that information and see if there is an answer we can provide.

MR. WALLY TAYLOR: I'm from Marion, Iowa. To follow up on the last gentleman, the Summit Carbon Solutions just filed written testimony with the Iowa utilities company last Friday. One of their witnesses works for a company called autobon. They claims they have done a dispersion modelling study. The pipeline company takes the position, they don't have to produce it to anybody, until they start construction. It seems to me, PHMSA, you have the jurisdiction over the emergency response plan. It should require the pipeline companies to produce that as soon as they have it, so the public, including the counties, can plan adequately for what they need to do.

MEMBER OF PUBLIC: Hello. One can put a thousand to flight. Two can put 10,000 to flight. And a chord of three is not easily broken. I am grateful to be here from Peoria, Illinois, to hear the level of discussion going on. My concern is, a lot of people in Illinois, who would be affected by a carbon dioxide pipeline don't even realize this issue is on the table. I am humbly asking that you consider choosing a place in Illinois to have this level of discussion and informative meetings. You can't fight what you don't realize is happening. From Cedar Rapids, with the proposed pipeline would start to where it ends in Decatur, every point, every farm, every family, every place along that route is priceless. Our lives are no more or less important than any others. My children, my family, my legacy, and the only way we are really going to win this is if we stand together and add to the numbers in this room. Thank you.

MEMBER OF PUBLIC: Each of our counties, until you have all the answers, until how many questions up there that haven't been answered. It should be well within our rights to put moratoriums on, until we are convinced you have done your research. I would love to see a year-long test area, pump it through there for a year, with a lot of elbows and tees, and 45s, and see how it affects them, cut them open a year later, to see, this isn't a legitimate threat. Those type of things, there is no reason to race into this, without the research done. I hope you

consider all of that. The site is a big one. Imagine if they were trying to put that under Iowa, I feel bad for Illinois. Something to consider.

MS. MARY MCDANIEL: This year, our research and development, we are having another forum in the fall to come up with more research topics for the coming year. That is something we will make sure is in the discussion.

PHMSA READER: This is Scott, back over here. I want to make sure, it it was an online while I am reading this, for the Pipeline Safety Trust, we can share the wealth, right. The first question, pipeline safety, it is from James, by the way. The Pipeline Safety Trust believes that it pipelines are the safest mode of transportation. Second, is it true that CO2 pipelines have a significant list of rate than other fossil fuel than hydro pipelines, does the trust believe that the current – 5,300 miles of CO2 pipeline that operation until PHMSA rule making or just a new era billed out. I think you answered the question in terms of the region. Wanted to make sure that that got addressed from online.

MS. AMANDA MCKAY: Pipelines are always going to have inherent risks. So, every single pipeline has its inherent risks. To the second question, about the incident rates on the existing mileage of CO2 pipelines, right now, there are 5,000 miles of CO2 pipelines across the country. There is a range of numbers, 30,000 to 90,000 miles potential build out of CO2 pipelines. When you are looking at the safety record of the current pipeline mileage, you can't compare it to the potential build out of the CO2 pipelines. Thank you.

MR. BILL CARAM: The incident rate and data shows that pipelines have different rates of other modes of transportation, it doesn't mean they are safe. They have failure rates. Other modes of transportation, when there is a failure, more frequent, it is a smaller quantity. And pipelines have this unique capability of this catastrophic event, 20 miles of the pipeline that get emptied. The incident rates and total product lost in failures, is lowest on pipelines, there is the severity of the incident that needs to be taken into account.

MR. STEVEN FEIT: Can I throw one thing in before we move on? In terms of the framing of the conversation, I think we should remember that we are not talking just about the difference between a CO2 pipeline, and CO2 tanker truck, but the regime of carbon capture, injection, and one of renewable energy, and storage. That is the choice we should be talking about.

MS. MARY MCDANIEL: Thank you all for your participation and input this morning. I think max is going to switch it over.

MR. MAX KIEBA: As the panels, as we promised, we will continue to work down the opening question and comment list.

MS. JANN REINIG: I am Jan, a landowner, and farm management person right now. When I signed up this morning, I had some points, which I still have, I want to just say, wow. You people have been wonderful with the comments that you have put together, and the intelligence and the research. I think the panels, all the people in the red shirts or otherwise, it has been a great thing. Thank you for coming. What I wanted to mention, before we got our letter from the organization from summit, my husband passed away. Then I got this letter in the mail. He took care of insurance. It was my turn to get the experience. Liability and equipment. I said, have you heard about the pipelines? This is in the insurance company. They said no. One young kid came in and said, we got an e-mail this morning, from another insurance company, he said, don't touch it. They looked at each other, I think it is called the pollutant. You mean I can't get liability insurance on my farm. They said, I don't think so. We will have to think about it. What business can we run and manage in a proper position, and not have liability insurance? It is one of these things, we talked about that is happening to the landowner, if someone would sue me, on my farm, if someone was hurt or killed, I would be responsible. We talked about protection. I wouldn't have protection. I could lose everything I own. The generations we have been farmers. That is just one more thing that we don't talk about. People don't hear about. The risk is very, very big. And the fact that we need all of the strong safety rules, and regions and protection that we can get. Thank you.

MR. MAX KIEBA: I am so sorry about your husband. Our condolences. Mary Powell?

MS. MARY POWELL: The proposed pipeline will go close to our family farm well. And actually cross the pipeline that goes between the well and the homestead, wondering what regulations are in place for that.

MS. MARY MCDANIEL: For pipelines that cross each other, we have regulations in place, where they have to be a certain distance from each other, so, they do take that into consideration for the operational portion of that I thought it was a pipeline from a water well.

MS.MARY POWELL: No, this is the family well. The water supply for the acreage. It wants to go close to the well, and to the familiar cross the water from the well to the acreage. We are concerned about the pressure by the digging, what damage it will do to the well. Being so close to our water supply, is there anything that is going to leak into our water supply that we drink?

MR. MAX KIEBA: What are the impacts? I am trying to think on the fly. What other agency or groups, Travis, you have a comment? Wait until you get to the mike.

MR. TRAVIS HALLMAN: To address that concern, there are safety features you can put in place, like a sump between the pipeline and well, any pre-contamination, you would have a warning, if it was my land, that is a request I would make, that protects your drinking water.

MS. MARY POWELL: The problem is, working with a pipeline, it should be their job to protect us. And the easements for those of us, they will take our land, and not give us anything or any protection. So, we would request that we would have something coming from PHMSA to protect our water supply, our drinking supply, and our land.

MR. MAX KIEBA: That is a good question. What is a case of release that could happen.

MR. DAN ZEGARD: Can I ask a question? I am not on the list. I wanted to make a quick comment. I am a reporter, Dan Zeguard. I broke the story on the Satartia incident. I want to say something about the studies and the lack of projections in the lack of actual history projecting, based on events that have never taken place. We don't know what those, vents will be in terms of accidents. There are no studies other than mass casualty events, except out of Africa, where everyone died. And Satartia, where people survived. We will do a press conference. I have a victim, two first responders, we tried to have a panel with PHMSA. The Satartia people are the reason we are here. The 40 odd people who went to the hospital, the several dozen people who are still suffering from symptoms, including memory loss, serious problems breathing, this is now three years, almost four years after the incident. All the nonsense about how harmless it is, which is what the ethanol companies are saying, it is ridiculously false. Carbon dioxide was used to euthanize animals. It is not done anymore because there is too much suffering involved for the animals. Not being able to breathe, it is the worst suffering you can go through. We will do a presentation about hydrogen sulfide versus CO2. We will show how it is impossible for hydrogen sulfide to have caused the injuries.

One of them is saying, we have pure, nice, CO2, the ethanol companies, and down in Mississippi, they are saying, it didn't matter anyway. They are trying to get around the issue. That is the only thing they have to show for all of the propaganda that these companies put out. That's it. This idea, it will be okay, folks, it is just CO2. That is not true. I don't want to turn this into a forum on our group, but I feel it is necessary, because they are here, they are not going to be heard here. This is the place they have waited for years to be heard. And only acted because of Satartia. That is why they put out the original notice of rule making. I hope people bear in mind, there is a lot more. I think this panel, obviously knows it, there is a lot more to the story. Much, much more to the story. It is not a good story, it is a typical story, of big companies they come in to make a profit. There is not near the ability to push back hard enough to stop it. You won't see these pipelines through Gross Pointe, Michigan. You won't see them going through Scarsdale, Georgetown, places where people live. They don't have to be confronted with this quote, unquote linear infrastructure. You know who the people are who will be affected by this. There is environmental justice concerns, health concerns, and the health concerns should worry everybody. Okay, thank you. Sorry to jump in without proper credentials. And the people in this room are heroes.

MR. MAX KIEBA: Thanks, Dan. We did get information on the well question. Wells are covered by County, and we need to comply with County requirements. I do understand there is a lot of back and forth on how exactly that happens. And I have heard operators are taking the counties to task. We will do one more before we transition to the next panel. Joan. You got it? There may be a way to move it down.

MS. JOAN GAUL: My name is Joan Gaul. I am an affected farm owner in Shelby County, Iowa. I would like to commend the lady who came up and asked for more forums. The only way we found out about this, is receiving a letter in the mail, saying we are going to put a carbon dioxide pipeline through your farm. We thought, what in the world was this, all the papers were there to sign without us knowing anything about it. Day one, I decided it is terribly dangerous. I would never sign an easement to have any pipelines through our farm. I went to the Shelby County meeting where the company came to talk to us. They kept evading questions about safety. That was our number one concern. I am asking to please you know the



better protections we put in place. In the end, I really want to stop these carbon dioxide pipelines. They have a minimum amount of help for the carbon in our atmosphere. There are so many other ways to do it. We don't want to put our lives and land in danger forever. I would like to commend the lady who asked for forums in every state where the pipelines are considered. They don't know what they are signing, unless someone tells them about it. If they are not online savvy. They have no way to find out. We have been lucky in this area, to be joined by the Sierra club who has a Zoom every Wednesday night for all affected landowners, it helped us so much to learn about the pipelines and how we can help other people learn. So, thank you, and thank you for coming to our city.

MR. MAX KIEBA: I think Peoria, Illinois was mentioned. I know a man from the Illinois farm bureau, it may be one person dialed in, they are setting up a 50 to 60 person listening session. If they are out there virtually, a shout out to all of Y'all. With that, we are going to transition into the next panel. We are going to talk about, we are not going to have a break, we will try to get it in before lunch. Continue great discussion and dialog. I do want to say, if we continue as much as possible, during the sessions to have open comments. If there is a bottleneck getting to me with questions, we have community liaisons, Bill, Angela is out in the hallway, Anita is helping with a lot, too. General pipeline questions, they can respond to. Thanks to the panel. We are going to transition to the next panel on tribal government perspectives. Thank you.

MR. MAX KIEBER: Can you hear me? Move to the front row. Arlando is here, our assistant secretary for tribal government affairs. He can talk about the interaction with the tribe. We did invite other tribes, many are on the line, too. We invited others here. And great plains action society, and three affiliated tribes, Arlando.

MR. ARLANDO TELLER: Thank you. First, I would like to do a land acknowledgment. We sit on the peoples' land, we want to recognize the indigenous people here. [ Not speaking English ] Assistant secretary for tribal affairs. Good afternoon, everyone, I am Arlando Teller. I formally introduce myself. My mother's clan red streak forehead clan, my father's clan, where you find the confluence of the water. My mother is of the bitter water people, my grandfather are the salt people. I do appreciate this invite and discussion. As your assistant secretary for tribal government affairs, with U.S. DOT. Representing the only DOT, all 574 federally recognized

tribes. Again, as introduced, I am the assistant secretary for tribal government affairs, this office of tribal government affairs is a fairly new office. The conversations of this office has been in the works for the past 25 years, as tribal leaders, advocating for an office that recognizes the tribal challenges, in all aspects of the modes. They have been so staunch in their advocacy of their office, able to elevate their voices, assuring there is an assistant secretary for their voices and their seat at the table. That is why I am here. To assure and that government to government consultation, and the efforts to address safety and security and guidance, regulatory, statutory, is part of the protocol, when it comes to addressing the challenges, and the guidance and advisories, I have been hearing all day today. As community members, family members, farmers, ranchers, we all have one common denominator. It is safety. The safety of our families, safety of our community, safety of our land and what we hold so sacred is what we have in our family. That includes the community but tribal communities, none. All 574 recognized tribes, my office works closely with the White House council on native American affairs, with that council, we address a myriad of challenges, that is in Indian country, we provide you have heard of the E-V initiatives. Through DOT, have been working closely with DOI, DOE, on assuring that we have all of government approach on the electric vehicle initiatives. Part of those conversations, we have started hey dialogue with PHMSA, to actually consider delivering the PHMSA tribal symposium, to travel government, and conversations we are hearing today, and the too the microphone. Great conversations, intelligent conversations. I am looking forward to the response to your questions. When we have the symposium, we will have questions from the tribal leaders and agents. They are important to us. Nontribal partners are important to us, and throughout Indian country. We are talking about state partners, county partners, community partners, and most importantly, effortlessly, are the partners that are engaged. The coalition of land-based tribes, COLT. National Congress of American Indians. NCAI, ITA and other tribals we have been working with, throughout the days and throughout the years. Our partners are not only the five, six, seven states, the tribal communities between those I am pulling up my notes here. I want to recognize that PHMSA has been diligently working with my office on several items, 10 tribal engagement subcommittees on regional response teams. I want to recognize that. The effort is really

important. It has been really great. Tribes to be fully engaged with pipeline safety grants. From the tribes in California, to Florida, there has been a collaboration. They have a tribal assistance protocol that would mirror the DOT's. Also, the communication policy for inspection has been a program that not only has been kicked off, and continued in collaboration with our office. So, that doesn't answer any of the questions or all of the questions, but it is a work in progress for my office. To address the common denominator, putting some teeth on some regulations, as you know they are treated describes, those conversations are delicate. And meeting fell they require sincere -- those who work on or want only my family, where I came from, northern Arizona, where I bailed 60 bales, I am 50 years old -- I can't buck hay like I used to. My uncle said to me, my little one, what does meaningful mean? What does it mean? When you are going over there, you want to know what that means. Want to know what it means, to me it means, early and often. Conversations must be early and often. Is the conversations you are having here today is questionably early, but early. We want to make sure we have it often. I am going to translate that over to the tribal conversations. If I can't answer my uncle, how can I answer the tribal leader? I want to make sure we work closely with them. With that, I appreciate this opportunity.

[ Applause ]

MS. SIKOWIS NOBISS: Hello, good afternoon. I am not repping a tribal nation. I am here as a tribal citizen. I am the executive director of great plains action society, indigenous lead association that works throughout Iowa, Nebraska and the great plains. Myself, and the director, asked and worked hard to get this tribal panel here today. We have been on the ground, speaking with land owners, and wolf routes for two years now. Unfortunately, we were unable to get tribal nations, as many as we wanted to present today. I am here to discuss issues that we have seen and heard, the Omaha nation, Winnebago nation, and South and North Dakota. Great plains action society is opposed to projects, and the CO2 pipelines, midnight carbon express, greenway, and ADM pipelines, the reasons are numerous. I am here to point out the increased harm in that will be inflicted on the indigenous communities. These are the issues if CO2 pipelines are rubber stamped by the federal government throughout states in the Midwest. The relentless. Missing and murdered indigenous relatives. Temporary

housing for large construction projects, pipeline construction, or mineral mining on as James has stated. Indigenous women have reported, as a result of extractive projects, lead to increased incidents of sexual harassment including rape and assault. Here are two examples, that came forward because of stories of a study in Canada, associated with the mount milligan. 38% increase in sexual assaults, and missing people reports. There was a correlation between an increase of violence, and the oil boom. On the Forthold Indian reservation, there has been a 70% increase of case filings, between 2009-2011. Sex trafficking and missing and murdered indigenous women. It says that states shall take measures in conjunction with indigenous people, to make sure they enjoy the same rights. Today, I am asking for PHMSA to LISTEN to the U.N. they don't allow domestic violence -- I am talking about all companies, all companies that PHMSA regulates needs to have this rule in place. Lack of informed consent. Great plains action society started to contact local tribes in Nebraska, South Dakota and North Dakota. Through this, we found first, that many tribes had not required consent about the projects, or they received an e-mail or letter. Either from the companies, the federal or state governments. Through our advocacy to increase awareness with the Tribes. They didn't know where the Winnebago tribe was. With a meeting with the tribe. So, what does this tell us, again, the U.S. government is allow figure the trample of sovereign tribal rights, on the rights of indigenous peoples. Today, again, I am asking again, to stay true to the mission. I hope there are further talks to get tribal nations to the table. That is why I am glad to hear about this summit that is going to happen. It makes me happy. Their support a system set up to respond to CO2 eruptions. There is no specialized equipment available to respond to these types of emergencies. Are these companies going to outfit the tribes with the proper equipment should a disaster occur? Pipelines are prone to breakdown. Not just our tribal nations, but the rural communities, even other areas that you are not looking into right now, they will go close but have not been consulted with yet. I am the fact that they don't have oxygen tanks, in case of emergencies. Where is the money going to come from for the types of infrastructure?

Environmental justice. Navigator and summit will travel parts of the easement corridor. That is not going to be in the same corridor, or in the same easement. It is close if you look on the maps. It seems like an insult for the global movement that stood for the tribe since 2014.

Where will the white communities in the Bismarck area are against it being there is a housing community CO2. Is this going to be restored, if people refuse to have it in their area?

Environmental discrimination. That is something that weighs heavily on our minds as indigenous peoples who have been working on this for two years now. I know it is not enough, where the CO2 is stored. The pipeline. This is with respect it is stored. The agencies should be looking at this together, and not have your blinders on, and looking at your one issue that you have to deal with. Where the CO2 will be stored is a legitimate threat to the health and safety of our people. And possibility, honestly, I can't remember, from an indigenous perspective, why this is some, there is life and a biome, things happening underneath us. Then what is happening right here, right now, on top. Again, I ask PHMSA to take this and thank you for your consideration on this matter.

MR. TRAVIS HALLAM: My name is Travis Hallam. In our language, it means standing bull. I was given that name because I stand up to things. That has been my temperament. There is a lot of diversity and opinions here. I have always been unbiased. I learned that from my mother. My mother was a famous woman in Indian Country, her name was Alice Spotted Bear I got a letter from it president when she passed away. When they had the insurrection, when you watched it, the guy put his foot on Nancy Pelosi's desk, they had my mother's name in a folder. They have a native American child care bill One of the things that passed unanimously, it was in the name of my mom, and Walter SOBALLEFEV out of Canada. So she taught me to be unbiased. How many say you voted for Biden? How many voted for Trump? When it came time to vote for Hillary or Trump, I voted for Morgan Freeman. When I try to offer my advice, when they talk about our tribe, the damage, what came forth with that, the road traffic, the sex traffic, the drugs, there was a lot of difficulties that came with that. When we were reliant, we had different pipelines, unregulated. The tribe asked me to takeover, and PHMSA doesn't like me most of the time. I am always throwing them under the bus. The pipeline approval to approve the budget. They do the best they can. If they step out too far, you know what happens to these guys? I have been fortunate with our tribal council, that I have support. I don't have to talk about democrats, republicans, seven council members looking after our we took over one million gallons spilled previously, in the three years since, we haven't spilled a drop. We have

there is one people. People think pipelines are one unified groups. They are like human beings. You have horrible ones, and some great operators, I did work for the CO2 pipeline, I was emergency response coordinator. They were a great group. Part of the problem, I was on this government panel for public engagement. I got a call, warning me. I am not supposed to say who I work for. I won't say by name, this company I worked for by name were great, but they weren't great. They did everything safely. That is what I have used. If you can't be as great as them, then you shouldn't be there, and don't develop the same way. You have to insist on your own safety. The reason we got down to zero, we couldn't make the industry go away. We could make them adapt to what we felt was our best level of protection. Their position -- my position is, I tried to die from road traffic fatalities, save seven lives a year road traffic. The counties, we went from 38 deaths, the five years before to 14. The state, 161 deaths down to 90. They saved. That gets lost. There is nothing that compared to this. You have to insist, there will be peace. You can't allow another group to do it for you. It worked for us. We can cut it short. I am sure there are hungry people here.

>> Is it available publicly. Some folks are hungry.

>> I think it came out in 2008. There has never been a case of that or failure into an above ground water source. You would have to frack the soil between. HDD boring, volatile terrain. Where I live in the badlands, I have seen, where I live is 25 miles of nothing. You look in any area we do a walk down. That makes so much common sense to me. When you are talking about physical properties of CO2, it wants to flow downhill. The distance shouldn't be a flat distance, ours is 700 feet minimum. We won't allow it. Potential impact radius, we have what the federal standard is 128 feet. Ours is 700 feet. You work your way out. If you have a house up here, CO2 is not going uphill. We walk down every site individually and change the to the risk I am -- I have done it upstream for us. PHMSA didn't show up, the Corps of Engineers and I have a great working relationship. They allowed me to say, we asked for a lower diameter. Less risk. They don't have to come back later and ask for another thing. The on-site, physical inspections and for individual risk has been a huge difference for us.

MR. MAX KIEBA: There are grant opportunities available to research some of these issues that have come up. Whether it is definitely from tribal governments, but even members of the

community? We have some different grants, one is the technical assistance grants, different groups. If anyone has questions, reach out to me, I will contact you.

MR. ARLANDO TELLER: That was my question to PHMSA, I think it is important for us to understand and know that there are technical assistant grants out there. And any community, County, state, tribal government, can apply. Grants.gov, it is important for us to be not only proactive. I am talking about with the tribal nations within the states. To work collaboratively, as I hear folks over here expressing it is the same on opportunities, working with the coconut express cell phones, in making sure the word of mouth goes out. And I think it is important as a community number, my community, and my family. I heard a lot of that throughout this morning, we want to protect our family and community. Thank you.

MR. MAX KIEBA: Before we go, I wanted to see if there are comments, questions virtually.

PHMSA READER: Yes, two. The first one, especially on travel lands, history shows us that they have had numerous leaks. And the question is, what gas pipelines have not leaked? How would CO2 pipelines be different? How can PHMSA guarantee that, and by this question, it was from Linda Gasga, from the state of Illinois.

MR. TRAVIS HALLAM: I can touch on some of those things, a lot of it, from the operational side. They have smart pigging, and five years ago, it wasn't area, now they have the pigs who can do multiple things, and it will do inspections, all the way through pipe conditions, one of the things was, ask for a after waiting five years, move it up to three years. You get a quick inspection and build up to the CO2 pipeline has been safe. We did extra steps, we had public engagement. It frustrates me, from let's add in the public engagement panel for PHMSA. You shouldn't be fearless. Every time they have a less than 1/8 tanker truck. Then it runs smoothly. They didn't come out, explain. Well, not having that dialog, they put themselves in that dialogue.

MS. SIKOWIS NOBISS: Maybe that question should have been going to PHMSA, we can ask why corporations are inspecting their own work?

MR. MAX KIEBA: The first, tribal government inspection question, it is fair to say that each operator, between the federal and state inspectors, we will be out there as well? If the individual doesn't mind reaching out for the specific issue they are talking about, we can look

through with it the field staff. Operators do their own information, testing other aspects, it is like, we inspect their work. If the individuals want to reach out.

MR. ARLANDO TELLER: Tribal engagement. Consultation. For this specific operator. We hear they may go to a tribal member, and hopefully, they don't say they got a tribal consultation. I will make it clear to the operators, it is when you engage with them -- tribal consultation, when the operator and the agency meet together with the tribal leader. The tribal citizens that voted for the leader to represent them, not to tribal citizen along that line.

MR. TRAVIS HALLAM: We VF room on our code. It was created around, safety standards. When they are not meeting at that time for gathering, with that being said, you ask for a third party information. It doesn't state the quality. We do have that in or out.

MR. MAX KIEBA: Someone in the company, feel free to reach out. Whoever the individual is. We will take it into consideration as well. Maybe one more.

MS. DENISE: Thank you for the panel. The farm is over 120 years in the family. We can do the things it is up to us to do. Who has not been as aggressive as some investigators. It is up to each individual landowner. How can we get the same results you are talking about?

MR. TRAVIS HALLAM: It is a difficult question for me, as a concerned citizen.

they're always a very non-political group, they're unbiased, they're pretty honest and they put on a heck of a conference. You get regulators, you get pipeline companies, but you have honest dialogue and that would be one of the key resources I'd look to is the Pipeline Safety Trust.

MR. MAX KIEBA: And I'll be honest too. You can try to bring it up to your counties, but we talked a little bit earlier that there are federal preemptions. So I'd encourage anyone if they think of ways to improve safety, definitely comment on our public docket. I certainly can't commit -- we don't get involved in those issues, but we are looking to -- so if you have a safety issue or concern that you think could be raised to raise the minimum floor on federal regulations for CO2, we'll do our best to consider it.

MR. TRAVIS HALLAM: I would also advise if you can reach out to the Army Corps of Engineers. They've been a great working partner for us protecting the lake, when I didn't get that help at other levels. That's the group I'd reach to. I said it before, we're a little too reliant on industry



police and when we had an exposed pipe that was washed out underneath, basically weight-bearing six feet of soil for 25 feet, they wouldn't do anything for us on that, but when I got with the Corps, we made them fix that and protect our water so there would be no incidents. So the Corps has been excellent for me to work with.

MR. MAX KIEBA: Thank you. And with that we are running a little late, so we're gonna go to lunch. We're about 15 minutes late, but we still want to give you an hour and 15, because there's a lot of us and it's hopefully enough. Do we have a list of restaurants outside? I can't remember if we printed it out, but we'll say an hour and 15. Come back at 2:15 Central Time Zone.

[Applause]

[Lunch break]

MR. MAX KIEBA: All right. We're going to start pretty soon with our next panel. As far as we know, is the webcast going? Yep, I got a thumbs-up. Once again, I want to thank you for a great discussion this morning and definitely thank you for coming back. A reminder to talk into the mic. Our next panel will be -- and to give me a little bit of a break, we'll have Bill Caram from Pipeline Safety Trust helping to moderate this one -- standards, design, materials, and construction. And can we get the slides up, so we can at least show who's on this panel? There we go, thank you.

MR. BILL CARAM: Can everybody hear me? Thank you, Max.

As Max said, I'm Bill Caram, Executive Director of the Pipeline Safety Trust. Before we start on this panel, I just want to again thank PHMSA for holding this meeting, really geared towards the public and holding it here in Iowa, where so many of you are facing the impacts of these pipelines. So one more round of applause for PHMSA doing this today.

[Applause]

So this panel is on research and development, standards, design, materials, construction, and geohazards. There's a lot there, it's a bit of a grab bag. It's more of a technical panel than we had this morning, and I think when PHMSA was looking at this panel, a lot of the technical expertise, of course, comes from the industry because they've been doing this. So how do you provide that public perspective or public balance on that panel, and I appreciate them asking

me to moderate to offer that balance. I'm gonna give each panelist a chance to introduce themselves and let us know what they're working on and how they're involved here. We'll go in order of the list here.

So Gary Choquette, if you could start us off.

MR. GARY CHOQUETTE: Certainly. Thank you, Bill. Hello, I'm Gary Choquette representing the Pipeline Research Council International, commonly known as PRCI. We're a nonprofit organization focused on pipeline safety. We conduct research on how to continually improve the safety, the reliability of the pipeline systems, while minimizing the corresponding environmental impact. In that regard, our mission is closely aligned with the Pipeline Safety Trust and those of PHMSA. Our membership includes pipeline operators and service providers throughout the world. For more than 70 years, we've conducted research on the best materials from which to design pipelines, as well as how to effectively design, construct, and operate those facilities. We help develop and implement new processes and technology, such as horizontal directional drilling that was mentioned earlier today by Travis, and we coordinate with safety regulators, such as PHMSA, to identify emerging issues and put science around the best approaches and practices to help mitigate the associated risks. We work with organizations to incorporate our research into the relevant standards, and we've completed many research projects that are directly applicable to CO2 pipelines, as well as have ongoing research that will improve CO2 pipeline safety. I'm also an active participant in our fifth-generation family farm. It's located in Franklin County, Nebraska. Just days ago I finished planting there. When I hear about the passionate voices, about the care and respect they have for the land, that resonates with me personally. I can't speak to how pipelines or routes are decided, but I can discuss what the science says or does not say about what we know about pipeline engineering and what we at PRCI are doing to help enhance that.

MR. BILL CARAM: Okay. Thanks, Gary.

Ben Hanna, if you want to introduce yourself next.

MR. BEN HANNA: Yeah. Thanks everyone for coming. I'm Ben Hanna. I work as an engineer at DNV. We are an independent technical consultant in the entire energy industry. My focus is on pipeline integrity. I work out of Ohio, but we have offices around the world. We have one in

the UK that can do some full-scale testing. We have a lab in Columbus where we look at impurities of the CO2 stream and how they might affect the pipeline. In my role, I've been in charge of PRCI, PHMSA and other entities in the industry to make sure any decisions or regulations or anything that might come out is based on the science that we do at DNV.

MR. BILL CARAM: Thanks, Ben. Yong-Yi Wang is next.

MR. YONG-YI WANG: Thank you, Bill.

My name's Yong-Yi Wang I'm the founder and president of Center for Reliable Energy Systems. CRES is a consultant applied research organization with a focus on the safety and integrity of energy pipelines. I've been a researcher and a consultant for 30 years. Most of my work is related to all aspects of pipeline integrity under a variety of loading conditions. Specifically to this public safety meeting, two technology areas is very much relevant. One is strain-based assessment for that, I led the development starting about 20 years ago with support from PHMSA and PRCI and other organizations. That technology is baseline technology to look at pipeline integrity under loading, such as those imposed by geohazards. From that point, about 10 years ago we start to apply this technology to management of the geohazards. So I have a look at managing geohazards from the viewpoint of hazard identification, characterization, impact of pipelines in response to the geohazards. I've been one of the major contributors to [indiscernible] joined the industry projects on the management of geohazards, and there were two reports that came out. They recently completed the GIP. Those reports I expect to becoming the starting document for the new recommended practice API about the management of landslides. I've been active in a number of standards committees of the API, ASME, and ASTM. Currently, I'm the chair of the API standards for fracture mechanics, the chair for strain-based design assessment track for the International Pipeline Conference, and also I'm the chair of the essential workgroup under APR recommended practice number 1176, which is management of cracks.

I've also involved with ASME 318 and B 3112 committees. My experience really is from the viewpoint of researcher and consultant. I have look at pipeline incidents and those experience provide me insights into the role of standards and how we can improve them. I have a Master's and Ph.D. from MIT in materials and mechanics with a focus on fracture mechanics. I have

authored over 180 papers on a variety of subjects involving pipeline integrity assessment, management of geohazards, [indiscernible] assessment for anomalies in pipelines, materials, welding and fracture mechanics. Two subject areas specifically I think we can learn from past work, about 20 years ago we start to look at long-distance high-pressure transportation for natural gas from northern areas, for North America, namely Alaska and western Canada. Obviously those pipelines were never built because of the discovery of shale gas. However, we have developed a number of technologies from those research effort, with support from both government and the industry, namely specification of high strain pipes, fracture control, crack arrest, field [indiscernible] welding for those high strength steels and also making welds that's resistant to extreme loading, such as geohazards. As I mentioned before, strain-based design assessment technology came out from those efforts as well. That technology can be applied to new construction and the integrity management efforts.

Finally, I want to emphasize again the upcoming API [indiscernible] is going to provide the industry with uniform guidance and recommended practice for the management of landslides and other geohazards. Thank you.

MR. BILL CARAM: Okay, thanks. And last we have PHMSA's Mary McDaniel.

MS. MARY MCDANIEL: Good afternoon, everybody. I think this morning I introduced myself, but just to restate, I'm currently the acting director of the engineering and research division with PHMSA. Part of our duties are to do engineering and research. We currently have two projects ongoing involving CO2 pipelines, and then this fall we're having another forum where we're gonna look for industry and regulatory gaps. So we anticipate that there'll be some more areas identified for geohazards and specifically with CO2. So looking forward to that later this fall. Prior to working with the engineering and research group, I was part of the southwest region in Houston, and under that Houston is a five-state area. We had not dealt with a lot of geohazards, other than river scouring and river issues, but when we changed around our operator oversight is when we had two incidents in 2020 involving two pipeline operators, one in Kentucky and one in Mississippi. Both of those were pipelines that had recently been brought under our oversight. So both the inspection and enforcement cases came to us in the southwest region, and part of that now with the geohazard advisory, after those two incidents

happened, I know from the southwest region and with all areas of PHMSA to evaluate geohazards and to learn more about them. So we know what we need to do and what we need to look for when it comes to effective geohazard management program. So I think it's still sort of a learning curve for a lot of folks, because there were programs in place but talking about the strain design and how much can be put on the pipeline is something that's been evolving over the last couple of years. I do serve as the oversight of the geohazard advisory board that PHMSA did in 2022, as well as research and development projects.

MR. BILL CARAM: Okay thanks, Mary. Thanks, everybody.

So we've heard a lot today about the proposed change in the landscape of CO2 pipelines going from 5,000 miles we've heard much larger numbers than that today. Right now, it's moving relatively dry, clean CO2 in these industrial sources may have more water content and other impurities. So given that, what do each of you see as the most pressing areas for CO2 pipeline safety research? And we can maybe start with Ben and go down the line.

MR. BEN HANNA: Yeah, at DNV we're looking at impurities from east to west. Depending on where you get the CO2, the different impurities that can be in the stream and there's many companies right now doing industry projects where they're looking at these impurities and whether it's like you mentioned. But the information's out there, the research is being done, we're getting some results. I think one of the tasks that we have to tackle is just getting that information available to the people who need that information, whether you're looking to start a CO2 pipeline and you might new to this, we need to get that information to these people in a relatively short amount of time.

MR. YONG -YI WANG: All right. I'll continue on what Ben stated. I believe CRES and CO2 whether the pipeline still arrest the crack or we need to use crack arresters and they should be designed for spacing, the impurity and how those impurity will affect internal corrosion, leak detection, safety and emergency response aspect. Finally if we were to build a CO2 pipeline with high-strength steel, I believe an emphasis on making the weld resistant to extreme loading, such as those loads imposed by geohazards would be important.

MS. MARY MCDANIEL: Yes and one of the -- I mentioned the research and development projects that we have ongoing. We do have one right now with the B and T commercial and

part of that was to look at specifically -- it's to identify the unique aspects of CO2 pipeline design, integrity and operational considerations currently not well supported by existing knowledge. So I think that addresses some of the questions -- just touches on some of the concerns addressed this morning and also for us to define the procedures and the safety gaps that are identified through the research and then identify performance-based targets for CO2 safety. So this project started in 2022 and it ends in 2024. So we're working with them to complete this research project and hoping to look forward to that, but I think it is specifically here it's looking at those impurities and how it affects the internal surface of the pipe with corrosion issues with some of these impurities that are there and just the type of steel and the materials to put the pipeline together. So that's all included as part of this project.

MR. BILL CARAM: Thanks, Mary. Real quick before we get to Gary, you mentioned performance-based standards. Is there a reason you're specifically looking for performance-based standards? It would seem like in certain cases like impurity cases a prescription base might be more appropriate.

MS. MARY MCDANIEL: I think it's so we patient we get the whole spectrum of what those different considerations might be. That's why we're looking at it this way for part of this project.

MR. BILL CARAM: Thanks. Gary?

MR. GARY CHOQUETTE: So one advantage of being last is I can say everything they said, but I would add on top of that -- I'd like to see more work in three dimensional dispersion modeling. There are tools that can do that right now they're very complex and they take a lot of time to do the modeling. So doing more effective 3D modeling in a quicker reliable way would be one area I'd look at. The other one is what we call thermal physical equilibrium and it's pretty -- essentially as we get these contaminants in the gas it changes the speed of sound in the gas and that relates to this running ductal fracture in the fracture mechanics you need to know the speed of sound of the CO2 in whatever state it's in relative to the speed that the fracture would occur and that helps determine whether or not you'll have fracture arrest, if you have a rupture. And we have good thermal physical properties for pure CO2, but we don't have good thermal physical properties for the soup that we would likely see with a lot of -- especially

combustion sequestration that if you have nitrous oxide or sulfur oxides that are captured in combustion, that would be an unknown.

MS. MARY MCDANIEL: Bill for the project that we're doing, it's for gaseous and super critical CO2 so we're not just limiting it to -- sorry I forgot to mention that part.

MR. BILL CARAM: Okay. And gaseous and liquid, right? And for those in the room, a couple of folks have mentioned crack arresters and fracture propagation. I've heard a lot of people mention that the unzipping-type fracture today, that running ductile or a certain quality of steel might be enough to arrest those cracks before they unzip for too long.

So we have four different organizations up here, all conducting research on CO2 in different capacities and there's many more beyond these four. So given all the entities that are performing this research, is there coordination among the industry, among academia, among the regulators as to what research needs to be done and who's doing what?

MR. GARY CHOQUETTE: I'll take that. So we -- right now, PRCI have over 40 participants of multiple organizations looking at what we're calling the state-of-the-art analysis of CO2 pipelines, and that study is in essence to take everything we do or don't know about CO2 and capture what we think are still remaining gaps that warrant additional research. So yes, there's a large degree of coordination between PHMSA and DOE is on that task force, DNV. We've got both PRCI members and non-PRCI members throughout the whole world participating in that study.

MS. MARY MCDANIEL: And for us, PHMSA -- as part of our information for you all, we have a public page to where you can see all the R&D projects that we have. So we'll make sure that we give you that information, but as part of these projects, when the project is ongoing and completed, there are reports out there that you have an opportunity to see what's being worked on, and when it's over with, there's a presentation at the end where you can participate and listen to the outcomes of the research project. But we do work with the other researchers to include that information -- and I'm having a moment -- there's a place where you can sign up to get the notifications from PHMSA when something's coming out or if there's a meeting or a research project that's completed. If you sign up for that when something is being presented, you'd have the opportunity to participate in that. I'll remember it, but ...

MR. BILL CARAM: Just shout it out when you remember.

So given that kind of coordination, how do you get the results of the research out to the stakeholders who need it?

MR. YONG-YI WANG: Maybe I'll take a crack at it. I think Gary is PRCI for both technology development and coordination with both domestic research organizations and even internationally, so folks in Europe and other parts of the world. I've been involved with many standards making. So we take the PRCI work, the work of other organizations, present it at the standards organizations, identify any potential improvements that can make, and we form work groups to develop a specific standard of language and we vote it on and we deliberate, debate, discussion, and eventually those go into standards. It sometimes can be a long process, but that deliberate debate process is needed to make sure that all the necessary partners, all the different stakeholders' ideas are incorporated into the language in the standards.

MR. BILL CARAM: Yeah, thanks. Go ahead, Mary.

MS. MARY MCDANIEL: And the same -- as part of ours, the researchers themselves do present papers and do present presentations at different working groups and public meetings to share what their research results were.

MR. BILL CARAM: Could you share what the research is currently showing for the best material to use for pipelines, the best type of steel, or if it is another material? I think from the public perspective, non-engineers we're like use the strongest steel you can, but I know it's not that simple and there's things to weigh against using the strongest strength of steel. So if somebody could speak to that.

MR. BEN HANNA: Yeah, I could. What we're involved with at DNV, I mainly deal with fracture control. So from that basis, you want really tough steel, really thick steel and small-diameter steel. So for new builds, if you're looking to do a new pipeline, you can kind of tailor the steel that you're going to use based off of that. If you're looking to repurpose an existing pipeline, then you do have to factor that in. Ideally we've only looked at steel.

MR. BILL CARAM: Is there an issue with very tough steel with brittlement in case of a failure or a blow down in case there's a temperature drop?

MR. BEN HANNA: There is a possibility that we've looked at. If you do have some type of leak,



you're going to get a dense phase CO<sub>2</sub> to a gas phase, you're going to get a big temperature drop and brittle the steel possibly. That's where mitigation efforts take control, you need leak detection to know when you're in that situation and how to quickly mitigate that.

MR. BILL CARAM: Great, thanks, Ben.

Yong-Yi, did you have a response?

MR. YONG-YI WANG: Yeah. As far as materials for fracture control, even at lower temperature, those issue has been looked into not just for CO<sub>2</sub> pipelines, for other pipelines. I think there's technology available to do this. What you need for CO<sub>2</sub> is on top of those, so you may have needs for corrosion resistance. So that's perhaps relatively new in comparison to other hydrocarbon pipelines.

MR. BILL CARAM: Great, thank you.

Yeah, speaking of corrosion, if you could talk about the research being done -- we talked a little bit about it already, but the research being done on impurity levels and some of the challenges there.

MR. GARY CHOQUETTE: I'll take a first stab.

So corrosion -- CO<sub>2</sub> is a corrosive gas when in the presence of water. So it's really about can you control the water inside the pipeline so it's all about dehydrating the pipeline effectively and at least the initial research we have says that the other contaminants that are in the mix too, the nitrous oxides, sulfur dioxide again if you keep the water out those contaminants are not gonna corrode. That's one way to do it the other one is using a higher nipple pipe height that's less susceptible to corrosion, but there's other mitigation measures as well.

MR. BILL CARAM: Great, thank you.

Yong-Yi, you talked about this a little bit, but if we could spend a little more time on what industry standards are in place for CO<sub>2</sub> pipelines and what kind of development of those standards is ongoing. I guess real quick before you answer, there's a lot of standards setting organizations that industry groups are a part of, American Petroleum Institute, API, part of that organization brings these groups of engineers together to set best practices and these are voluntary standards that operators can take on that are above and beyond the regulations, and then often what PHMSA will do on a technical issue instead of writing their own

regulations -- and I would say and having proper public involvement in writing those regulations, they will simply adopt an industry standard by reference. So that's what we're talking about when we say industry standards and you hear API 1160 or whatever and things like that.

MR. BEN HANNA: Yeah, I might answer this question.

So I mentioned DNV we have an office in the UK where we do full scale testing a few years ago. Now, we've been involved in the CO2 industry for over a decade. We have a recommended practice out there, F-104 and part of that on how to design and operate a CO2 pipeline safely. And part of the full-scale study that we did went into that recommended practice. So for an ongoing accident, we have a protocol where we're hoping to update that recommended practice and get more information that we can pass on to the industry, so they can make their decisions. We're currently involved in a group with API, it's a steering committee where we're evaluating whether we need to issue some more recommended practices based on what's currently out there. So again, we started this study based on what you've been doing for the past decade. What we're currently doing now and in the future, whether we can leverage that to get some other recommended practices from API.

MR. YONG-YI WANG: Maybe I'll add to it. This is really Ben's area. So we have a DNV and ISO standards for CO2 pipelines. I believe API is developing recommended practice for CO2 pipeline integrity management for repurposed primarily gas phase CO2 pipelines.

MR. BILL CARAM: Okay. What kind of unique construction and design considerations exist due to the unique physical properties of CO2?

MR. GARY CHOQUETTE: Well, first of all, there's a lot that isn't unique for CO2, I want to emphasize that. How to weld the pipe, how to specify the steel, we recognize that, we understand those. Geohazards are common to liquid pipelines as well as natural gas pipelines, as well as CO2. The consequence is different. So you've gotta factor in the difference in the consequence, that's an important factor. The fundamental science of building a pipeline, though, is understanding what you're trying to transport and what the limits of the material are to handle that type of environment. So corrosive gas, again picking the material that either can tolerate that corrosion or process the gas so it's not corrosive in the first place. It's all about

knowing what the pipe can do and what you're trying to do to do the corresponding transportation.

MR. BILL CARAM: Sure, but things like the crack arresters are maybe not totally unique to CO<sub>2</sub>, but --

MR. GARY CHOQUETTE: Crack arresters have been around for decades on natural gas pipelines, so that's not new science at all. Again you have to understand it's CO<sub>2</sub> instead of natural gas your speed of sound is gonna be different, maybe you need crack arresters more frequently but the science is well-understood.

MR. BILL CARAM: Anybody else?

MS. MARY MCDANIEL: I believe for the crack arresters on CO<sub>2</sub> in our current regulations there's a provision where the operator has to perform a study to identify the location for the crack arresters. So that's something that's there.

MR. YONG-YI WANG: Yeah, I believe the mechanics for crack arresters design as Gary indicated because of the is different from natural gas, so that presents some unique challenges for the morbidity of steel. So the need for crack arresters is probably greater for natural gas pipeline. In terms of the consequence the frequency or the spacings between the crack arresters may need to be different from natural gas pipeline as well because of the consequences.

MR. BILL CARAM: Great. To make sure we can get to every topic in our long list of topics in our title here, I want to ask Mary if she could expand on PHMSA's initiatives related to geohazards in general and then if there's anything specific to CO<sub>2</sub> pipelines there. And I see you, Travis.

MS. MARY MCDANIEL: Yes. As I mentioned, we issued an Advisory Bulletin on geohazards in 2022 to go back and evaluate all the various incidents that have occurred that can be contributed to geohazards. So as part of that, our inspection program and our R&D program looking at geohazards, we do have a project on geohazards out there, but from an inspection standpoint as well to make sure that we all become familiar about the different types of questions and reviews that we need to do of operators of steel hazards to see how they're managing those. And one of the key things is the strain-based and how operators are monitoring their pipelines for movement of their pipelines and how they're doing that. We have specific regulations for the design and construction of pipelines that talk about that for

external loading for the design and construction phase but after they become operational we're relying on two regulations on the gas side, continuing surveillance where an operator is supposed to go out and monitor the pipeline for conditions and if they find something they follow up on that. On the hazard conditions if they find an adverse condition that could affect the pipeline then they need to address it there which is how we deal with that on the liquid side. So we're kind of relying on both of those but as I mentioned, I think just recently with two incidents that we had that's sort of the approach we went towards to have the operator fully develop and implement its geotechnical, geohazard program for monitoring its pipelines and to evaluate them all, which has led to a lot of other operators and we're spending time with some of these other operators that we just hadn't done before because they've always had some programs, but the technical detail and the specific information in those geohazard programs has definitely been developed over the last two years to become more robust. Based off some of the study that's been done by these research facilities to include that in their programs.

MR. BILL CARAM: And real quick, those pieces of the rules you're pointing to are those for HCA's or is that anywhere on the pipeline.

MS. MARY MCDANIEL: For the gas side, it's anywhere on the pipeline and for the liquid there is one that's specifically for HCA's and then there's another provision that we can use that are outside the HCA.

MR. BILL CARAM: Great.

My last question before I turn it over to the audience is, how do the industry and the regulators incorporate lessons learned into industry standards and regulations?

**MR. GARY CHOQUETTE: I have an opinion on that. So PHMSA right now has a very good database where if there's an incident that occurs in anything, liquid, natural gas, whatever, if there's an incident it's reportable, they submit a ticket to PHMSA and then other people can look at that event and say "Here's what we can learn from that event. Me as an operator, I can change my processes to try and avoid that same event." That's excellent, it's very much appreciated, but what we as the industry don't have that other industries do -- and the aviation industry is an example of one that does -- is a practice to share near misses, things that people learned themselves but is not reportable, so I don't have to tell anybody. And if**

**we had a process where we could anonymously share that information and learn from each other of things that could have gone wrong but didn't, that would be, in my opinion, a great advancement to the industry.**

MS. MARY MCDANIEL: I also feel that for PHMSA held a public workshop in December in Houston Texas and part of that was to discuss some lessons learned from some previous incidents and some of the actions that PHMSA has taken to more publicize the things and lessons learned for geohazards, for hard spots, for conversion to service of pipeline is on that's an opportunity for us to do some of those lessons learned and share that information with everybody and hopefully with the industry that they are aware of it but the public also knows some of the things that have gone on.

MR. BILL CARAM: I want to say after a pipeline failure in Illinois, last year, that was Marathon, Marathon they would an information-sharing session for the industry, I think they had 900 participants, and they went through what went wrong, was a geohazard on that pipeline and their maintenance of it, and they were really up front and shared that out with the industry and I hope we see more of and the next step like this question gets to is how do we incorporate -- get those into regulations. Those lessons learned. I hear you on the voluntary information sharing. I'll also say the safety related condition reports, mandated by Congress, is another good opportunity for sharing near-misses, but PHMSA is only collecting a pretty narrow band of those so an expansion of that would be another way. Anything else on these last few questions before we turn it to the audience?

MS. MARY MCDANIEL: I believe just to go further, I do think the things we've learned in the rule-makings are being developed and groups are working on that he we take what we've learned from those incident and is try to incorporate as we need to something we might have found as a gap in our regulation to include that in there.

MR. YONG-YI WANG: Maybe I'll add to that geohazards discussion. So what geohazards does is impose a certain level of loads, in some cases very high level loads on the pipelines but if you designed it right and do the field construction right, geohazards don't have to necessarily lead to an incident. So you might damage lines, so we have evident evidence to show that and pipelines, there was a very strong earthquake like 7.8 Richter Scale pipeline, some facilities

were damaged but there was no breach of the pipelines or facility. Nothing was leaked. So there was very strong earthquake, so when they specified and right materials and the geohazards works. So hazard is only part of the equation but you can definitely do the design, construction be right, so that it would not -- if something were to happen, it doesn't have to lead to an incident.

MR. BILL CARAM: As long as it's being monitored and mitigated before reaching that point, yeah. Are we ready to turn over, Max? Okay. I see a gentleman over here.

MEMBER OF PUBLIC: Thanks for all the information and everything. Seems like there's a lot of research going on, and I don't know how long it takes to implement that research into actually making pipe and doing all those things, but I'm guessing if a permit was granted to one of the three pipelines coming through Iowa if it was granted this afternoon there would be pipe in the ground before I got home tonight. And so I think this is a perfect time for that moratorium we've been talking about. Let's wait until this information is available -- [Applause] -- and then we can implement a lot of these things that you guys learned from your studies and we'll go from there. Thank you.

MR. DONALD JOHANNSEN: Well I'm from Cherokee county, by the Summit pipeline like everybody else I can't get liability insurance. Last I heard Summit was going to start construction in 2024, which means by [inaudible] and parts are on order. Allied steel. The question I have is without a moratorium how does all this future work that you're proposing help us? Because the design is done.

MR. BILL CARAM: Anybody want to take that one?

MR. GARY CHOQUETTE: I'll try. I'm a brave soul. The car you drive today is much, much safer than the car you drove ten years ago. Same way for any other risk-based environment is there's always going to be some level of risk, we're gonna learn new things and we're going to incorporate new things and it will continue to reduce the risk but there will always be a risk. There's a risk every time a farmer climbs into his grain bin. Hopefully he's aware of what those risks are and is doing that safely, but unfortunately, there's fatalities associated with climbing into a grain bin. That's the world we live in. There's risks everywhere. You always learn from

what happened wrong, hopefully, and incorporate that into better practices going forward. That's the world of -- that we live in. There's risks in everything we do.

MS. MARY MCDANIEL: But from the -- for some of things we learn in research if there's something that comes up and a particular type of type that might have an issue, the other technologies are also involving when it comes to inspection of pipelines for the internal inspection devices. So the more things we know that could potentially be an issue there's more technology also being developed to identify doing it early detection on a potential issue and have tools run through the pipeline more often so it doesn't say getting to where the pipeline shouldn't be in the ground, but if it is and we identify potential issue, there are tools also that are being developed currently that can find hopefully find those issues. So that's something a little extra added that it's not leaving it just like it is. We do have those other --

MR. DONALD JOHANNSEN: The other part was on one hand rules are easy, but it's the enforcement that's hard. If I heard right this morning, you had like 3 million miles of pipeline and 600 inspectors. That's 5,000 miles an inspector and then you're adding this new pipelines on top of it. How in the world can that be enough?

MR. BILL CARAM: Mary might be able to answer that but the rest of the panel probably not.

MS. MARY MCDANIEL: I think all of the -- from PHMSA perspective and I think a lost state perspective, there's 3.4 million miles of pipe. And what each of our programs do I think everybody has on our end is risk-based inspection program. So we identify the potential pipelines with the greater risk and do that's maybe more often each does get cycled through a maximum time interval so I don't know if that addresses your question, but it's -- it's not something we're out every day looking at every single pipeline because there are 3.4 million miles of pipe.

MR. DONALD JOHANNSEN: Just seems like a weak area. Thank you.

MR. BILL CARAM: This side of the room here.

MR. GRADY SEMMENS: Just picking up on some of the discussion this morning and here just a quick comment and a question to, my name is Grady Semmens, based in Canada. And our mandate is to really collect and share the knowledge and the expertise and experience of the very small number of large CCS that already exist are around the world and try to build off that

and help use that knowledge and experience to improve the safety, performance, lower the cost of the next generation of all the new projects that are now being looked at around the world. Our experience is based initially on the world's first CCS plant on a coal fire powered plant and we worked with partner organizations who have been doing learning monitoring and research on the underground storage -- coming from North Dakota and being coming from power plants in Canada as well. So there is a lot of existing experience there that is very valuable and we're seeing visitors coming from around the world, whether they be regulators, companies that are planning their projects, regulators and government officials, even community folks who are just interested because they want to see what these things look like and see the operations and talk to the people that are running them every day, talk to the land owners and the people who live nearby about the good and the bad, the challenges that have come up but also the successes that have been there too. In Canada it's interesting because a lot of the projects to date have had a lot of public government support behind them, and that requires knowledge sharing, and there's a demand by the government to basically share the information more broadly so that the whole industry can advance. And I'm wondering, I guess, getting back to the question if there is anything in place in the U.S. side -- in Canada they are leg to formalize with the new tax credits coming for the new projects, and make it a very formalized standard process of knowledge sharing across the industry. I'm not sure if that might be something also being looked at in the US.

MR. ALAN MAYBERRY: I'll just swing at a couple of items that came up, first off, related to -- good point related to information and knowledge-sharing and Gary brought that up as well as far as really something that's needed. In that scenario we've been exploring about the possibility of setting up a voluntary information-sharing system as a way to share lessons learned. Because our focus, we need to be getting better and we are getting better and so pipeline safety is a journey. But a key aspect is going to be our ability to provide tools to share lessons learned from accidents. One area of opportunity. Another issue that came up related to resources or touched on that related to -- infrastructure, which has been growing over time. I just wanted to add that that's an area I'm keenly aware of and aware of the need to keep up with the growth and the pipeline infrastructure. To that end, we've been -- we're one of the



few government agencies that's actually growing and back in 2015 we almost doubled in size. And we continue to grow. I think that's an important note. Pipeline safety is a very bipartisan issue in Washington. And because of that, it tends to -- something we all agree on, we all agree we need to keep the product in the pipe and maintain a safe system. So we have grown as we've -- over the years and continue to look at that, for the 2024 proposed budget for instance, we're proposing a very significant increase in our funding of state programs, state partners, represented by John and Steven who spoke earlier today. So it's something we're very mindful of to just oversee that 3.4 million miles, which by the way, includes about 300,000 miles of gas transmission lines which tend to be directly regulated by the feds. About 220,000 miles of liquid pipelines primarily crude oil refined products and things like that. But that's just the snapshot of things we're looking at related to resources and our ability to keep up with it. Not to mention the new technology and the evolving technologies that will be available to us in the way of materials and other things that we're looking at, too. Thanks.

MR. BILL CARAM: Thanks, Allen. One thing I'll add from one of the previous questions, while I agree there are -- there's some really important research being done that will answer some big questions, if you look at the R&D being done by the industry and by PHMSA, we're -- they are still doing lots of R&D projects on natural gas and on crude oil, that's been moved for a very long time and the way it is. And so there's never gonna be a point where all the answers -- all the questions are answered, and so hopefully that gives folks little comfort as well. Travis?

MR. TRAVIS HALLAM: Okay. We might be here for a few hours. When you're talking lessons learned, even though I'm 43, I got over 40 years experience in this field. So a lot of these lessons learned -- when you're talking about this deal it should also be the supply source, I remember years ago I had a T3, they were being recalled because stainless came from a bad Chinese batch and the rifles would explode so he recommend a North American supplier that's creditable for supplying the pipe. Alternative detection methods. So a lot of methodologies and -- we've got groups like Satalytics that will go right over the line. Supplemental detection systems like that should be considered. For your emergency response local emergency planning committees, they are going to be site specific. You're talking about other groups but those local groups should be brought in for emergency planning and they should be trained up,

should be assisted in funding for local emergency responders. Because there will be the first ones, a lot of is it stuff is going to be rural the first ones on the seem will be them and they should be included. Other things is when you're talking about things specific to CO2, I didn't hear anybody say the cryogenic risk because sometimes the incidents can happen on the connections and gaskets maybe fine when things are running great but when you get that endo thermic reaction you should have a gasket that stays the pin leak and make sure the gaskets are rated for that cryogenic pipe connection. And then another one I've learned the hard way is make a requirement for fresh batteries on smart pegging and hydro testing. When you test these the batteries look fine, they go out something goes and the batters go dead. It happens more frequent than it should. To minimize that risk simply state fresh batteries you had on every hydro test. Things like that is what I would recommend. [Applause]

MR. BILL CARAM: Online question?

PHMSA READER: Question from Johnny Lopez regarding CO2 pipeline new ISO standards and API recommended practice. When do you anticipate these guidelines will be released?

MR. BEN HANNA: I don't have a good answer for you for that, unfortunately. Again, we're just now looking into whether we need to issue an independent API recommended practice or if they the DNV recommends -- from now.

MS. JAN NORRIS: Good afternoon, I'm Jan Norris. I appreciate Travis's comment about the EMS training but what Summit is telling our county supervisors when they come do meetings is your local EMS will close the roads and they will take care of the rest when they get there. And what means to me is I'm collateral damage. They can't get there fast enough to get to my house to get me and my family out. That doesn't feel very good. I'm kind of feeling right now all of us in red shirts are guinea pigs. You're working on it. And I appreciate all the work you're doing, you're doing good work sounds like, but it's not going to get here fast enough. That commercial that said this is a good place for a stick-up. This is a good place for a moratorium. We've got to slow things down. [Applause] Summit and navigator and wolf have all money in the world it appears. They can buy all the influence they can. And they are. They're doing all sorts of things to get everything they want. It's going to be before your report comes out

in -- they will be in place before your report comes out in 2020 and that leaves all of us guinea pigs. [Applause]

MR. BILL CARAM: Over here.

MR. JERRY: I'm Jerry from sky county eastern Iowa. My wife and I live on 170 acre farm and it's mostly woods, pasture, farm ground, and have a half a mile proposed route of wolf carbon solutions pipeline traversing through our farm which will highly erodable land and it's very slopey up and down. And our house sits in a valley, next to a creek where most our neighbors sit. So with this proposed pipeline being up on the hill, the valley in the event of any rupture or leakage, all that would probably sink into the valley endangering all us people so we're asking PHMSA to put a moratorium on the CO2 pipeline construction until regulations are established and then when CO2 is transported in this pipeline it's in a liquid state under tremendous pressure. If a rupture occurs, time is of the essence. A timely notification system is needed. Our communities are served by volunteer firefighters and responders. We're asking PHMSA to require notification plan for emergencies from the pipeline companies to the individuals, communities, and emergency agencies with an acceptable distance of the route. Our volunteer fire department is inexperienced handling residing CO2 gas, CO2 gas suffocates living beings emergency vehicles it would take 40 minutes to reach care to a hospital from where we live. We need PHMSA to include regulations, training and support for local fire departments and first responders. Also the corn fermentation process producing this CO2 for ethanol has a high moisture content, water needs to be extracted from the CO2 before entering the pipeline. If not, carbonic acid will form and corrode the pipe. PHMSA must implement moisture regulations to control the moisture content of the CO2 that goes into the pipes, written procedures that document the process are necessary to transport gas safely. And ongoing maintenance require inspections of the property, I did hear about the satellites, though -- soil erosion is a concern, operation of farm equipment over the easement may degrade deputies PHMSA should require regulations for ongoing maintenance of the sites and routes with documentation of inspections and responses to land owner concerns. We need PHMSA to prioritize the values of the people who live near these pipelines. We call on PHMSA to implement CO2 pipeline regulations before construction begins. Thank you.

[Applause]

MR. BILL CARAM: Thank you. So the next session is general comments and questions which seems like we're naturally transitioning into before we do that, are there any questions specific to this panel before I turn it over to Max for that general session? There are a couple, okay. If you want to --

MS. JULIE JOHNSON: My name is Julie Johnson, I just want to state it's a little bit offensive for the panel to sit there and say that yeah, sure there's risk involved in everything. The thing is you guys are not taking the risk. Navigator is not taking the risk. It's us who live on the land. It's our lives, our livelihood being put at risk. And it is offensive when you say sure, there's risk. Just a wee bit. No. Before you all go home, I want you to go to an implement dealer, a tractor place and see how big this equipment is. You will see how big, how much this stuff weighs that would be going over the pipeline, but please do not insult us by saying that we should be the ones to take the risk.

[Applause]

MR. BILL CARAM: Maybe one more question before we turn it over. Somebody in line here.

MS. MARIANNE COOPER: May I just speak real quick? Because mine -- sorry -- [inaudible] -- I just have specific questions for individuals on the panel. I think Mr. Choquette, are you familiar -- I'm sorry, I'm Marianne Cooper from harden county a retired farmer. Are you familiar with the methodology of water removal from CO<sub>2</sub> at the plant level? Do you have familiarity with that?

MR. GARY CHOQUETTE: A little bit. Most of my dehydration experience is related to natural gas and not CO<sub>2</sub> specifically. The process is similar. Most commonly it's glycol process that removes the water.

MS. MARIANNE COOPER: Is that a chemical desiccant?

MR. GARY CHOQUETTE: It's the same chemical that you use in your automobile in the radiator. It's glycol.

MS. MARIANNE COOPER: Okay. So what I'm getting at is would the process of removing water result in a material that's left over from that process that needs to be got rid of by the plant

somehow? And would there be any, say, for instance, water quality concerns connected with that?

MR. GARY CHOQUETTE: I don't have deep experience, again, with CO2 specific. But the try ethylene glycol process used in natural gas which I understand to be similar involves regenerating the liquid after it contacts the fluid, so the water is absorbed in that process, and then you boil off the water in that process, it's a continuous loop. So what's emitted is the water as steam.

MS. MARIANNE COOPER: Okay. All right. And then I had a quick question for Ms. McDaniel discharges would saturated ground surrounding ago buried pipeline be considered a geohazard? And the reason I ask is because my understanding about the incident had to do with a whole lot of rain and saturated ground connected with that pipe, which broke

MS. MARY MCDANIEL: I think just the saturated ground itself not considered necessarily a geohazard it's the amount and how much the land moves. So there's landslide or something shifts beneath to make it move out which it moved out from under the pipeline and just kind of brushed -- sorry, brushed down. So just normal rainfall does not necessarily make it a geohazard but it's that continued and the type of soil that would make it into potentially a geohazard

MS. MARIANNE COOPER: I see. Thank you.

MR. BILL CARAM: Before I turn that back to Max I want to take a moment one thing I always like to remember is that we do all have the same goal in mind and that's safe pipelines with no incidents. And I know that these folks up here do a lot of research to try to get us to that point and I know that's a very emotional issue for folks that are here with their communities being put at risk so my heart goes out to everybody and I hope we can focus on shared goals. So thank you very much. I'll turn it over to Max.

MR. MAX KIEBA: As committed earlier today, we're going to get through our list and I know we have other people that are interested in asking questions. What I might also as I have this list, I know there's some individuals here that might be here two days, both days, including tomorrow. There might be -- there are some individuals here that are only here today. So I want to at least do the first pass of folks only here today. As I go through this, if you're here

today only, then we'll work on that comment. If you're here two days, and you're willing to at least, if web can't get to all these today and have more open questions tomorrow we'll go through that as well. And we have a few others as well. I will ask you in the interest of a lot of people have comments and questions, try to keep your comments concise if possible within two to three minutes. So I'll start going down the list. The first one I can't even recognize might be SLC, looks like initials. Brent Hap? Here today or two days?

MR. BRENT HAP: I want to thank the PHMSA people for coming today. I hope they understand how seriously all of us take this. A lot of people drove a long ways to come here and everything. And I've brought this up before, not today, but I want you to look up the Iowa motto tonight when you go home. Our liberties we prize and our rights we will maintain. Thank you.

[Applause]

MR. MAX KIEBA: Glen Alden. Is Glen here? Richard McKeen?

MR. RICHARD MCCAIN: Yes, I'm Richard McCain Armstrong Iowa, we're you on the Iowa Minnesota border. I'm an ISU grad majored in economics, army veteran, I'm retired farmer, retired farm drainage contractor, chairman of the county zoning board. Navigator proposes to go through one and a half miles of family farm part of which my grandfather purchased in 1892. It's all -- from 20 to 60 foot apart running in all directions. They propose to approximately 530 feet south of our house with hazardous CO2 pipeline running east and west the tile draining our basement run north and south which they will be cutting. We have two bedrooms in the basement. With a break in the pipeline the 2,000 pounds will enter the field tile and instantly fill our basement with CO2 as it will boil the water out of the traps. Since it's heavier than air it will kill anyone in those bedrooms. The nearest train rest you units are two hours away from our farm. The road in front of our house runs east and west between our home and the proposed pipeline. So we have no chance of any exit from the situation and no emergency available help to us. Now, this example of our personal situation is very common in rural northern Iowa. As a drainage contractor that spent years installing drain tile a rupture in the CO2 pipeline will force CO2 for miles through the system in Iowa and end up in many unexpected places and being colorless odorless and heavier than air pose extreme danger in

totally unexpected locations including schools. To put this in perspective, we have a lot of tile that's one half -- one tenth of one percent grade. So a football field is 300 feet long. 3.6 inches. So with our drainage system in Iowa, we have a super highway for the spread of CO2 after a rupture. Thank you.

[Applause]

MR. MAX KIEBA: One individual that wasn't here earlier when I called want to make sure, Emma Schmidt. Okay. Dan Wall. Wahl.

MR. DAN WAHL: I'm an affected land owner. A lot of this sounds like the board of supervisors room with everybody giving all the facts and figures on how wonderful this pipeline can be but no one, especially when you've been asked to do some set backs or moratoriums, that's out of your range. So who are we supposed to turn to? We have a hearing coming up in October. That can be slam dunked through and they can be digging by January. You have no clue what the urgency of this is here. And what we're hearing is how safe and wonderful it is from you guys. We're very frustrated on the inaction, you're appeasing us and saying we'll take that into consideration. That means crap to us. Who's in charge of making a set back? The county is making it to try and protect us, and they are getting sued by the big powerful pipeline companies. I got a lawsuit coming up next week that Summit is suing me. You're blaming it on the state. Who's going to take responsibility here?

MR. MAX KIEBA: It's a valid concern. But it is at a state and local level at setbacks and siting

MR. DAN WAHL: No, IUB says it's -- preemption, says you guys are the ones with the setbacks

MR. MAX KIEBA: I think with setbacks I think there's confusion out there. Is it a set back for a buffer zone for --

MR. DAN WAHL: I have neighbors balancing new house within a hundred feet of their front door, what are you gonna tell them?

MR. MAX KIEBA: So I think anything that we talked about potential impact radius dispersion modelling the potential impact from a release that would be us in the case of a release that would look at it doesn't necessarily mean and I'll be up front with you, doesn't necessarily mean you can't have a house within that area. That just means if you're in that area we have additional regulations in place for integrity management --

MR. DAN WAHL: 50 feet. That's absolutely bull -- that you would let them put a pipeline underneath a house.

MR. MAX KIEBA: I do -- I will say I don't have a CO2 pipeline by my house, but my kids' school is right down the street and does have -- and I worry about it too, there's a --

MR. DAN WAHL: But not enough to get it into action, right? You can get the ball rolling. Just make the law tomorrow.

MR. MAX KIEBA: Good question. Moratoriums --

MR. ALAN MAYBERRY: We have a number of people we're going to allow to come in -- that wanted to also participate, but related to a moratorium, I mean, we are -- we hear what you're saying, and we're taking that back. So it's important for you to comment on our docket, the various avenues that we've had, the comments today will be part of the record. So we hear you. And we're taking that back. Thank you. I'm not sure what else I could tell you related to that. We really wanted to be here today to hear what's on your mind. Obviously this public meeting we're covering a variety of topics related to how we oversee the safety of CO2 pipelines. But to the extent there are issues that -- I was going to cover this a little bit later, but issues that cover other government agencies, still comment, we're gonna get those comments to the right people. I assure you of that. Any comment, even though it's something we be don't do we're gonna make sure that goes to the right people.

MR. DAN WAHL: We need action now.

MR. ALAN MAYBERRY: I understand, our focus is pipeline safety today, and I'm assuring you we're gonna make sure that your comments are funneled to the right people.

MR. MAX KIEBA: I can say what I saw from the registration list there are some state legislators that are hopefully still listening in and other individuals, but -- if I get the sense they're not listening. We have a hand raised. Sorry, do you have a comment, question?

MR. ALLEN TRIBBLE: Yes, I do. Thank you, Max, my name is Allen Tribble, married to an affected land owner. She and her siblings have lived on the same farm grew up there, owned it and their family 98 years at this point. I think you can all appreciate this is a very emotional topic for the citizens of Iowa and those who live near pipelines. In my case, I have a doctorate in physics from University of Iowa and I spent 35 years in many research and development in



the Aerospace industry where among other things I've done safety analysis on life critical systems. I think it's very important we all bear in mind that systems do not just what they are designed to do but what they can do. I would, while I personally as a scientist question the science behind carbon sequestration whether it will actually have a significant impact on helping the DOE reach their goal of zero emission by 2050, as a business leader I also question the ethics behind the business model that would allow you to take taxpayer dollars used eminent domain to condemn land -- [Applause] -- systems, and then build a system that you could then use for fracking, but I appreciate PHMSA is here to protect the people and the environment so I have three recommendations for you if you would bear them in mind, I would appreciate it. First and foremost several people mentioned that pipeline companies are refusing to share their safety analysis and they are only promising to do that after they receive permission to construct. I would propose that a more logical amendment or more logical process would be to require them to submit that in advance of any permit to construct. That would allow it to be submitted to peer review. That would allow independent experts to validate their assumptions, their collaboration calculations and ensure the results are accurate. As accurate as they can be with the data that we have at the time. That would include modelling and estimates of worse case analysis. Second, prior to any authority to operate, I would submit that it is necessary to ensure that first responders are trained and equipment to do the job that they will invariably be called upon to do. At lunch today we heard from one of the victims of the Satarita incident who said he heard and witnessed the explosion of the pipeline and, quote, within seven or eight seconds, unquote, his car stopped working. We also heard from first responder who was in a separate county that got a call that said bring everything you got and when they arrived their car stopped working so they had no choice but to walk on foot. First responders need training on how to evacuate casualties safely so they don't become casualty themselves and can breathing gear to do that appropriately and probably need some vehicles that can operate in an environment where combustion vehicles won't operate. That may be electric vehicles or could be specially modified combustion vehicles but I would submit the cost of all that should be born by the for-profit companies seeking to do this, not the taxpayers. [Applause] if they are -- if they plan to make a profit, then

they should the cost of business, invest in all the necessary costs and ensure that that business is able to self-sustain. If it isn't, it shouldn't be allowed in the first place, thank you very much.

[Applause]

MR. MAX KIEBA: We will have a panel tomorrow homogenize response a lot of these questions, what's the right response, is it shelter in place? Is it evacuate? And there was with combustion engines if it goes through a cloud, I think we heard a little bit today electric vehicle response.

Patricia Dumolien.

MS. PATRICIA DUMOLIEN: I am here representing my mom who is a land owner in Scott county Iowa. There's not a lot more I really need to add to that. But I do want to say the farmers in this room and myself as a teacher, we don't have -- some of us have areas of expertise but not in pipeline. And I appreciate the fact that all this information is being shared. But my concern is how much money are we spending on this and is it really going to do what we are saying that it is going to do which I've heard like it's going to sequester ten to 20 percent of the carbon in area but taking these risks and spending this money on the research. I appreciate people having these jobs and working and doing the research for this but is this the answer to the problem we're trying to fix? And where's the funding coming these paying for all this, this is government funding? Some is this pipeline funded? Who's funding the research? We the people truly, we are -- and so when he's -- when are the last gentleman was talking about that I'm saying to myself, oh, we're bearing all of this to make a small number of people a lot of money, and we're taking all the risk without any benefit. Farmers, I'm a former teacher -- we do our business because we care about the land and we care about each other. We're not in it for money. And there are people who are in this for money, and they are taking it from us. And it's appalling to me. I don't understand how this can be happening. I don't understand it. It's not what I taught my elementary students about what the world should be like. And this is the reality of what's happening today. And it just makes me sick the amount of money that's being spent on this when this is not the answer to our problem of carbon. There's a lot of other ways I think that we can handle this. And it shouldn't be putting people's land and our environment at risk. I just don't understand it. I can't fathom that people that are making this money can think that it's not going to eventually affect them. I guess they're here for today for

the reward of that money. Beyond that I don't get -- you heard from farmers, they've had land for a hundred years and care for the neighbors that live around them. We don't have this connection to the money. And so people come and offer them some of these farmers money that don't have a lot of money, some have them have signed because they didn't understand the long-term ramifications of it. But we really need to look at what is good for our people, what is good for our land. And I don't believe the pipeline is the answer, but I do appreciate everyone's knowledge, I do appreciate their research that's done but I don't think it's the answer to the problem. So why are we going around in circles? Farmers are jacks of all trades, teachers teach. The whole perspective. And we're not looking at the whole -- we're not looking at the whole picture when we do this. What we're doing is not looking at the whole picture. And there's some good people, good people that are on this committee, that are talking. They have a conscience, they care. You do. I know that. I can see that new. But you're too narrowly focused. We are becoming too narrowly focused, and that is my concern. Why are we not looking at the whole picture? And I think farmers do that. It's the nature of their trade. But the nature of some other trades and things are a narrow focus and we're looking at what we need to do in that -- they need to do in that narrow focus. There's good in that. That's good. But is it the right answer and are we directing our finances in the right direction when we're doing what we're doing right now? I don't believe we are. And we need help. We need to stop this and we need some good people to stay on these committees. We've had IUB members that have quit their positions because they don't want to have to answer to what they know is the wrong thing and there's pressure coming to have this happen to us. And we aren't looking long-term and we aren't looking at the cost efficiency with this. Please, if you're on a committee, don't quit on us. If you believe this is a wrong thing to have happen, stay there and fight it. Please.

[Applause]

MR. MAX KIEBA: Kathy, you're a little bit further down but you've been waiting patiently

MS. KATHERINE STOCKDALE: I may have needed more time to recoup after that because as you can tell it's an emotional issue for many of us. For those that don't know, I'm Kathy Stockdale from Iowa, Iowa Falls I thought today most times I talk about the pipeline but first I'd like to say

a little bit about what my family is. First of all, I'm in this because I believe that God has made me a steward of my land. He's also given me two children that I have raised. One of them has a master's in neuroscience, who has patents in her name from the University of Iowa, my son has a mechanical engineering degree who owns his own business and has come back to farm. In Iowa we're raised as people who doesn't understand what's going on. But I will tell you as a land owner, from the first time I got those first 18 certified letters from Summit and three months later got the letter from Navigator that it was also going through my land, I have done research. One of my first questions to Summit at their hearing almost two years ago in September was, what kind of steel will you be using for these pipelines? Because I had done the research. That's something that I've always felt is that when you are going to fight something, you have to find the data to use in it. But today I have questions for that panel. Because as I said, we have both pipelines going through our land. I have helped my husband farm that land for 46 years. I prepped those farm fields in the spring and know every single inch of that land. I hauled the wagons every fall. I can tell you that our farm has wetlands and we have highly erodible land. Summit will be cutting our farm in half, going through both those kinds of land. It will be going about 600 feet between our home and our son's home. We have concerns. With a 12 inch pipe going that close to both of our homes, being older, if something happens to me, I'm ready. But I hate to see that happen to my son and to my grandchildren and my daughter-in-law. Navigator -- or farm has some that are north of the railroad tracks where somebody is going through and some on the south side on the other side of the railroad tracks where Navigator will be going through. Those two pipelines are crossing on our neighbor's land. They are proposing to put them on top of each other is what the maps show. I have written to the IUB and asked questions on this, I got a response from Summit almost right away in an email that said let's sit down and talk about this. But I know enough about Summit that you don't sit down and talk about it because they will say whatever they want to say. I said give it to me in writing. Never got a written response. But my concern is, too, when these two are crossing, Summit will be going under the railroad tracks right there, it's a mainline railroad we feel the vibration a mile away from that, they are crossing, it's going under the railroad tracks and 1500 feet farther down on one of our fields, Navigator is going under the same

railroad tracks, there's a trust he will between the two. What kind of danger are we in? Two 12 inch pipelines crossing I'd like to know if Summit puts one in one year and Navigator is coming to dig it up to put in another one, is that not a threat? As navigator is digging over what Summit has already dug up? In 2008 part of our land was under water for three months. What effect does three months worth of water on top of a CO2 pipeline have? What effect will it have? And I have pictures if you'd like to see the flooding from those years. Summit will be going through part of it and navigator will be going through a large part of it. These are answers that we're not getting and we'd like answers to. No one knows that land better than the farmer. And as I said at the beginning, I'm from harden county also the home place of Bruce Raffin -- we in harden county know Bruce's history of business. He has started two or three businesses in our county that have been on the verge of bankruptcy or bankrupt and he sells them on and on and makes a profit. He started one of the ethanol plants and Iowa Falls sold it off because it was going bankrupt. How -- you've talked about how much the operator has an influence over these pipelines. How am I supposed to trust that operator when I know what his history is? And when I see who his investors are as foreign companies. When he sells it off, what happens to that pipeline? And to us. You know, we have many unanswered questions. We do the research. We try to ask questions. But they will not give us direct answers. They have -- you can almost tell who has been with Summit or with Navigator because they have answered to every single question you ask. So that's why we're here today. We want -- as I sit here and look at my farm ground and with two pipelines going through, I want them to wait until they have new regulations in there before they build it. He referenced it to a new car. Well, if I knew that in two years, a new car was coming out with better safety features I would wait and buy that car in two years rather than this year.

[Applause]

MR. MAX KIEBA: Mike Tramantina. Kim.

MS. KIMBERLY JUNKER: I'm Kim, my husband and I farm in butler county, affected by Navigator pipeline. We've been told by Navigator that they're going to take care of safety, they're really working on safety issues. And they try to reassure us that all the time. Well, I just want tell the Keystone pipeline was built in 2010. And to date there have been over two dozens spills, a

spills in December of 2022 where more than 500,000 gallons of crude oil leaked onto the Kansas landscape, was caused by combination of faulty weld and a bending stress fatigue on the pipe. The federal report released in 2021 showed that the severity of spills that is worsened and four of the biggest oil spills between 2010 and 2020 were caused by issues related to the original design, manufacturing of the pipe, or construction of the pipeline. All I could find about the pressure of the Keystone pipeline was that it was a reported -- it was operated at about 1300 PSI. We're being told these CO2 pipelines will operate from 2200 to 2500 PSI. How can you or the pipeline companies tell us that these will be safe? They are a ticking time bomb. It doesn't make me feel very safe when I hear PHMSA say they are studying these pipelines and making them safer. You can't even stop the oil pipelines from leaks. How are we supposed to feel safe about the CO2 pipelines that are even a greater pressure? Thank you.

[Applause]

MS. ANNA RYAN: I will be here tomorrow and can hold my comments until then.

MR. MAX KIEBA: Thank you. Vicky Beck. Vicky Beck. Okay. Not here. Holly Smith. Maybe Haley. Okay. Thank you. Debra Main.

MS. DEBORAH MAIN: I'm from wood bury county and we have a century farm there. These carbon capture appliance -- in the infrastructure and the reduction inflation act not a desire to create a better environment. Current regulations as we have discussed today are designed for the operation of oil and gas pipelines and don't address the risks posed by the hazardous CO2 pipelines. And we've also discussed jurisdiction between counties, state and federal entities aren't clearly defined. Pipeline companies are using unethical tactics to obtain their approval before they are required to abide by common sense specifications and regulations. As it stands, it is not a matter of if but when a hazardous CO2 pipeline ruptures with catastrophic results. And in that line, PHMSA issued their investigation and fined Dan bury a substantial amount as turned out, they reduced their fine by more than half and they also agreed to a consent agreement which in that instance they did not have to admit to any wrongdoing. Which left the victims of Satartia hung out to dry so I would like to know what led to that particular decision and are we going to be left in that same position.

MR. MAX KIEBA: I had other input. I apologize, yes, Linda.

MS. LINDA DAUGHERTY: I'm Linda, with PHMSA. And first of all, thank you for being here. It's not easy to sit here and listen to the pain that's very clear in your voices. So thank you for showing up. Nine tenths of getting the job done is just showing up. You're showing up so thank you and we're learning a lot. Although you may not realize it, we're taking a lot of notes. And we're learning a lot of things. And thinking about a lot of things and how we can help and how we can -- but we're not going to sit here and make promises that we cannot do but we're gonna try. We're gonna our best. Having said that you asked a question about Satartia. That relates to our enforcement process, the enforcement process provides that we go out and do our investigation by the way or director of investigation team is here at this meeting today and listening to you as well as other members of our accident investigation team because we need to hear your concerns. We do an accident and compliance investigation on out of our compliance investigation we have to say did the company not comply. And then we can take enforcement action called a notice of probable violation. It goes out to the company. We are required to have a discussion with companies to see if there are things that -- it's civil, not a court case, it's a civil process, so we have to have a discussion with them to see if there's something that we made a mistake on. Did they have evidence that we missed? So we have to have a discussion with them. Sometimes during those cases, the independent lawyer that's looking at it will say you know what, PHMSA, maybe your case isn't as strong in this particular item and sometimes the civil penalties get lowered. In this particular case we felt our case was strong but had to acknowledge some of the claims of the company, our civil penalty is still strong. Our biggest action is coming you the off of that event was our correction action where we required the company to take certain action and point you to both of those. It's a double headed action that our agency takes, not just a civil penalty. The consent order is part of that process of resolving things to bring it to the a conclusion so we can actually make the company do the things they need to do. Sometimes they will go through a different process called final order. By going through the consent order we're able to get resolution instead of ending up in a court case. I don't know if that makes any sense. I'm giving you a primer on PHMSA enforcement in 15 seconds where it actually takes -- can take over an hour. But the point is we

found violations, we alleged them, puts them through or enforcement case, holding the company accountable. And we're making them fix the issues that we found. So it's not a perfect world, we may not get everything we want, we're definitely taking action on that case.

Max, can I acknowledge her question? Is it about the Satartia case?

Hang on just a second.

MS. DEBORAH MAIN: If this is happening -- if this hadn't exploded, would you be even looking at this? I mean, how will you -- I don't want to be the case that you come to see us after there's an explosion. I want to make sure -- [Applause] --

MS. LINDA DAUGHERTY: Absolutely. And I agree with you. One of the hardest things for us to do is to show up at an accident site. I've been working with my organization with PHMSA for 32 years. And I have been to way too many accident sites. And every time that I have to show up at one and I have to look at people in the eye and I have to say, we're learning, we're trying to get better, doesn't make it better for yesterday so we're gonna do everything we can to make sure these issues are addressed. The question you asked was valid. Where was PHMSA prior to the Satartia incident? That's what you're asking. Why was that line allowed to rupture in the first place? And I could give you an easy answer. But what I'll tell you is this. We were inspecting that line. There was land movement. So whether you're a climate change believer or not. What I can tell you is on the Satartia incident there was amazing rainfall that had caused the soil to be unstable and that land moved and it just flopped that pipeline and busted it. I don't care what if it had been a tank, it would have failed. Right? The question is what could the company could have done to have predicted and prevented the land movement. And I will be honest, this is a new area. We haven't had these kind of issues and weren't aware. The last several years, it's like wait a minute, that's why we issued the advisory bulletin and said we have got to get on top of this, gotta make sure that companies all over the country are aware they have to be looking for land movement in advance of a problem occurring, finding out your land movement after your pipeline failed is unacceptable. Right? So we fined the company and other companies have had failures related to land movement. They got fines too but more important thing is we've learned, and we're making companies get ahead of the land



movement. Is it perfect yet? No, it's not. But we're going into the situation a lot better informed than we were before. Sorry, I hugged the mic too long on this issue.

The problem is, it's like asking the police to change the speed limit. We're the police. I said you're asking us to do something we don't have the authority to do. You're saying it's a really good idea to slow the speed limit down on this curve on the road. You're asking the police, we're like the police. We're trying, so what we're gonna do is we use our information, we -- the reason why we came to Des Moines, we came to Des Moines, these kind of meetings are often held in D.C. we came to hear from you. I apologize, a lot of questions -- we came to Des Moines because we wanted to hear from you where you are impacted, hear from the Midwest I'm from Kansas City by the way, so, hey, you're part of my heart. So we came here to listen, we're listening to things beyond our authority but as Alan said a couple different times we're gonna take the messages back, you're putting them on the record, and we're gonna get these words to the best of our ability to people that can make a difference. I was talking to a couple outside about how can we make be an impact. There's this big governmental thing and -- what I told them is you know that QR code, put your comments on that. Write to your representatives. You have no idea -- you have no idea -- okay, on my end -- okay. So you guys have done this route. As a unit, you've done this. Okay. Okay, well -- well, I would encourage to you continue. I will share this with you. As a government employee, when we get a letter that has one of those congressional seals on it it's like -- because we have to respond. We don't have a choice. When you get the attention of your Congressman and they go to -- and they take action, it's very powerful. But I can't force representatives. I vote too. You know? But what we're here to listen to get your comments and concerns on the docket, whether they're positive, they're, hey, yes this is good or no, this is a bad thing. We're trying to provide avenues to put you on the docket. We're a tiny agency and trying to listen. You're not hearing any of us push back. We're just trying. I'm sorry, ma'am, you had --

Instead of me? Okay. That's fair. I have a tendency to do that.

MR. MAX KIEBA: If I can give the award for resilience and stamina it would go to Jan Johnson over here. She's been waiting here patiently so go ahead, Jan.

MS. JAN JOHNSON: Thank you. I have a couple questions and the first one in North Dakota, it's my understanding that Summit says that they have responsibility for the sequestration site for ten years. And then they're going to turn it over to the state of North Dakota. So what's the process or is there a process for Summit, a private company, to do this to turn it over to a state. So who trains, hires people, what agencies have jurisdiction or responsibility in the state to do this and where are they going to get the funds for the state to hire people to take care of this sequestration site

MR. MAX KIEBA: I don't personally know. Is there anyone in the room that has a good handle on sequestration sites and how handovers may or may not happen? I mean like a regulatory authority that can speak on how these might happen. We got other mics.

MEMBER OF PUBLIC: I'm not a regulator but I do want to preface this with I'm not a regulator, I work for clean air task force and environmental nonprofit but I lived in in North Dakota and have looked into this a little bit. So it is -- I might not get everything exactly correct, but with the way the North Dakota regulations work, after a certain amount of time it is turned over to the state, but the state of North Dakota has created a fund system where operators have to put money that is based on the -- it's a dollar per ton of CO2 injected that goes into this fund that is then held long-term for both being able to create these permits to require that compliance and to monitor the company while they are operating their CO2 sequestration systems, and then also once they have turned it over to the State, there are still funds remaining for the state to be able to continue to monitor that system. So maybe not a full, full in depth answer but that's the best of the understanding that I have. I hope that helped a little bit.

MS. JAN JOHNSON: I forgot to say I live on the family farm in Pocahontas county and been in the family for 111 years and I live in the house my mother was born in. The second question I have is at our board of supervisors meeting, Elizabeth with Navigator was there, and said that before the pipelines have CO2 in it, they will test the pipelines with water under high pressure, and so I'm wondering, one, where do you get the water from to flush the 16 inch or more pipe? How do you get the water out of the pipe? And what do you do with the water that has run through the pipe?

MR. MAX KIEBA: Yes. So some part of that is typical to do an a hydro test, you're testing the strength of the pipe and the welds as part of that too. There is a process in place that ideally from an environmental perspective you're not going to dump it out because chances are there's something else in the pipe. Another big concern is you want to make sure that water is ideally completely out, particularly with carbon dioxide because water and carbon dioxide forms carbonic acid which can create internal corrosion issues. There's a process in place to run the idea of the hydro test is essentially a strength test to see if it once you think you have everything from a design materials perspective, and then a construction part which we heard comments about joining and welding and aspects like that that's the aspects of a hydro test. Thanks, Jan. People in line have been also very patient. I understand there are three questions online that need to be ideally answered today. Anita?

PHMSA READER: Yes. There's a few questions that was related to the conversation earlier that I wanted to give a chance to ask on their behalf. Elaine Pacheco asks, could you please provide insights on the specific methodology or approaches recommended by the Advisory Bulletin for operators to conduct comprehensive geohazard risk assessments along the pipeline route. Additionally, how does the bulletin guide operators in developing detailed risk mitigation plans that are tailored to address the specific geohazard threats identified during the assessment?

MR. MAX KIEBA: Mary, are you willing to answer about the -- essentially a summer of what the advisory bulletin requires for geohazards, if you don't mind. If you don't know, Mary is our point person on that advisory bulletin, for more information, it's usually ask Mary. Here's Mary.

MS. MARY MCDANIEL: It might be easier to for me to provide something in email to pick out the specific provisions in the Advisory Bulletin, but it does go through to where what a pipeline operator has to do to identify whether they have geohazards on their pipeline, and then if they do, ways to monitor their pipeline facility for those geohazards. And then the develop this risk model and that's something once they do that, from PHMSA or the state inspector we will review that plan to make sure it includes all the provisions. We spell out the provisions in the Advisory Bulletin. I'll be March than -- more than happy to put something together and put it on our site that we're doing.

PHMSA READER: And the next question from Deb asks, regarding PHMSA inspectors of CO2 pipelines during construction, I have learned the Dakota Bakken pipeline construction took place at night and on the weekends when inspectors weren't expected to be present. I'm concerned flaws in pipeline construction when covered with soil will not be visible to inspectors either at the county or federal level. How often will PHMSA inspector be present? Will they do inspections and night or the weekends? Will the CO2 companies be notified when PHMSA inspectors are expected on the construction site?

MR. MAX KIEBA: Linda is here but I think it's fair to say if there's work being done when we're supposed to be inspected we'll be out there. It wasn't a CO2 pipeline but I personally -- years ago there was an incident in Ohio, a rehab project and there was projects going on 17 hours throughout the night. And I was one of the additional bodies just to help additional bodies but we were out there until, if they were out there until like I said, 11, 12, midnight, we were out there. So -- I will say there's -- there's always -- another former part of my history is human fatigue and there's a question that comes up if you have people working over hours without breaks, question raises, are they performing as well as they perhaps can be. So that's a question that comes up. If you haven't seen welding operations, if it's welding going on they have shifts where the welders come in and out and things. So other things like other groups like OSHA comes into play and those aspects but there are things to make sure people have good enough rest and things like that because questions come up with you pushing it too much particularly working late at night and things like that.

PHMSA READER: And the next question from Ben D asked are pipeline workers and this is in parentheses, maintenance, operation, insulation, required to go through operator qualification, testing and training?

MR. MAX KIEBA: High level, yes. So there's certainly parts of the regulation they have to go through a certain qualification and typically theirs some timing aspects to it. What can vary is what exactly is -- what's considered a qualified task and aspects but there are multiple aspects of what's required. So -- among other inspections we do particularly when we do construction inspections we're looking at the qualifications and making sure they are up to dates on their qualifications. Debra, we had a Shelly Meyer.

MS. SHELLY MEYER: I'm here tomorrow.

MR. MAX KIEBA: And I appreciate those that will be here tomorrow. Dorothy Siefken.

Tomorrow. Maybe Julie Slade or Glade? This one is tough. Scribble? Okay. What's your name by the way? What's that?

Paul Glade. Okay. Good. Dan Harvey.

MR. DAN HARVEY: I'll be here tomorrow.

All right. Lisa Durks

>> I'll be here tomorrow.

>> Jenny GoldSmith

>> Be here tomorrow.

>> Denise Kleppe

>> Here tomorrow.

MR. MAX KIEBA: Washington D.C., Philadelphia, water? I have to say go birds. You say Philadelphia, I have to say go birds, Philadelphia Eagles. Someone did invite me to farms and some point I want to take you up on the offer and visit your farm at some point when I'm allowed to. I think so, yeah. I was planning for a meeting here last couple days so -- Susan Stoefen, er? John Aspray? Robert Mezzario? Tomorrow? Mamud Patel? Christina Growhengen? You guys are loving me trying to to pronounce these names, aren't you? Lee and Julie Koffman. Tomorrow? Go for it.

MS. JULIE KOFFMAN: My name is Julie Koffman and my husband and I live in Shelby County on our farm his grandfather him farm it and we have most of our family lives on this 180 acres, 15 of us and eight of us live there. And then our daughter and her husband want to build on the farm. But the Summit wants to put a pipeline through the middle of our farm. And the kids aren't sure they want to build there although it's a beautiful setting, it's what they always wanted to do, they moved back our daughter started a business because she wanted to live close to the family. And it's very heart-breaking to think they maybe have to look somewhere else and they wanted to start next summer. We don't nope what to tell them. I don't even know if I want to live there. I love my home and my -- I mean, and I just -- I understand that CO2, this kind of pipeline, I know what CO2 does to people. It is an asphyxiant and I understand

about finance and that this isn't about saving the planet. It's not about saving the planet. This is about making money, and I'm a capitalist and I'm not against making money. We're in business so we make money as farmers. And it's gonna impact our land values, and it's also -- it affects our property rights. We have rights in America. And I feel like -- we talked about accountability, I don't feel like passing it off to the IUB to decide. It just allows them to escape -- we can vote our representatives out of office if they don't protect our property rights, which they're not doing. But we can't fire the IUB, who are appointed. And this isn't right. This isn't right. This is America. It's not becoming America. What's going on? It's just -- and nobody seems to be listening. They say -- I mean, I think that some of you really do care but we aren't getting any answers here today. And it's very, very frustrating to those of us who truly love the land. There's a lot of, I think most farmers, maybe all, are really truly environmentalists. And this stuff is gonna damage the -- doing it under a masquerading ago environmentalists but I don't think they are if they are putting the land and the people at such risk but they say oh, we care about you. But I don't really feel very cared about right now. Thank you.

[Applause]

MR. MAX KIEBA: Dean Kluse

MR. ROBERT NAZARIO: Can we go back to Robert?

MR. MAX KIEBA: You're on the list. How are you?

MR. ROBERT NAZARIO: Good, sir. I want to thank you for coming out here and hearing the people speak. This country -- this country was founded by we, the people, backing each other up and only a small limited of those people actually partook in the fight. We are today's warriors, today's patriots and put our honor and our resolution together to overcome these pipelines. My history. I am not from around here. This is my adopted land. I've been here since 1994, my wife is lowan and I trace her roots back to Plymouth Rock, a descendant of William Brooster. I'm a merchant marine officer and I whooshing for ARCO and -- I was on board when that happened. I've been employed as a merchant marine officer since 96, prior to that I was seaman and became an officer with hard work. I worked on oil tankers. I know pipelines, I know systems, I'm not an engineer, I was an operator. We carried crude oil, mostly, but I've worked with jet gasoline, NAFTA, benzene, diesel, MTBE and others. I started with

ARCO, went to Phillips and never switched hands, the companies switched hands on us, and I became an employee to all those. We talked about best practices. Knowledge-sharing. Lessons learned. We use root cause failure analysis to share our information. We use after action reviews. We read the NTSB reports and shared them and learned from other people's mistakes. Engineering controls, but accidents still happen. The Exxon Valdez went aground and the incident the lady talked about that was 227,000 gallons of gasoline that leaked out of that pipeline. That's why those kids died. One guy who was consumed from the smell, and he passed out in the river. The other two kids burned to death. Pipeline safety is incredible. You guys are doing a job. I want human safety to be at the forefront. And I want to preserve the lives that we have here. No amount of life should be collateral damage and we learned from that. We should -- we should implement that moratorium and nothing, no hole should be dug until the -- until they have received all the permits throughout.

Those citizens here, those citizens here that have not signed, do not sign. If they employ eminent domain, we will see this in the highest court of the land and we will become victorious because we speak safety but this is about our constitutional rights. The fifth amended, taking clause and public use, this is a fraud project and we all know it. This is from Klaus Schwab and the World Economic Forum and an agenda 2030 that you will own nothing and you will be happy. It's fraud and there is no statute of limitation on fraud. None. I've written to every member of our general assembly. I've written to our emergency management guy. I've written to our board of supervisors. I hear it's just a pipeline, we deal with it. No. A crude oil pipeline runs on maybe 600 pounds of pressure. This is 2200 pounds of pressure. It will zipper. I've dealt with arresters, I've dealt with all kinds of engineering controls. Human element, faulty equipment, and a guy sleeping by the gate that the doesn't see the drop in pressure and we're all dead. What is CO2 used on a ship? We carried a hundred 50 bottles of CO2 in liquid form. Why? Fire fighting. We sealed the space in a fire, if there's somebody in there, we he try to rescue them. If it consumes the ship, the master has to make the call, that person in the space, unfortunately, he will be dead. We seal the space, we employ the fire suppression system, and then we -- and then we keep it sealed and monitor the temperature on the outside. It kills the fire triangle but all human life will be snuffed instantly. This is what this is. What else? Foreign

influence. They talked about foreign influence. There is foreign money in this. And we, the citizens of Iowa, demand to know the investors that are buying into this. It's China, Korea and others. They wanted this to pass in the ninetieth assembly, I believe this is the ninetieth assembly now. They rushed it through thinking it was going to be a done deal. You guys stood up to it and I commend you for it. I'll be in the middle of two of them in a pristine area also in the county, Harding county. I'm a friend of Stockdale's so resist, and we'll see them in court. Save your pennies because the constitution is on your side, not on theirs.

[Applause]

MR. MAX KIEBA: I do want to say thing for your service. So thank you. Steve Pinkle Dean?

MR. DEAN KLUSS: Thanks. Dean Kluss, county supervisor. It's been stated here today that charged with setting the safety standards for design construction, operation, and maintenance of hazardous liquid pipelines. Yet in part 195, 210, it talks about location. So do you have jurisdiction over location or not?

MR. MAX KIEBA: A pipeline?

MR. DAN KLUSS Correct.

MR. MAX KIEBA: We don't set where it is. 195, 210, someone help me, what's the name --

MR. DAN KLUSS: Location. Sews what it's talking about is location of valves. There are aspects of the regulations that say for instance, where valves can be placed, typically on each side of the, that's a location of valves.

MR. DAN KLUSS: Actually it's not. 195, 210, pipeline location.

MR. MAX KIEBA: Well, that's the name of it. But as part of it it's valve --

MR. DAN KLUSS: So it's only the valves

MR. MAX KIEBA: Correct. Not the location of where the pipe is actually laid, correct.

MR. DAN KLUSS: So that falls to local jurisdictions, states, and counties. Correct?

MR. MAX KIEBA: Yep.

MR. DAN KLUSS: Thank you. That was my honestly question.

MR. MAX KIEBA: Steve Pinkle?



MR. STEVE PINKLE: Good afternoon. My name is Steve, Shelby County supervisor and five generation century farmer. I want to thank you for having us in Des Moines, Iowa, appreciate that a lot. I appreciate all the land owners that have taken the time to come out here today and voice their concerns. And I hope when this two-day event is over with we get some clarification and we need the leadership from PHMSA, because when we bring up concerns about the pipeline back here, it always comes back to, well, PHMSA preempts that, PHMSA is in control of that, PHMSA is in control of this. And I've heard three instances today where that's not the case. And so I ask what is the role to counties, county supervisors, what role do we play in protecting their county's economic development areas and public health risks from CO2 hazards? We need to know that. And what just really baffles me is why you allow the dispersion modelling to be kept secret. I've asked for it since October of 21, as a county supervisor, because my role is to protect my county and my citizens. I can't do that by reading minds. And I think, especially, especially the land owners who live on that land, have a right to know what they are dealing with besides a county trying to protect -- we have economic development areas around our county. We have an ordinance, a comprehensive plan, that was put in effect 25 years ago, and the people before me stated in there without exception we want two miles around each of the cities in our county to grow, to protect housing, who wants to live there, to protect our economic development area, our industrial parks. Why are you not enforcing that any pipeline company that comes that they have to follow those rules? We have a city in our county, they are within a quarter of a mile and a few hundred feet from a baseball diamond for little kids. That shouldn't be allowed. And what I'm not saying in our county has never said we don't want the pipeline in our county, we all can play in the same sandbox but we need to play safely. And I heard somebody ask today about wells, are you in control of that. No, you need to be talking to your county. Setbacks were brought up. You're not in control of setbacks. You need to be talking to your local jurisdiction and county. We did that within a few days, we got sued. Now we're in federal court. So on one hand, the one entity is saying this is what you need to be doing, and you can't do that, and the one entity they are pointing to accommodates back to us and says well, that's what you should be doing. And then we go to try to enforce our ordinance and then we get sued again. So we got two lawsuits. We need

some leadership here on whose role is which and I hope we all can be partners. We're talking about protecting people and livelihoods. So I expect and I challenge you to please, please be listening to what you hear today, and we all can play in the same sandbox. Thank you.

[Applause]

MR. MAX KIEBA: We have a correction on 210, I apologize, someone said valves but it's not valves, it is pipeline location --210 is pipeline. Right of way must be selected to avoid as far as practicable -- and places of assembly. This is part of our code. Doesn't say what as far as practical is. Some of those aspects. Does anyone know -- this is on the fly -- anyone know if So back to my original question. Do you have jurisdiction on location and routing?

MR. STEVE KLUSS: No, not routing, no.

MR. MAX KIEBA: Yeah, go ahead, do you want to --

MS. LINDA DAUGHERTY: So to understand why we're giving you weird answers is because on the natural gas pipeline side, if this was a natural gas pipeline that was going to be built, FERC which is under the Department of Energy, determines routing and location. They are the ones that say yes, the pipeline can be built and here's where it will be built.

MR. STEVE KLUSS: My understanding is that the -- that the state of Iowa's utility board will say where it can be built and if it can be built. Is that correct or not?

MS. LINDA DAUGHERTY: I can tell you it's not us, it could be the state. State by state varies. And so I can't make a call. I don't know if North Dakota or South Dakota or Iowa or on Nebraska where the lines are whether it's the state level, county level, or the county. If you're the county commissioner that was just speaking, if he has the ability to set -- to determine land use --

MR. STEVE KLUSS: He already has. So have we.

MS. LINDA DAUGHERTY: That may be where you are. At the federal level there's not a department that I'm aware of other than on federal lands that can determine the route of a pipeline for a liquid CO2 or -- congress has not given us that authority. They've given it to FERC for natural gas but there's no equivalent authority at the federal level for hazardous liquid CO2 or and hydrous ammonia

MR. STEVE KLUSS: Then you need to ensure the pipelines that are wanting to build these -- the companies that wanting to build these pipelines come to the county first and read our ordinances and read our regulations and our setbacks before it goes to the state and asks for permission to build.

[Applause]

MR. ALAN MAYBERRY: I'm going to say that's a fair point. Among my many notes for today setbacks, it's been a huge issue and we definitely hear you. Our approach onset backs has been to provide a tool that referred to as PIPA, an acronym, stands for pipelines and informed planning alliance. It's a stakeholders came together to develop guidance for city planners, county planners, on development around pipelines and understanding the risks. One note I have, a takeaway, is to reinvigorate that process to make sure we update it, because it didn't apply to new construction which is the issue you're dealing with now. It dealt with developing around existing pipelines. That's been our focus is really, has been to provide guidance to counties, planners, to use this document to help them understand about the risks of development around pipelines. But I appreciate the questions and the comments related to this, because it's definitely something we're taking back.

MR. STEVE KLUSS: Again, it's not about development around existing pipelines. We're talking about new construction around existing towns that have ordinances and regulations in place.

MR. ALAN MAYBERRY: Right. And pipeline operators should be covered, are covered, by those ordinances and those -- which provide those -- and they vary by county. I imagine. That have different requirements for --

MR. STEVE KLUSS: They do --

MR. ALAN MAYBERRY: For development and utility corridors and those are outside of pipeline safety regulations. Those are more how you plan your -- land use planning within your respective jurisdiction.

MR. MAX KIEBA: I want to clarify there's a second part of 195, 210, maybe some people heard the 50 foot thing but mine located within 50 feet unless it's provided with a least 12 inches of cover that's more of a depth of cover additional protective measure. At least 12 inches of cover

in addition to what's prescribed in 195 --There's other aspects of depth of cover parts of code depending where it is, what's the depth of cover. Byron Tabor.

MR. BRYAN TABOR: My name is Byron Tabor, live in cedar rapids Iowa, I'm an affected land -- okay. Also an affected land owner. We own property north of Manchester which is in Delaware County. I have been in Kiwanis 30 years and 20 of the 30 years I did, I was running something called pediatric trauma kit program in Iowa where we went out and we gave pediatric trauma kits bags full of child sized equipment to all the volunteer first responders squads in the state of Iowa. There's a bunch. All right? These are \$400 bags, we gave away, I don't know, like 450 or better. Because these quads did not have the funds to have the equipment that they didn't really expect to use very often. All right? Most of their calls are grandpa had a heart attack or something like that. It wasn't child related, so in their limited budgets they didn't plan for that. They just crossed their fingers and hoped it didn't happen. All right. Today it seems like we're talking about safety is involved in keeping the CO2 in the pipe. All right. And obviously in the discussions here nothing is perfect so it's I think pretty much everybody can agree that it's not if but when. All right? And so I like the earlier comments here about, you know, not only training these guys but also providing them with the equipment, because they can't afford 400 bucks for something that's more likely to happen than this pipeline rupture, they are definitely going to be a lot of people out there just crossing their fingers and hoping it doesn't happen. And so I think if we actually looked at that, you've got two choices. Either you make the pipeline companies cover the massive amount of safety equipment that would have to be spread across the state, which even then, that's not a great solution because a lot of these squads are going to be quite a ways away from people, I know, there's some little squads that love the volunteers they are dedicated are, they do a great job. But in my opinion I think the other thing we should be looking at is guaranteeing that ruptures will not cause a plume that's going to sit out there for six, seven hours and kill everything for miles around and stress the crap out of these poor EMS people that are trying to protect their neighbors. So I just hope that you guys, in the interest of safety, consider safety outside the pipeline as well as inside the pipeline.

MR. MAX KIEBA: Thank you. And what's been publicly already mentioned in our rule-making summary of emergency response is a big part. I think we heard a lot today, a lot of these are volunteer fire departments. I was in one too outside of Philadelphia, and yes, I know the limited resources you have as a volunteer firefighter, I was in high school so I helped, fought one fire and then I was in smoke the rest of the day in high school as well. If it hasn't been already mentioned, I think it's been said publicly, Satartia, we have acknowledged could have been much worse if it wasn't for the heroics of the first responders. If any first responders are here, or those around Satartia, I just want to applaud them. They don't get enough acknowledgment.

[Applause]

MS. DENISE CLEPPE: Hi. Denise Cleppe. What I wanted to mention the fact of earlier today, in a continue to hear; the don't worry about it, the CO2 pipeline the same as all other pipelines. Yet just now, we were just told again of looking at the regulations, that they fall completely under different jurisdictions. And hearing that, they are not the same. And hearing that up there, of saying the fact of well, just don't worry about it, when the fact of, it was just stated from what I understood, is the placement regulation is completely under a different jurisdiction of how it can be. So they are not the same of how it is handled and what the implications are to the safety of people. Again, that's why we're asking for the moratorium for stopping until it can be if I could out of who the right people are to do that. We're hearing one thing in the morning and then another thing in the afternoon. Thank you.

[Applause]

MR. MAX KIEBA: We're on page two. Martin Maher?

MR. MARTIN MAHER: I want to thank the PHMSA group for coming to Des Moines and listening. I'm from Iowa a farmer and I own land in page county in southwest Iowa. Carbon is intending continue to invade in order to install CO2 pipeline. When someone had the first meeting they promised to locate pipeline on the perimeter of the farm to cause the least amount of disturbance to the land in some places they did follow their statement but not whether it came to my property. The first plan was to cut through underground power lines and through a grain bin complex that I had built just one year earlier. That plan also cut

through seven terraces and nine tile lines I was not pleased. But they were not interested in that. They have moved the survey plan to go with the 300 feet of my residence on one side and 180 feet of the grain bin complex on the other side. That's probably the width of in room. That's close. I don't want it that close to the residence I have my children and 12 grandchildren around the house and the complex each fall. -- for many structures and work with all the land owners for set back distances. They didn't work with me. The last thing is this is where it will be and there will be no changes. I don't want their pipeline that close due to possibility of release from the pipeline as was stated it could be deadly because as you know compressed CO2 travels they claim 1200 feet in four minutes. Where it goes depends on wind, topography, and other factors I doubt you would want a liquid pipeline a few hundred feet from your residence. If there's a release the local EMS are allowed to set up an safety perimeter only and wait for hazard matted people out of Omaha to rescue anyone inside the perimeter in that a run hour drive after the HAZMAT people are mobilized. Good luck to the people inside that perimeter. Again, I ask do you want to live that close to a high pressure hazardous gas pipeline? I'm not going to sell my residence to get away from the pipeline as I would be selling it at a loss due to the proximity of pipeline to the farm. This farm has been in my family 123 years. My immigrant grandfather -- excuse me -- my immigrant grandfather bought this farm and built this house that he and my father and myself have lived in and farmed all those years it was a beautiful setting until this corporate greed with no regulations to protect land owners and residents showed up. Why should I end up my life and my farmer heritage for a project that does not support the common good. Des Moines Register Poll 78 percent oppose this project. Now, for what PHMSA can do. There needs to be a moratorium on carbon pipeline proposals and carbon pipeline installations. We have counties with elected supervisors who know the rules situation. They are placing distance requirements for pipeline safety because you don't have any regulations about that. And as Steve said, we get the run-around. Well, PHMSA sets the regulations. Oh, no. The county sets the regulations. The state sets -- who sets the regulations? As a result, counties are being sued by pipeline companies being threatened not to pass regulations for fear of litigation. You need to develop the strongest rules possible to safeguard the public. Additionally, you need to clearly state what local and

state governments can and cannot do to protect their citizens. Can the local governments like the individual from Dakota was talking about on the travel reservation, they have the right to set their regulations. But Summit is telling us counties don't have right to set the regulations only PHMSA sets the regulations and PHMSA says well it's a county's job to set the regulations. Somebody needs to take a stand somewhere. Quit passing the buck. Thank you.

[Applause]

MR. JOHN HOFFMAN: Want to thank you PHMSA for being here also. I farmed in Delaware County and I hate spending the whole day when I know I got an early day tomorrow not having more concrete absolutes I can tell my wife we learned this today. It's funny that Navigator is lined up I guarantee you every one of our questions would have been answered in a concrete way we would probably believe them right? No. And I appreciate the fact that you don't have the answers to everything because there's a lot of area that you and we don't know and that's why we're here, hoping maybe they had a few more concrete answers for us, because we're not getting anywhere. You can understand why everybody wants a moratorium. Your panel, have they answered two concrete absolute questions? I don't think so. They are studying it but if they haven't got an answer how can everybody else has an answer the pipeline companies all have an answer. I have to leave today with the scenario and I gotta have an answer, I love it if each one of the PHMSA people could weigh in on this, let me give you a scenario. I live on a farm, I pipe runs the five feet below my house five feet deep, eight inch pipe, 20 miles between shut off valves. It ruptures at 2:00 in the morning. I want to know are they comfortable living in their house at that point or better yet, would they help us with the study and staying 50 away when we rupture this thing who are would they feel a lot more comfortable 500 feet or no feet? Don't wanted to be part of it. That's why we're all here. That's probably the one question in the questions right there we know it's not safe. I want an answer from them. They gotta have that answer. If they don't even know where the kill zone is, man, you got your work cut out, it's never -- you got another ten years of studying if you can't answer that but we don't know what you're going to maybe the pipe out of yet. That's my question. I need to know. Go home and tell my wife we've concluded that yes, we're safe at 50 feet. Can everybody weigh in

on that so I can go home and have a concrete for my community and my supervisors and everybody else? That's what I'm asking.

[Applause] Not that complicated really. Not to me.

MS. LINDA DAUGHERTY: I have family members that live near pipeline. So it's a real question for -- not CO2.

MR. JOHN HOFFMAN: That's not the question, though. We just have to stick to the question. We're all on a time thing. We want to get going. We want a quick answer to the question.

MS. LINDA DAUGHERTY: So there's a couple things you have to think about. You can't hear me. Eat the mic. You still can't hear me? Okay. If you have a pipeline the distance away from a pipeline for it to rupture, CO2. One of the things that's important is the CO2 going up? -- It goes up. Depending on the weather. Depending on the weather.

MR. JOHN HOFFMAN: There's no breeze that day, okay. So.

MS. LINDA DAUGHERTY: So worst case scenario, I would want my house to be at a higher elevation.

MR. JOHN HOFFMAN But if you're not, that's what I'm saying. Even with the terrain --

MS. LINDA DAUGHERTY: Do I have trees, do I have buildings? And then I would probably shelter in place. High elevation. You asked me for my opinion. You asked for my opinion.

MR. JOHN HOFFMAN: I wanted everybody's, I need all the answers yet today. I don't know if you can get all of us. It's calm out. Air isn't moving. I've got 20 miles coming out with the safe zone, where is the kill zone. Boom, 80 moves out of there where is the kill zone before it even moves.

MS. LINDA DAUGHERTY: You're talking about immediate impact. That I can't answer, I don't know.

MR. JOHN HOFFMAN: But those are things we want to know today.

MS. LINDA DAUGHERTY: I agree. That's why -- that's what we're looking at. Now, if you're looking about pollution where the cloud will flow, that kind of stuff. That's the stuff that they want to make sure we understand. There's actually been some modeling on this. This is what we learned about Sartaria. It didn't behave as expected to behave. We learned. We're trying to figure it out. You asked a question. I'm telling you my answer and then I'll hand it off to



someone else. Everybody in here, you've got a lot of PHMSA's in here to answer. Can't all the PHMSAs if I was lower elevation I would personally with my knowledge of pipelines, knowing how loud that would be, I would be alert pretty darn quick because I know what it is, so let's make it more difficult. If it was my aunt, if it was 100 feet away, I would be comfortable. I would be. You asked me for my opinion.

MR. JOHN HOFFMAN: That's true, I did. I appreciate that.

MR. ALAN MAYBERRY: I respect Linda's opinion, but I can't really give you an answer. There's just so many factors. And I want to clear up one thing. We talked about it earlier today. We do have requirements for operators to model dispersion and the impact. So we have taken that enforcement action related to that. But your specific case, I would expect -- one thing we do expect with the operators is that the land they cross but they engaged with the public and make them aware of ways to protect their safety in case there were an unintended mishap.

MR. JOHN HOFFMAN: I thought I made it about as clear as I could. I'm just amazed. If I ran my business this way I'd be broke. You don't have an answer. But it can't be that complicated. Do you want to be 50 feet from that rupture, that's all I'm asking. Are you comfortable with that? I just want to know, are you comfortable at 50 feet. You're just going to watch it admire it or run.

MR. ALAN MAYBERRY: It's obvious if there was a sudden release rupture it would not be a good place to be.

MR. JOHN HOFFMAN: But navigator is comfortable, they're comfortable that's why we should believe them.

MR. ALAN MAYBERRY: That's why avoiding that. Our approach is avoiding that. And this input has been great today. Boy. There's nothing like getting the input with the passion you guys have and we really appreciate that. I think it really adds meaning to what we do. But anyway.

MR. MAX KIEBA: We do have a few more on the list. We're going to end before 4:45 for a variety of reasons. No 5:30 is the end. Yes. This is what we were told by the hotel here. Denise Fallon. Denise. Denise Valer. That might be Dennis. I apologize. That's my fault, Dennis. There is no E in there.

MR. DENNIS VALEN: I've been called worse. I just have a few comments here. I'm a fifth-generation farmer. If you would have told me 15 months ago that I would take off a day when I have 25 things I could do today, drive to Des Moines and fight for my land, my family, I would have said you're nuts. But here I am. I guess the safety is what we're here to talk about here today. I guess my family, my livestock, I don't know if any of the members have pets at home. But I got a couple hundred. They're called livestock that I'm pretty fond of that I've worked the last generation to build up. And I guess I have a problem with the fact of every morning I'm going to get up and wonder is this my last day. Is this my son's last day who farms with me. Is it my grandson's last day? Is it the end of my business? On my particular piece of property we have a natural gas pipeline. I guess this is maybe a question for maybe one of the other panel members, but have they done anything on -- they want to run the CO2 pipeline about 90 feet from the natural gas pipeline. It's what I would call double jeopardy. I think if there's a problem with either one. It's probably going to take the other one out. I know the natural gas sends me lots of letters saying that if I smell gas I should call them immediately. So this particular material I won't have the opportunity probably to smell it. And that would be a safety thing. I don't understand. They say they won't put any scent in it, I don't know why, maybe it won't do any good. But they seem to just stonewall when it comes to safety. They just don't want to tell us anything too much about it. They want to release it after they got permission to go ahead and do it because I think if they told us what was going to do we'd be a lot more upset. I guess I want to thank you for coming. I didn't think I was going to get to speak today. So I was relaxes back there. I guess thank you for coming but this is a very serious deal. I guess I'm 69 years old I can't think of a more serious thing in my lifetime. We're talking wars and everything else here. That's more dangerous to the people. And the people in this room are the real people. These politicians out here toting around who aren't going to be living by it every day and seem to kind of want to ignore us I guess that's about it. Thank you for coming

[APPLAUSE]

MR. MAX KIEBA: I think I asked this earlier. Move the teal to Grant Gardner.

MR. GRANT GARDNER: Right here. Grant Gardner from Linn county. And I'm happy to have the

privilege to speak to you. I want to look at this from a little different perspective. We're talking about I know the meeting is to deal with the regulations for safety on the pipeline. My question is how necessary is this pipeline to start with?

[APPLAUSE]

When I was in high school. It was mandatory that we took biology. And when I took biology, one of the things we learned in there was carbon dioxide in the atmosphere is taken in by the leaves of green vegetation. Photosynthesis and water from the ground is converted in the plant to sugar and oxygen is released back into the air. So we have a natural cycle going here it's my understanding that greenhouses buy CO2 in order to enhance the growth of the plants in there. So what's the problem -- currently we've been letting the CO2 go into the atmosphere we've had some phenomenal corn crop records of recent years. Where is the science to say that that's not a related possibility. One of the things I've learned from necessity, the pipeline is being necessitated because of the requirement to capture the carbon from the ethanol plants. That's the biggest reason from what I understand on that is California will not buy Iowa ethanol unless we capture the carbon. Well, who is to say in five or 10 years that once we get all of this into place, that California is not going to come up and say because they have a habit of doing it, oh, ethanol causes cancer, therefore we're not going to buy Iowa ethanol. And there we are sitting with this expensive pipeline. This expensive equipment in the manufacturing in the ethanol plants to capture the carbon and we start losing our market to California. I say the heck with California, let's look out for Iowa and Iowans.

[APPLAUSE]

Thank you for your time and I appreciate it. God bless everyone here and God bless the United States of America.

[APPLAUSE]

MR. MAX KIEBA: I think we asked this name earlier, Susan and Jerry Stofen. S-t-o-f-e-N. I apologize, you've been patient up there. What's your name?

MS. HELENA HAYES: I'm one of those 10-letter swear words today also known as a politician.

[LAUGHTER]

I'm representative Helena Hayes, and I represent Mahaska county. I haven't heard the county

yet. I want to make sure it's on record because I want to make sure that they get included in the conversation. I'm one of the freshmen here in the legislature in the Iowa House, as are 23 others who have pretty awakened what's going on around us especially during COVID and this pipeline. Mahaska county, I think I have about 150 landowners in my district that will be affected by this. And unfortunately there's only about five of us here today right over there, thank you guys. And I've been asking that question as to why I would represent so many people and yet they not be here out of concern for themselves. And it was suggested to me today that perhaps is because we had the Dakota Access already come through our area. And they're weary. They're tired. They tried to fight that. And they lost. And they're also being told this is just another pipeline. And there's nothing they can do about it. And it's a done deal. And they just need to accept it. So we have a bit of a defeated attitude by area. That's why I want to say thank you to everybody in the redshirts today because you inspire me to go home and really inspire them to rise up and to stand for what they believe in because they don't want it. I'm hearing it. I'm just -- they just don't believe they can do anything about it. But you guys are proving that that is not true. Something can be done about it. I keep hearing this word today that starts with the letter M. Moratorium. That's one thing. In my county, I have one landowner, in particular, who a pipe was buried six feet deep and eventually they hit the pipe with their equipment when it was only two and a half feet deep and they were fined \$50,000. So in this case, let's say you nick the pipe, will the landowners -- I know this isn't PHSMA's jurisdiction either but what happens if you damage the pipe, the landowner does, and will they be fined for something that they never intended having in the place in the first place. I'm hearing indefinitely. They also have a lot of concerns about insurance. They're also being rejected. Liability insurance. I'm also hearing a lot -- actually, I didn't hear that too much here just a little bit towards the end. I just want to drop some of those words again. Agenda 2030, Paris accord. This truly is -- and thank you PHMSA, you guys are listening well. These people haven't been listened to too very well. Especially at the capital. I know they haven't.

[APPLAUSE]

Recently, in my paper, my local paper, in an article that was written, one of my landowners, I don't know if he's directly involved in it or not but he mentioned we need to maintain the

science and not be wrapped up in emotion. I think this is pretty hard to do in this case because we heard so many close testimonies today. But we haven't actually really got a lot of science either. That's what we keep these people with emotions keep demanding is the science behind this. But I just want to finish up by saying this is a solution to a problem that does not exist.

>> From the audience: Yes.

[APPLAUSE] Thank you.

MR. MAX KIEBA: Michael Farley. Michael Farley. Are you Michael? No Michael Farley.

Kim Hagemann. Hagemann, H-a-g-e-m-a-n-n. Therese Coaster. Joy Durant. D-u-r-a-n-t I think I asked this one earlier. John Asprey. What's your name, sir? John. A little closer to the mic.

MR. JOHN: I wanted to follow up on the gentleman there. He was asking how close he would stand to a rupture. So I did some calculations. And if you assume an 8-inch pipeline, 20 miles long, 2000 PSI, instantaneous release, that's like nine tons of TNT. 12 inches, 20 tons.

24 inches, 80 tons. If you assume a cloud -- so, first of all, I think there's an explosive release.

And after that you get to dispersion. So if you assume a cloud 10-foot high. 20 miles long, eight inches, that have a radius of 800 feet. 12 inches will be 1200 feet. 24 would be 2400. So the question is, for the gentleman in the Blazer, would you stand 50-foot from a nine ton explosion, yes or no?

[LAUGHTER]

MR. ALAN MAYBERRY: I said we're here to talk about safety and avoiding that kind of thing. No, I probably would not. No. Obviously.

MR. JOHN And the bad part is, I want to get into brittle fracture. That assumes instantaneous release so the bigger the fracture, the rapid. But zipper fractures and fraction mechanics and they're going against you on the CO2 pipeline. The chance of that is greater rather than slimmer. So this is serious business.

MR. ALAN MAYBERRY: Now, just to let you know, too, quick primer about our rule-making process, when we do come out with the proposed rule on CO2, or could be any rule for that matter, we do consider the consequence of failure. And there's a cost benefit analysis, believe it or not. We cost it out. Including the cost, social cost of carbon. But that does go into the

equation. So to the extent you're welcome to share your comments on the docket. Appreciate your input.

MR. MAX KIEBA: Is there anyone else I missed, I know other individuals said tomorrow. But anyone who signed up that has to go home today that I didn't call their name? You've got one more comment, question?

MS. MARY POWELL: I have a quick comment. Thank you to the politician for showing up today. We appreciate that.

[APPLAUSE] And any other ones that are in the room.

[APPLAUSE] I know we talked about safety. Our liberty we prize we maintain it's a belief it's not empty words. The governor also went on to say that Americans are not in support of giving billions of dollars in tax give-aways to millionaires and billionaires. Americans should not have to wake up every morning and worry about the next thing the government is going to do to you, your business or your children. We have constantly met at the very first meeting with Summit and said what are the safety risks of this? And their response, at the first IUB board was, don't pull the rug out from underneath us. We, as landowners, do not want our land pulled out from under us. And we do not want our lives taken away because people don't want to look at the safety risks and take a step back and say whoa, let's look at this and make sure we're doing the best thing we can to protect the lives of the citizens who pay taxes to support the federal government. We don't want the billionaires taking our land. We want our lives. Thank you.

[APPLAUSE]

MR. MAX KIEBA: I thank you all for being here. I think we have Allen for wrap-up. Wrap-up comments.

MEMBER PUBLIC: We've got one more. I'm sorry. I wanted to say if you're a landowner want to hear a panel for Mississippi folks, we have the Iowa tap room reserved. Go we'll give you updates on the other state's actions, too,

[APPLAUSE]

MS. SANDY SALMON: Hello. Thank you so much for coming here to listen to our concerns. I'm state senator Sandy Salmon from northeast Iowa. And so I had pretty much a front seat to

everything that happened in the Iowa Senate, I guess I should say everything that did not happen. And it was very difficult. We had a lot of wins in the legislature this year but it was all kind of clouded for me some for the disappointment for not getting protections in for our landowners on this pipeline issue. So that is something I feel very badly about. I worked on it. But it was like talking to that wall over there. We couldn't -- there weren't enough of us to make headway with it. So I feel badly about it. I'm sorry. I did what I could. But we will -- that door was closed. So we are going to look for other avenues and putting your trust in God and seeing where he's opening a window since the door is closed in this session anyway. I also want to put a bug in your ears about something that I think could really help us push this issue forward is that we have lots of presidential candidates trooping through the state. So since this is a property rights issue and a safety issue and an agriculture issue and just touches just about everything, we need to impress upon them that this is not just a Midwest issue but private property rights are going to affect everyone in the country. If we go down this slippery slope, it's going to affect everyone in the country. Right now we need to stop it and defend our private property rights. So we need to help educate these presidential candidates and help impress upon them this issue and help them to -- help to ascertain where they are going to stand on this issue. Are they going to stand with private companies, for private use, using taxpayer money, or are they going to stand with farmers, landowners and we the people. That's what we've got to find out from them and that will help us differentiate them if you are looking in at the GOP field of candidates. It will help differentiate them from one another. And that can help push this issue forward. It will affect in the courts. It will affect in the legislature. And you could see some big things come out of pushing this issue forward in that way. So I would encourage you to do that. Hope is not lost. God bless you guys.

[APPLAUSE]

MR. ALAN MAYBERRY: Okay. We're going to land this right on 5:30. Now, who said they had to get up early tomorrow to be out in the field? 4:30. I feel your pain. I get up at 4:30 to go into the city. Well, thank you. Thanks to everyone for being here. Like I said earlier, there's nothing like being here in person to hear directly from you. This has been a different twist on our normal public meeting that we either hold in Washington D.C. Oftentimes in Houston, Texas,

maybe Chicago, various areas. So it's been refreshing to hear directly from our stakeholders who are impacted by the policies that we do. We've covered a lot of territory today and thank you for sticking with us from the very beginning. I think everyone has been here the whole day. I don't think anyone really left. Just to give you a couple of statistics. We had checked in here 234 people for the room. It seems like more than that. But that's what we had. And then a whopping 850 watching the webcast. That's an excellent turnout. (APPLAUSE) That's probably a record for us. But we can see that. I don't have that right now. But we'll look at that.

Certainly -- I won't go through all the issues because I do need to land it on 5:30 and I have a minute just to say, first off, you heard a lot of jargon today. I was little concerned as we went through the day. Us who have been in the business a long time it rolls off our tongue if you heard something you didn't understand, I'll be here and so will the staff. But we need to vacate this room. We heard about setback concerns. We heard about dispersion modeling and the concern over the lack of standards, but that is being considered for the rulemaking. But aside from that, we do enforce in that area and have a history of doing that. Heard the issue of primacy and just understanding roles and responsibilities. And we have panels tomorrow. I think we'll be talking about geo hazards and the like. I did want to mention something about our grant program. We have a couple of grant programs that are catered to funding local government, first responders. And so to the extent that communities need to educate volunteer fire groups, city fire departments related to this specific issue, I would encourage you to pass information on our grant program to them and we can give you that. It's located on our website, PHMSA.dot.gov but we have our technical assistance grants which oftentimes we do fund at the community level to help first responders.

We have a full day tomorrow. We'll be kicked off tomorrow by chief counsel, defensive Chief Counsel. We look forward to that. Tomorrow we'll start at 8:30. 8:30 a.m. that's central time for. Again, just thank you it's been worthwhile for us. We're glad we're here and look forward to see you tomorrow. Safe travels tonight. If you're going out. Please be careful. Please be safe. Come back to us tomorrow. All right. Thank you. Meeting adjourned. 5:18 CDT



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