BEFORE THE

ILLINOIS COMMERCE COMMISSION

GAS INFRASTRUCTURE & SAFETY POLICY SESSION

Monday, November 26, 2018

Chicago, Illinois

Met pursuant to notice at 1:00 P.M. at 160 North LaSalle Street, Chicago, Illinois.

PRESENT:

BRIEN J. SHEAHAN, Chairman

SADZI M. OLIVA, Commissioner

JOHN R. ROSALES, Commissioner

D. ETHAN KIMBREL, Commissioner

ANASTASIA PALIVOS, Acting Commissioner

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1 I. OPENING REMARKS
Acting Commissioner Anastasia Palivos
2
II. ILLINOIS GAS DISTRIBUTION SYSTEM OVERVIEW
3 What do the current gas pipeline design attributes look like? What are the associated
4 challenges with maintaining and repairing an aging gas pipeline system? What are some of
5 the current projects?

6 Moderator: Janel Haretoun, Legal & Policy Advisor, ICC.
7
Andy Hesselbach, VP of Construction, Peoples
8 Gas

9 Steven Murphy , VP, Engineering, Construction, Southern Company/Nicor Gas
10
Eric Kozak, VP of Gas Operations, Ameren
11 Illinois

12 BREAK

13 III. CHALLENGES AND BENEFITS OF MODERNIZING GAS INFRASTRUCTURE
14 How can we modernize while maintaining an old gas system? What are the associated subsurface
15 challenges? How can we coordinate with multiple utilities and agencies?
16
Moderator: Ritta Merza, Legal & Policy
17 Advisor, ICC

18 Lori Traweek, Chief Operating Officer, American Gas Association
19
Bryan Pemble, Pipeline Safety Analyst, ICC
20
BREAK
21

22

1 IV. SAFETY CONSIDERATIONS AND GAS SYSTEMS OF THE FUTURE

2 How can data, technology, and analytics be leveraged to achieve our safety goals? What

3 are the key advantages to an upgraded system in terms of safety? What new technologies exist

4 that improve safety?

5 Moderator: Katharine McErlean, Special Assistant to Executive Director,

6 ICC

7 Tony Lindsay, Research and Development Director, Gas Technology Institute

8

Jonathan Peress, Senior Director, Energy Market

9 Policy, EDF

10 Eric Lounsberry, Director, Safety and Reliability Division, ICC

11

Tony Spiritoso, VP Commercial & Custom

12 Enablement, Itron

13 V. CLOSING REMARKS

Acting Commissioner Anastasia Palivos

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1 ACTING COMMISSIONER PALIVOS: We're going to go
2 ahead and get started.
3 Good afternoon. I'm delighted to be
4 here today to welcome you to the Illinois Commerce
5 Commission Policy Session on Gas Pipeline
6 Infrastructure and Safety. Considering the increased
7 usage of natural gas as an efficient source of both
8 distributed generation and a residential heat source
9 combined with concerns about the safety of aging
10 pipeline infrastructure, it is now more important
11 than ever to understand safety measures and recent
12 innovation in the industry.
13 There are many benefits to using
14 natural gas such as affordability, dependability, and
15 the fact that it's much more environmentally friendly
16 than other fossil fuels like coal, oil, and diesel.
17 And perhaps the icing on the cake is about 97 percent
18 of natural gas used in the U.S. is also produced in
19 the U.S.
20 A USA Today analysis of federal data
21 shows that at least 264 people were killed in natural
22 gas leaks, fires, and explosions since 1990. And

more than 1,600 people have also been injured.

Most recently, unsafe utility infrastructure had been a topic of concern in the news. Last September an explosion in Boston shook the city, while in northern California unsafe electrical equipment may have caused a disastrous fire. These are just some examples of why modernization efforts, investments in infrastructure, and proper safety procedure are imperative.

We are here today to talk about -- not only about infrastructure but also about design and operational procedures and how these elements are all components of a safe gas pipeline system.

Today we will hear from distinguished panelists who will discuss current gas pipeline system design attributes and the associated challenges of maintaining and repairing an aging gas pipeline system.

Panelists will also examine methods of modernization, subsurface challenges and relay the importance of coordination with multiple utilities and agencies in creating the gas distribution system

of the future.

We are aware of the weather delays caused by the blizzard -- just our luck -- so we hope that panelists who are unable to join us in Chicago today can dial in, so just bear with us today.

I would like to introduce our first moderator, and Commissioner Oliva's Legal and Policy Advisor, Janel Haretoun, to kick off our first panel.

Janel?

MS. HARETOUN: Thank you, Commissioner Palivos.

During this panel, we will discuss the gas distribution system in Illinois. Specifically, we will learn from our panelists what the current gas pipeline system design attributes look like, what the associated challenges are with maintaining and repairing an aging gas pipeline system, and what some current projects are.

To lead this discussion, we have with us today Andy Hesselbach, vice president of Construction at Peoples Gas; Steven Murphy, vice president of Engineering and Construction at Southern Company/Nicor Gas; and Eric Kozak, vice president of

1 Gas Operations at Ameren Illinois.

2 Please join me in welcoming our

3 panelists.

4 (Applause.)

5 MS. HARETOUN: Andy, you are free to begin when

6 you're ready.

7 MR. HESSELBACH: Good afternoon, everyone.

8 Good afternoon, Commissioners and everyone here in

9 attendance or on the phone.

10 I believe they asked us to stick to

11 ten minutes. My first part goes kind of quick to

12 cover a lot of material, and I'm certainly happy to

13 answer any question after that.

14 Here we go. So first slide I have up,

15 a map of our distribution system just to give you a

16 general overview. We serve about 840,000 customers

17 in the city of Chicago; a little less than 4,500

18 miles of gas distribution main.

19 On the map, there is two colors I have

20 there. And they're a little tough to see on the

21 screen, but, generally, if it is gray in color,

22 that's our medium-pressure, or the goal we're trying

1 to get to our higher-medium-pressure system. If it
2 is blue, that is all either low pressure or aging,
3 older cast iron on our medium-pressure system. And I
4 have another slide. I'll give you a little more
5 detail on that.
6 We have about 1,800 miles of material
7 yet that we need to upgrade in the next couple
8 decades. We have 270 miles of high-pressure line
9 that is the red lines you see around the area, both
10 in the City of Chicago and also going down to our
11 Manlove storage field in Central Illinois.
12 And we're interconnected with eight
13 pipeline companies that brings gas from Canada, the
14 Gulf Coast, out East in the Pennsylvania area as well
15 as out west.
16 The next graphic, a little more
17 specific to what we're talking about here -- there's
18 another graphic of the city. Here, we have main in
19 the ground that goes from 1859 and primarily up
20 through 1940. There is some cast and ductile
21 material more -- or newer than 1940, but that's what
22 a majority of it is.

1 If it is red on the map, that is pre-
2 1900s cast and ductile iron material. If it is blue,
3 it is from 1900 to 1940.
4 The piece of main we have, the glass
5 box that we brought in today, that's actually from
6 1959, which is a little telling. And it ended up
7 that vintage because it was only a couple of weeks
8 ago I thought "Hey, this would be a good piece of
9 material to bring in." And so we pulled this out of
10 the ground last week as part of a retirement.
11 But when you look at the deterioration
12 at the edges of that cast iron pipe, where you see
13 the rusting and deterioration, you know, that's 60
14 years old, keeping in mind, our oldest piece is 100
15 years older than that. It's over on Hubbard in
16 downtown. In fact, that's slated to be retired
17 probably next year.
18 So if you go on, what's really the key
19 technical drivers for when we're looking to
20 modernize? You know, there's a couple primary ones:
21 elimination of leak-prone pipe. That, again, is like
22 the piece of pipe you see in front of us. That's

1 where the material is just degrading from being in
2 the ground for a good length of time.
3 The other is -- which is really more
4 akin to what happened out in Massachusetts where they
5 had to over pressurization, it's not related to the
6 pipe being old and deteriorated. It's that the older
7 systems are inherently less safe just in the way they
8 were designed.
9 So what we've added -- and I have
10 another slide that will give you a little more
11 detail. We've added over-pressure protection on
12 medium systems, which don't function on low-pressure
13 systems. Easy access to shut-off. Right now, if you
14 have a house fire in one of these, there is often --
15 not always, but there is often no shut-off exterior
16 to the building. You either need to get inside that
17 property -- not a good place to be if there's a
18 fire -- or you have to dig up the front yard and get
19 down and cut off the service line; again, two
20 challenges.
21 And then an excess flow valve, again,
22 I'll mention just a touch more on that in a couple

1 slides.

2 On the environmental side, a reduced

3 amount of methane released. Methane, certainly a

4 more detrimental form of emissions than CO2. And

5 anytime we can cut down on the leaks, that also helps

6 us out.

7 Here, a slide that some you may have

8 seen before, I've used just to give you an example of

9 pre and post modernization. The left half of the map

10 is Rogers Park, a neighborhood on the north side of

11 Chicago. Every small dot you see up there is a leak

12 that occurred two years prior to the upgrade. The

13 map on the right shows any leaks in the two years

14 after upgrade.

15 Here's a map that I think is

16 interesting to show, and, again, glad to visit this

17 later on. I know it's a little faint on the screen,

18 but the left-hand side is a home, a typical home. We

19 have about 400,000 homes and businesses served this

20 way, where you have cast iron underground, goes

21 through a service line into the basement of a home,

22 there are no regulators or flow-valve limitations on

1 that old system.

2 For example, in Massachusetts when

3 they over pressurized, there's about a 300-fold

4 increase in the design pressure of a quarter pound

5 went up to 75 pounds. There's no regulators on

6 these. That means the piping inside the home has

7 also been overpressurized about 300 times its

8 designed level because you have no kind of barrier as

9 you do in a modern system.

10 If you look on the right-hand side,

11 that's what's going in the ground now. I guess all

12 my peers, the other utilities, put the same thing in

13 with their facilities. You have a meter on the

14 outside of the home. On the top there, you'll see

15 there is a regulator; that is the No. 1 that's

16 indicated on the drawing. You also have a

17 vent-relief valve. So if you overpressurize a main,

18 that regulator will control and maintain a consistent

19 low-pressure flow of gas inside the home. And you

20 also have a relief valve if you have problems there.

21 Below it, you'll see a No. 2. That is

22 the external shutoff valve. First responders,

1 utility crews, people who have been trained, can go
2 up and shut off the supply of gas to the inside of
3 that home. So a very helpful, quick way to
4 discontinue flow of gas into a home or a building.
5 And then No. 3 at the bottom of the
6 screen, is called an excess flow valve. Basically,
7 it senses if the consumption downstream of that valve
8 is higher than what you would expect for, let's say,
9 a furnace or a dryer or a stove. And so when the
10 flow exceeds that, it shuts off the fuel line as
11 well. So you have, kind of, three barriers of
12 protection with the modern-design system.
13 Just a couple other customer benefits:
14 aside from the safety elements, those 400,000 inside
15 meters, every three years that we need to get inside
16 those homes and businesses and inspect them. That's
17 every three years, we need to make arrangements for
18 someone to be home and let us into the house.
19 We inspected 126,000 of these in 2017.
20 That's how many appointments we needed to make. And
21 all your meter maintenance. So you have a battery
22 die on an automatic meter-reading device, et cetera,

1 we need to get inside of the home or business.
2 Also, medium-pressure while useful for
3 select customers, medium-pressure system supports
4 high-efficiency furnaces for boilers and furnaces.
5 For example, in Chicago, a lot of the
6 Chicago Public Schools have booster pumps, so that
7 their boilers will operate on low-pressure systems.
8 They need to increase it. You can remove those
9 booster pumps which is another device they have to
10 purchase and maintain.
11 Some residential high-efficiency
12 equipment also uses higher pressure, so just another
13 customer benefits.
14 The challenges, asked just to speak a
15 little bit on the challenges, and photos will tell
16 the story.
17 Traffic. Traffic. Traffic. 2016, I
18 was in the this room giving an update on the system
19 and the Commissioners had questions about some of the
20 challenges that they saw in their neighborhoods was
21 due to the traffic.
22 Parking is probably the biggest issue

1 we have. Parking and disruption to people's lives
2 where they don't have garages or alleys or it's just
3 congested. So pedestrian traffic, vehicle traffic is
4 a unique challenge.
5 Heavy congestion below the ground: I
6 have a number of pictures there where there's an
7 awful lot of stuff under the ground.
8 You have to coordinate with dozens of
9 entities. More than two dozen entities have to say
10 "you can proceed" before we can get permits issued in
11 the city. And there's good reason. There's an awful
12 lot of stuff down there.
13 And then there's numerous challenges
14 with high-efficiency installation. That's a fancy
15 way of saying if you were out in the suburbs, you
16 would run a directional drilling line underneath
17 roads and streets, and you wouldn't need to repave
18 them. There's so much other infrastructure
19 underneath the roads, that we often have to open cut
20 the road, disruptive to traffic, and then you have a
21 lot of concrete and asphalt you have do to
22 afterwards. So that adds up.

1 The last one is kind of a new
2 technology used occasionally. I have used it before
3 in other projects. Ground-penetrating radar. If you
4 don't know what's below the ground, they have devices
5 that can help you see that. But when you have so
6 much below the ground, you can't rely on the
7 readings, so that holds you back from some newer
8 technologies as well.
9 Next, I just have, kind of, a series
10 of pictures. On the upper-left there, you will see
11 our yellow pipe. It drops down below and goes
12 underneath the series of sewer lines, water lines,
13 fiberoptic and telephone lines, and comes back up to
14 continue on its way.
15 So that gets you -- the one on the
16 left is pretty interesting. That is a brick sewer
17 line, very fragile. It's like being in a shop: you
18 break it, you bought it. So we go to great lengths
19 to make sure these brick sewer lines stay intact.
20 And so you have to support them and take a lot of
21 care.
22 The next one in the center, rail

1 lines. We run into old rail lines all around.
2 And the other thing you see down there
3 is leftovers from the south side of Chicago when they
4 built up the roads to put in sewer lines and other
5 things below grade, they filled it in with the
6 material left over from the steel industry so you
7 find a lot of scrap leftovers from the steel industry
8 were used to fill the roads up that they put on top
9 of their sewer lines. And then we've got to dig back
10 around that. So that creates some challenges.
11 On the right -- I'll just keep moving
12 in the interest of time.
13 Upper-left, that is 18-inch natural
14 gas line, plastic. It is the outer hoop, here, up on
15 the table. I also brought in some new pieces of
16 polyethylene pipe. And you'll see where we have put
17 around the curve there and dropped down to a lower
18 elevation to move around some infrastructure.
19 Lower-left, we just prefabbed some
20 large pieces off site, so that when we come to the
21 city, we disrupt traffic for as little time as we
22 can.

1 And the right side of the screen is
2 just -- it's a little faint to see on the screen, but
3 there's a variety of other underground pipe you work
4 around.
5 So, here, working with other parties:
6 the City of Chicago has what they call their Office
7 of Underground Coordination. There's about 28
8 entities that belong to that. And for us to do work,
9 we need to work with all these entities. And we also
10 have to follow the several hundred pages of City of
11 Chicago Rules and Regulations that everyone needs to
12 comply with to make it all work.
13 So what that means is -- the slide --
14 I didn't mean for everyone to read this, but there's
15 a list of telecomm, fiber optics, sewer, water, city
16 electric, Commonwealth Edison, and a whole variety of
17 entities. Before you can get a permit issued in the
18 City of Chicago, you have to submit your drawing sets
19 to all these entities. They all have to say you can
20 proceed, otherwise you can't. And if they have a
21 conflict -- what they're looking for is conflicts
22 with their structure -- they can put a pause on it.

1 They put a denial in, and until you get that denial
2 released, you can't move forward.
3 So it's a critical, important step.
4 You wouldn't want to avoid this step. But it just
5 requires a lot of entities with a lot of stuff
6 underground to say that your good to go.
7 We had one recently where we went
8 underground, AT&T had a buried vault that they did
9 not know about. We didn't know it until we opened up
10 the ground. If you deviate by more than 2 feet from
11 your design, you have to go back to this group to get
12 reapproved. And when you've got a road open, a hole
13 open in the ground, you can see that slows you up.
14 So there is a lot of coordination in the city.
15 So in kind of summary and wrapped
16 around all of this, you know, the legislators, the
17 regulators, utilities we came together a number of
18 years on kind of a recovery mechanism and an audit
19 process or reporting process -- a quarterly
20 reporting -- that has been working and working well,
21 the documentation-reporting side of it.
22 The second one, the tragic events in

1 Massachusetts reminds us that corrosion is one
2 thing -- we definitely want to get rid of the
3 corroded, leaking pipe. But even on the non
4 corrosion-based issues, these low-pressure systems
5 are challenging to work with and don't have all the
6 safety features you'd certainly want in place. The
7 modern distribution systems are much better than the
8 19th century technology that they're replacing.
9 And, secondly, until we get through
10 two decades of upgrades, we're still gonna have a
11 low-pressure system to operate. So we spend a lot of
12 time revisiting how we do things, what we do, how can
13 we do it safer. We have debriefed on all the details
14 we are aware of from Massachusetts and how we can
15 make sure that doesn't happen here as we maintain our
16 aging system.
17 So I ran through a lot. I'm more than
18 happy take your questions later, but I think we keep
19 going to the panelists, correct?
20 MS. HARETOUN: Yes. Thank you, Andy.
21 Steven?
22 MR. MURPHY: Hey, good afternoon. I'm Steve

1 Murphy with Nicor Gas and Southern Company Gas with
2 responsibility for Nicor as well as Atlanta Gas Light
3 Company in Georgia and Virginia Natural Gas in
4 Virginia and Chattanooga Gas in Tennessee.
5 And I'm going to go over really what
6 Nicor system is and how it's made up. And it's -- of
7 course, a lot of gas systems are very similar, but
8 some are different as well. And I would guess some
9 of the things I would contrast with Nicor Systems,
10 it's a very large gas system. We have over 17,000
11 square miles and 2.2 million customers.
12 We also have a lot of supply of our
13 own. Our own supply coming from our aquifer storage
14 facilities. And if you think about over time on how
15 Nicor developed, it was a lot of smaller gas
16 companies got acquired by Nicor over the years, so
17 there is a real mix of facilities within that system
18 and designs and standards that go back decades.
19 So just, you know, looking by the
20 bottom numbers a little bit, there are eight aquifer
21 storage facilities. There are 376 wells out there.
22 And that's worth mentioning, I think, a little bit

1 because, you know, post Aliso Canyon, that some of
2 you may be familiar with in California, we're gonna
3 probably see a number of new regulations coming down
4 around those facilities, and we're already looking
5 closely at ours. We're making sure we feel strong
6 about the integrity that those wells have.
7 We also take gas to 95 interstate tap
8 locations. So we're receiving gas from 95 locations
9 from other interstate companies.
10 We operate over 2,000 district
11 regulator stations.
12 We have over a thousand miles of
13 transmission pipe and over 33,000 miles of
14 distribution pipe in the system.
15 So we're operating in 650 communities
16 within Illinois. And so that really gives us a
17 different kind of footprint where some might be a
18 little urban, some is more suburban, and then we
19 actually have some real rural systems.
20 Bottom charts, just to give you an
21 idea of the age of the systems, on the left there is
22 the transmission-pipeline system where you'll see a

1 majority of that pipe is 50-plus years old. And on
2 the right is a distribution system where about a --
3 half the pipe is 40, 50 years old.
4 As far as our current kind of
5 activities, Andy mentioned a little bit about the QIP
6 programs and at Nicor Gas we call that Investing in
7 Illinois. But through that program, in the last four
8 years, we've been able to start modernizing the
9 system. We've replaced all of our cast iron as of
10 October. All the cast iron in the system is retired.
11 We still have a small amount of
12 low-pressure left in the system, about five miles. I
13 think that will be gone next year, so we will not
14 have low-pressure here to deal with.
15 We have also replaced 130 miles of
16 bare steel, 20 miles of vintage plastic. We're
17 continuing to replace our storage field gathering
18 lines that come out of those aquifer storage
19 facilities, and we have done about 40 miles of
20 transmission pipe under the program.
21 As well as most of our copper services
22 are now replaced, we have about 3,500, I think, left

1 to go. We'll probably do it over the next year or
2 so.
3 So this is just kind of what we plan
4 to do in the next five years within our Investing in
5 Illinois program. We expect all the bare steel to be
6 gone within the next five years. There's about 110
7 miles of that left.
8 All the Aldyl A plastic will be gone.
9 All the copper services as well as any service
10 associated with the mains that we're replacing.
11 We expect our Aux Sable transmission
12 pipeline to be completely replaced.
13 The majority of our Dubuque pipeline
14 will be replaced within the next five years.
15 All the storage fuel gathering lines
16 and then a fair number of our gas conditioning
17 equipment that's out of the aquifer facilities as
18 well as some of the compressors that operate in those
19 facilities.
20 This is our plan. And then I think we
21 have to good line of sight to completing this. I
22 would caution though that we are going to see more

1 regulations coming down. There are going to be new
2 trip requirements coming down. There's going to be,
3 you know, the validation, maximum allowable operating
4 pressure validation, as well as underground storage.
5 And we will have to continue to look at those
6 requirements and assess those against our facilities
7 and prioritize our work against those. So...
8 I'll just briefly touch on the
9 benefits of our Investment in Illinois, or QIP plan.
10 It's really helped us plan ahead, multi-year
11 planning, really looking at the system
12 comprehensively and align our resources that way.
13 It does a lot for our contract. We do
14 most of this with third-party contractors. And it
15 does a lot for those contractors to have some line of
16 sight to what the work levels are gonna be year to
17 year. That allows them to invest in their companies.
18 Also, it has allowed them to invest in diverse
19 suppliers, both directly for us to do that and for
20 them to kind of invest and identify and mentor some
21 diverse suppliers.
22 So we have been doing a lot in that

area. I think last year somewhere around 180 million was in diverse suppliers. I think this year we're expecting to be above 200 million through that progr- -- through our program there.

It also lets us coordinate with municipalities a little more closely because we kind of have a line of sight to our work year after year. And then also, of course, it provides jobs and economic security.

Touching on some of the challenges -- and a lot of these Andy talked about too -- is just the -- how crowded the right-of-ways are, the ability to find space in the right-of-way. That leads to having to -- for some facilities having to acquire easements and acquire land rights for those.

I touched on this a little bit. The -- you know, we're made up of a lot of older systems that were acquired over time. So there is opportunities to manage through different pipe standards, pipe sizes, nonstandard fittings and those kind of things, that make leak repair sometimes more difficult, and replacing those facilities makes -- is

1 more efficient overall.

2 That also touches on the quality of

3 the records. Because having acquired these other

4 utilities, the completeness of their records and what

5 we expect PHMSA to expect out of the completeness of

6 records is, you know, changing and growing. So we

7 have to make sure we have all that and document our

8 MAOPs. And we're working through that now with

9 extensive record research and visiting sights and

10 actually exposing the pipe, making sure everything

11 matches up, and determining where those opportunities

12 to are to improve.

13 But some of the other benefits

14 allows -- I mean some of the other challenges:

15 getting -- keeping construction resources is always a

16 challenge. I think just because so many of us are

17 now in the process of improving our systems, it puts

18 those constraints on those resources. So that can be

19 a challenge for us.

20 And the permitting agencies, like Andy

21 mentioned, permits will always continue to be a

22 challenge. Not only the timing to get it, but the

1 expectations the municipalities may want as far as
2 restoration goes or limiting the time of
3 construction. Those kind of things can be a
4 challenge.
5 There has been more pushbacks to
6 remove retired pipe out of the ground which is an
7 extra expense, those kinds of things.
8 So those are some of the challenges,
9 and I think we will talk more about those as we get
10 into the questions.
11 And, really, this kind of touches on
12 the chart I showed a minute ago as far as what's
13 upcoming, but this is more of what's upcoming in 2019
14 for us. We'll continue to do bare steel replacement.
15 We'll finish up our copper services. We'll be
16 completing a majority of our meter move outs over the
17 next few of years which a lot of those will be next
18 year. We have about 144,000 meters that were inside,
19 and we're looking to get as many as possible pulled
20 out. It's hard to get every one of them just because
21 of space, but the majority of those.
22 We will finish -- continue on the

1 storage field gathering lines.

2 And then I just listed several of the

3 transmission projects that we will been working on

4 and some of their attributes in being from the 1950s,

5 1944, 1959. We will be focusing on those.

6 All right.

7 MS. HARETOUN: Thank you, Steve.

8 Eric, go ahead whenever you're ready.

9 MR. KOZAK: Good afternoon. My name's Eric

10 Kozak. I'm vice president of Operations for Ameren

11 Illinois.

12 I appreciate the opportunity to come

13 up here and talk a little about what we've got going

14 on down in the south part of the state.

15 So similar to what everybody else

16 talked about, you know, we have 815,000 natural gas

17 customers and we serve 1,200 communities. We like to

18 say that our service territory is larger than the

19 state of Indiana. So that gives you the idea of our

20 service territory.

21 I do want to point out 1,250 miles of

22 gas transmission. That's a pretty large number for a

1 company our size. 17,000 miles of gas distribution.
2 Most of it is plastic and welded steel. We got rid
3 of our cast iron approximately 1five years ago. And
4 we do also have to 12 underground storage fields
5 with 24 Bcf of working capacity. So that's kind of
6 the makeup of our system.
7 The modernization action plan, or the
8 QIP plan: aging components in our distribution system
9 which are prone to leakage -- again, that's a common
10 theme you've heard -- that's what we'll focus on.
11 We have a nine-year program to replace
12 some 350 miles of main and associated services, and
13 those are on the distribution side of the house.
14 We have replaced 160 miles from 2015
15 to 2018, 35 to 40 miles per year in a plan through
16 2023.
17 Total investment planned is about
18 210 million. And as I mentioned before this is all
19 part of the QIP Rider.
20 On the transmission side, we have the
21 aging components of the transmission system and most
22 of this is around the new PHMSA requirements that

1 have been mentioned by Steve and Andy.

2 So we have focused on our replacements

3 of our transmission lines. Like I said, there's

4 1,250 miles of line. And we replaced over 60 miles

5 from 2015 to 2018 and with 25 or 30 miles planned per

6 year through 2023 and a total investment plan of $760

7 million. And this is all part of the QIP program.

8 And it also states up there: So when

9 you have 1,250 miles of pipeline, where do you choose

10 to replace it? Where do you look at? It's the mains

11 that don't have sufficient records from the PHMSA

12 rules that are coming out and transmission lines that

13 are located in Class 3 or HCA areas, which are High

14 Consequence Areas. So those are the areas that we're

15 targeting.

16 The opportunities and challenges,

17 similar to the other panelists here, is addressing

18 the federal pipeline safety regulations for

19 transmission. So trying to meet those pending

20 regulations, that's one of the big challenges we have

21 coming up.

22 And on the transmission side,

1 easements are very old, 1950s, requiring updating.
2 You know, the easements that were written many years
3 ago, so they don't really meet the current -- today's
4 standards. That's probably one of our biggest
5 challenges.
6 And also putting pipelines back in the
7 same easement can be to a challenge because the
8 easements are so narrow, where people don't want them
9 there or, frankly, it's just not the best place to
10 put the pipe back in the ground. So a lot of times
11 in civil cases we had in for certification of public
12 convenience and necessity. And we have been
13 successful with that so far, so that's been good.
14 And that's what that next slide says.
15 It talks just receiving a CPCN for a transmission
16 projects near Hillsboro.
17 And the other issue that has come up,
18 has kind of reared its head, is railroad permits.
19 The issue there just is not having a structured
20 permit process from the railroads, a timeline or
21 requirements. They tend to vary project to project,
22 so it's hard to get our hands -- those can have a big

1 impact on your schedule, obviously. You have got to
2 cross a railroad when your doing these projects.
3 Then, here's just a few of the
4 projects: This one, we bored a line under Lake
5 Decatur. This was done last year. And you can see
6 the green represents the new line; the red represents
7 the old existing lines there. But that was a pretty
8 big bore project for us, over 2,000 feet bored in one
9 piece under Lake Decatur, so that was a good success
10 project for us done under the QIP plan.
11 Here's a couple other projects: Near
12 Peoria, on the left, and this one just recently done
13 this year from Centralia to Mount Vernon, on the
14 right. And that was about 13 miles, on the right
15 hand. I have to couple pictures of those.
16 You can see just the steel projects
17 take up a lot of room when you do the construction.
18 On the right, some of new things we're
19 doing. This is a new radiography technology. So we
20 X-ray every weld. And in the old days, what you
21 would do -- and we still use this form today, we use
22 film. Just like when you went to the dentist many

1 years ago. And he had the film, and he would come in
2 and stick it up. Now you go the dentist and he takes
3 a picture and puts it up on a computer screen, that
4 exactly what the thing on the right is doing. So
5 it's a much quicker process. It makes it more
6 efficient for the pipeline to get into the ground.
7 And this just talks about the
8 right-of-way and that easement. You can see from
9 this footage, you can see how wide, you know, if you
10 look at the trucks in the right-hand picture there,
11 how much earth you're having to disturb to put in --
12 and that was a ten-inch pipeline. So you can see it
13 takes a lot of room to put these projects, you've got
14 to dig the ditch, you've got to put the dirt in
15 another pile, you've got to string out the pipe, so
16 it's just -- so that some of the challenges we have.
17 And there is just some more photos to
18 give you an idea. New regulator station site, again,
19 acquire an easement for those.
20 And that sums up my presentation.
21 MS. HARETOUN: Great, thank you so much.
22 On behalf of the Commission, I'd like

1 to thank our panelists for educating us on the
2 overview of the gas distribution systems.
3 So let's dive into some questions now.
4 And anyone can take the first
5 question, so feel free to jump in whenever it's
6 asked.
7 I want to go to the Commission first.
8 Does anybody have any question?
9 COMMISSIONER ROSALES: Sure. If I could.
10 I just want to thank the panelists for
11 their work on their safety and with the QIP projects.
12 Especially Peoples Gas, I really want to mention the
13 progress that you have made since 2016, since we
14 first met.
15 My Commissioner -- my Chairman will
16 always tell me I can't say "but" after I thank you,
17 so I won't. I will say, "however" --
18 (Laughter.)
19 The one thing, Andy, that keeps coming
20 up and you need to get this resolved is when -- and
21 we see this as Chicagoans -- when you put the signs
22 up for no parking -- there is nothing that's more

1 aggravating to Chicagoans -- that when you put the
2 signs up for the date that you can't park there, and
3 then the day comes and nothing goes on. You have to
4 have to have that resolved.
5 And I don't -- it could be a number of
6 reasons. But it's your sign, so it's not about AT&T.
7 It's not about RCN. It's Peoples Gas saying you
8 can't park here. And then the day comes, and it's
9 usually more than one day, and nothing occurs. It's
10 infuriating.
11 There are -- I can understand there
12 are times when you're on a project and you have to
13 stop. That's another question that comes up, but
14 there's a number of reasons why that would happen, if
15 you need to shut down for a while. But when the
16 signs go up that you can't park there and then
17 nothing occurs, it gets -- we get more calls on that
18 than anything else now.
19 And I just want to be clear with you.
20 I understand the progress that you've made. And
21 really, I have seen it. And I want to be very
22 appreciative in thanking you for progress made since

1 our last, you know, since 2016. But that's the one
2 call that we continue to get. And I am just telling
3 you, that's the one part that you're going to have to
4 resolve.
5 MR. HESSELBACH: We will definitely keep
6 working on it. We do have to some folks who go
7 around to stop in and look; meaning, when do we
8 expect signs to be up and when do we expect them to
9 come down. One area we do -- there's always going to
10 be at least some gap. Because, if I have my numbers
11 right, the City of Chicago will not tow a parked
12 vehicle if the sign hasn't been up and not complied
13 with for at least 48 hours, so we will leave it up
14 there and there's usually a little gap at the front
15 end. But that's not long. It's only two days.
16 Because they don't want you to slap a sign up for no
17 parking the next day and someone's there and then
18 they tow.
19 COMMISSIONER ROSALES: Well, they do that for
20 cleaning the streets. There is a sign from there.
21 MR. HESSELBACH: Nonetheless, your point's well
22 taken. Parking is the most common -- not

1 surprisingly in the city, the most common feedback we
2 get, so I will definitely take that back.
3 COMMISSIONER ROSALES: Thanks, Andy.
4 MR. HESSELBACH: Thank you.
5 COMMISSIONER ROSALES: Thank you, Janel.
6 MS. HARETOUN: Thank you, Commissioner Rosales.
7 Any other Commissioners?
8 Commissioner Palivos.
9 ACTING COMMISSIONER PALIVOS: In the wake of
10 everything that happened in Boston, is there anything
11 that the utilities here are doing differently now to
12 maintain their systems? And if so, what are those
13 changes?
14 MR. MURPHY: Well, for Nicor Gas, the thing
15 we're most focused on immediately out of that was to
16 look at how much low-pressure we had left in the
17 system and to expedite the replacement of that. We
18 only have about 5 miles left, and we think that will
19 be out next year. So that's where we went
20 immediately.
21 But we're also going back through our
22 procedures and protocols for any time that we're

1 doing construction work in the field. And before we
2 do that work, we go through what's called a routine.
3 That actually lines out the steps that we will take
4 in the field with what valves will be open and closed
5 and gauges set to no pressures and things like that.
6 So we're going through those carefully
7 to make sure we're comfortable with everything that's
8 needed to be included in those is and that the right
9 people are signing off on those plans.
10 Some of the things, you can't -- you
11 know, the Merrimack incident was a big -- was tragic
12 because it was a low-pressure system and there was
13 nothing downstream as a safety mechanism to stop the
14 pressure from going straight into the homes. When
15 you're not dealing with low-pressure systems any
16 longer, there's usually some safety mechanism
17 downstream. So everybody's house regulator has a --
18 house meter set has a regulator on there, so even if
19 you have no pressures- -- overpressure of the gas
20 system, when it got to the house, odds are that
21 regulator's gonna do its job to prevent the further
22 overpressure.

1 But it's not a guarantee. So we're
2 watching that. We're looking into it more carefully,
3 even though we don't have the low pressure issue.
4 MR. HESSELBACH: I can say in Chicago,
5 unfortunately, in '92, Peoples Gas had its own
6 overpressurization event and that put in that --
7 after that event, that added certain safeguards. So,
8 for example, we would never convert a system from low
9 to medium pressure and not have people remaining with
10 gauges on all of the operating system. If I
11 understand the Merrimack situation, they finished
12 construction, packed up, and left after they had
13 restored the gas. If someone had remained behind
14 just looking at a regulator, they would have seen the
15 pressures rising above what they wanted then to be.
16 So that was a simple one at that we instilled.
17 The other is, about three years ago
18 now, we instituted a stand-alone, what we call a
19 shutdown and tie-in. So any time you're gonna shut
20 down a sytem, you're gonna tie in a system. We have
21 a select group of subject matter experts that review
22 every step in that procedure independent from the

1 engineers who designed it. So we've added that on as
2 well.
3 And then with Merrimack -- we've done
4 this before -- we're doing another view of where do
5 you add those safety devices on low-pressure systems
6 and overpressure relief valve.
7 One thing that occasionally becomes a
8 reality in Chicago is those are basically in an
9 above-ground stack that you vent gas from. So you
10 have to think about where in the city could you place
11 those; what would be the expense of placing them;
12 does the city or other folks want that object;
13 because it's not an insignificant device; when is
14 that the right step to move and when is that not.
15 So we have 304 low-pressure vaults. A
16 vault is where you take higher pressure gas and feed
17 lower pressure. We have done a review of every one
18 of those vault locations where it's sensing lines
19 are. That's what, really, the issue was at
20 Merrimack. They didn't tie over the pressure sensing
21 lines.
22 Where are all the lines marked, and

1 we've audited all of them. We're down to 3 more left
2 that we have to do -- I just got an update -- of
3 those 304. And then you have to decide are you gonna
4 add -- to the belt and suspenders, are you going to
5 add more.
6 So we have, what we call, slam-shut
7 valves we've added to some of them. Which is kind of
8 a last line of defense. You have two regulators and
9 a slam-shut just shuts the system down.
10 Like a lot of things though, it's not
11 always as obvious as you may think. If a slam-shut
12 missoperates itself and shuts you off and you have a
13 lot of inside meters, you can discontinue gas service
14 to thousands of customers and perhaps not for a good
15 reason, or perhaps there was an error when it shut.
16 And now you have to get inside those and relight
17 them.
18 And we had an event with only 400
19 customers a year ago in December before the holidays,
20 and you couldn't get in. People were travelling.
21 People were away. Now, you're worried about busting
22 pipes in houses where they were shut off.

1 So there's very good safety devices.
2 You want to be sure they operate when and only when
3 they're needed. So there is always some caution
4 about where you deploy those. But there's a variety
5 of items we're looking at as well.
6 MR. KOZAK: And I'll just briefly add, we only
7 have four small low-pressure systems, around 450
8 customers total, and they're are all on modern pipe.
9 But, as you mentioned, not all of them have the house
10 regulators for that final layer of protection.
11 So we went out, looked at all the reg
12 stations. Some of them were monitor setups, which
13 was similar to Massachusetts. We went out and added
14 full-capacity relief valves on all those stations and
15 all those systems.
16 So we have a third layer of protection
17 on those systems now. And we also have a plan to
18 replace them as soon as possible. But they are very
19 small modern-pipe systems, so we're weighing that
20 risk with the other main prone to leakage.
21 MS. HARETOUN: Any other questions from the
22 Commission?

1 COMMISSIONER ROSALES: Just a clarifying
2 question on Commissioner Palivos' question. So those
3 homes in Boston did not have those residential
4 regulators on them?
5 MR. KOZAK: Correct.
6 COMMISSIONER ROSALES: Correct. Thank you.
7 MS. HARETOUN: Thank you. All right. I have a
8 couple of questions.
9 Firstly, historically gas systems were
10 deployed to different areas at different times. Can
11 you explain how gas infrastructure ages and how this
12 differs depending on the types of systems involved.
13 I know this was touched on, so anybody
14 can take that question.
15 MR. HESSELBACH: I'll give you the -- a lot of
16 it just goes with the history of the city. So, for
17 example, for Peoples Gas, north side of Chicago
18 developed first and to a more broader extent than the
19 rest of Chicago. So a lot of our older material is
20 up on the north side. Not exclusively, but that's
21 where more of the 1800s material is.
22 It's no coincidence that sewer and

1 water is doing their hundred miles of replacement
2 every year at the same time and often in the same
3 place we are because the city grew up together.
4 And then, over time, you get some
5 different vintages. So, for example, I was asked,
6 "So, you're still putting cast iron in, in 1959?"
7 Not generally, but if you had a like-for-like system,
8 so it was already cast iron, you might put a piece in
9 like that even though it was more recent.
10 You also get a some very interesting
11 things in the soil. We have had a piece of main --
12 in fact, we just had a leak -- a liner. We're
13 putting a liner inside of a pipe because we knew it
14 wasn't going to be modernized until the end of the
15 program, the neighborhood in general. And they
16 soaked up the top of a 24-inch main, and it was just
17 bubbling. The gas was just coming through it like
18 little Swiss cheese. And that's why we were lining
19 it. A piece three feet over, no leaks.
20 Well, those small leaks are tough to
21 detect from above ground. So we had some leak
22 detection. We were lining it. And that's why we

1 were doing that lining. But you get very different
2 soil conditions deteriorate at different rates within
3 the city.
4 So the vintage is often by just the
5 history of the city, migrating. Industrial areas
6 needed high pressure, so the medium pressure came in
7 more to the south side of the city where the
8 manufacturing was going on.
9 But, usually, it was just the age of
10 the city brought it across. And then the soil
11 conditions can dramatically change the condition of
12 the pipe.
13 MR. MURPHY: Similar, very early on it was
14 all -- everybody was putting in cast iron coming out
15 of manufactured gas plants, and as higher pressures
16 were needed for industrial load, that's when steel
17 seemed to be coming along. And so in the 50s or so,
18 you start moving the steel. But that steel may be
19 bare and it's also, maybe, mechanically coupled
20 together because welding may not have been the norm
21 for everywhere you were having that at the time.
22 So you start, kind of, "Oh, this is

1 the vintage, the cast iron." Then you move into bare
2 steel. You look at mechanical-coupled pipe.
3 Also, when you got to the higher
4 pressures, you started having district regulator
5 stations to reduce pressure back down. So you have
6 those stations now aging and being replaced.
7 Then, probably, you get into more
8 modern steel and newer plastics. But there was a set
9 of plastics that came in before the modern plastics
10 that we have, that are also known to become brittle
11 and to crack.
12 So in some states, where we've already
13 replaced bare steel and cast iron, we're actually
14 replacing some of the vintage plastics that were put
15 in in the 70s, already, as we get into mostly modern
16 steel, protected steel, and the newer plastics.
17 MR. KOZAK: You know, I don't have a lot more
18 to add. But I usually tell people, you know, it's
19 kind of like you said, it's look at the age of home.
20 When that home was put in, that's usually when the
21 gas pipe was put in unless it's been replaced in,
22 like, the last 20 years.

1 And so, then, we're going back, and
2 all those homes that were built prior to
3 1960-whatever, all have to be replaced with new pipe.
4 And most of ours is more modern because of the --
5 that's when most of the homes were built, you know,
6 in the 40s, 50s and 60s. So we have more
7 mechanical-coupled steel, which is two pieces of pipe
8 held together with a mechanical coupling versus being
9 welded. But, yeah, it's typically the age of house
10 is the age of the pipe.
11 MR. HESSELBACH: You also see -- during world
12 wars you'll see deterioration of pipe quality as the
13 war effort took more of the steel. So World War I,
14 World War II, you'll see a degraded pipe quality,
15 higher degradation.
16 MS. HARETOUN: That's interesting.
17 What can be done to keep costs down
18 when modernization is necessary to maintain safety?
19 MR. HESSELBACH: For us it's all about
20 efficiency. Efficiency; meaning, how -- that's why
21 we -- for us we like upgrading whole neighborhoods.
22 When you look at your cost per unit, when you can

1 keep a crew working, just moving their way down block
2 to block, you see some of the highest efficiencies.
3 I'll say most graceful execution. You're just in a
4 rhythm.
5 MR. MURPHY: Kind of like I mentioned a little
6 bit earlier is when you have a multi-year plan, it
7 enables you to contract with these contractors, for
8 them to invest in their businesses. There is a
9 very -- it's an intense -- capital-intensive business
10 to buy equipment and to train your labor forces. So
11 the more they see a line of sight to continued work,
12 they will take risk out of the profile for themselves
13 and then lower their costs that way. And not have to
14 build that risk in.
15 MR. KOZAK: And I would absolutely say it has
16 to do with planning on our end. And, frankly, it's
17 bringing on a lot of new employees and getting them
18 up to speed.
19 So we have hired a lot of younger
20 engineers, and they are getting exposed. I mean, I
21 tell people all the time that they're getting exposed
22 to projects now -- they have seen more in the last

1 four or five years, than I saw in my first 20 because
2 of all the work we're doing. So these young
3 engineers are coming up to speed, which is really
4 good because they're going to be prepared for the
5 next generation to see all this construction. So
6 that's really good.
7 But I go back to what Steve said, it's
8 about a planning. Being able to get out ahead of
9 these projects. Get in touch with all the
10 landowners. Make all the proper communications so
11 the project goes smooth. And having that plan out
12 there for your contractors so they know they are
13 bidding on the next two or three years worth of work
14 not just the next six months. And that helps drive
15 those costs down.
16 MS. HARETOUN: Great. Thank you.
17 Any other questions? We have time for
18 about one more.
19 Yeah.
20 MR. TOM FURTH: This question's for Mr. Murphy.
21 CHAIRMAN SHEAHAN: Can you state your name.
22 MR. TOM FURTH: Sure.

1 My name is Tom Furth, F-U-R-T-H.
2 CHAIRMAN SHEAHAN: Is there an organization?
3 MR. TOM FURTH: I am here as a member of the
4 public.
5 CHAIRMAN SHEAHAN: Okay.
6 MR. TOM FURTH: Mr. Murphy, in June of 2017,
7 Nicor was replacing a section of its cross-state
8 pipeline in Plainfield, Illinois, and as part of that
9 it was to dig under some railroad tracks in
10 Plainfield. The project was to take a 245-foot
11 section of 36-diameter pipeline and jack and bores
12 underneath the embankment of the railroad. It's a
13 process that should have taken about one day. In
14 fact, it actually took three days.
15 Partly because the person who Nicor
16 put in charge of that project had never done a bore
17 before. And the method that he used in order to
18 determine whether or not the pipe should go left or
19 right was to put two sticks in the ground and eyeball
20 it. He also put a smart level, something you would
21 use to hang a picture in your home on the end of this
22 245- --

1 CHAIRMAN SHEAHAN: Sir, forgive me for
2 interrupting you, but this question is the subject of
3 litigation not only in the courts, but also before
4 the Commission.
5 MR. TOM FURTH: This question's --
6 CHAIRMAN SHEAHAN: It's litigation before the
7 Commission. And the Commissioners are not permitted
8 to engage in kind of a substantive conversation
9 involving a case that's in front of us, and this is
10 in front of us.
11 And so I would ask you, maybe, to stop
12 answering your question. And, Mr. Murphy, I would
13 ask you not to answer the question. And perhaps you
14 could have -- talk to him after the meeting or
15 something when we're not present.
16 MR. TOM FURTH: I am only here as a member of
17 the public to ask a question about gas pipeline
18 safety.
19 CHAIRMAN SHEAHAN: I understand. I understand
20 that, but --
21 MR. TOM FURTH: So I'm asking you in a public
22 forum about gas pipeline safety.

1 CHAIRMAN SHEAHAN: Well --

2 MR. TOM FURTH: Mr. Kozak was the one who

3 talked about railroad --

4 CHAIRMAN SHEAHAN: We have ex parte rules and

5 laws that prevent the Commissioners from being

6 involved in conversations around issues that are in

7 front of us. And the issue that you've raised is an

8 issue that's in front of us.

9 MR. TOM FURTH: So you're not permitting me to

10 ask the question?

11 CHAIRMAN SHEAHAN: I think our legal counsel is

12 here.

13 MR. TOM FURTH: I just want to know whether I

14 can ask the question.

15 CHAIRMAN SHEAHAN: No. I don't think you can

16 answer the question.

17 MR. TOM FURTH: I'm not answering. I am

18 asking.

19 CHAIRMAN SHEAHAN: I don't think you can ask.

20 He can't answer you. And we can't be present for the

21 exchange.

22 MR. TOM FURTH: So I'll abide the Commission's

order not to ask the question.

CHAIRMAN SHEAHAN: Well, it's a request. I will ask our staff to maybe -- Timmy, why don't you go get Phil, and you can run it past Phil. And if the general counsel says it's okay, we will come back to it. Okay?

MR. TOM FURTH: Perfect.

MS. HARETOUN: All right. I have one more question in the meantime.

So apart from system age, how do urban, suburban, and rural networks differ?

MR. HESSELBACH: We'll have Eric start on this one.

MR. KOZAK: The question was difference between urban and rural?

MS. HARETOUN: Urban and rural and suburban networks.

MR. KOZAK: Believe it or not, we do have some urban. You know, we serve the City of Peoria, which is our largest city. So, generally, the networks are generally the same, I would say.

The problem with the -- when you get

1 into the urban areas is, when you want to do a
2 regulator with a relief valve, for example, that
3 relief has to stick out of the ground somewhere. And
4 what happens is, if something would happen and too
5 high a pressure would get on that pipe, it's gonna
6 relieve and vent gas into the atmosphere. And that's
7 good because it keeps the system safe, but finding
8 locations to vent gas in cities is more difficult,
9 which is why in many cases we use a monitor system
10 which has two regulators that control the pressure.
11 If one fails, the other one would take over and
12 maintain the pressure.
13 So that's probably the biggest
14 difference, it's just the congestion in doing it.
15 But then the other thing I would say, in the urban --
16 or excuse me -- the rural areas, it's all the meters
17 are put outside, you know, the outside on the home.
18 You get into downtowns and bigger cities, it's harder
19 to find locations to put the meters on the outside.
20 MR. MURPHY: For Nicor, it would be similar.
21 Except for, probably to expound on it, the rural area
22 has it's own challenges because a lot of our rural

areas are crop drying, and that load is sporadic just depending on the seasons and the moisture. And so we put a lot of high-pressure, large-volume gas in those areas for the crop drying.

And then as growth finds that, as suburbia finds that and begins to build out, it's a challenge to ensure that you have enough supply for both those -- these new customers and to satisfy this periodic crop load.

MR. HESSELBACH: I would say we generally have more redundancy in the city. So if you think of a network in a rural area -- I've done design work in rural areas earlier in my career -- and in dense areas, you may have one feed to a small city. And if that feed is hit you could lose a whole small city.

In Chicago, you get thousands of people within a couple block area, and you don't want to lose all those customers. And there's a lot more digging that goes on. So the number of times we're hit by other people doing work in the city -- so they hit the system, we have to shut it down to fix it -- is much higher because there's just so much more

1 activity going on within the confines.

2 So we find ourselves interconnecting

3 in multiple locations. So if you do have a hit, you

4 can shut down the smallest number of customers. So

5 redundancy is probably the biggest difference in

6 addition to the ones mentioned.

7 MS. HARETOUN: Great. Thank you all so much.

8 That is all the time we have for

9 questions. Thank you again for everyone's

10 participation.

11 Let's give all our panelists a big

12 round of applause.

13 (Applause.)

14 CHAIRMAN SHEAHAN: Janel, before we move on, I

15 want to address this issue. So I consulted with our

16 general counsel, and he advised that it was not a

17 question that we should get into because it's an open

18 docket before the Commission. Thank you.

19 MS. HARETOUN: Thank you, Chairman.

20 (After a short recess, the

21 session resumed as

22 follows:)

1 ACTING COMMISSIONER PALIVOS: I would like to,
2 again, thank our panelists from Panel 1 for sharing
3 their insights and discussion on Illinois gas
4 pipeline infrastructure.
5 To lead our final -- or, I'm sorry --
6 yeah. To lead our second panel, I would like to
7 introduce Ritta Merza my Legal and Policy Advisor.
8 Please join me in welcoming Ritta.
9 (Applause.)
10 MS. MERZA: Thank you, Commissioner Palivos.
11 The purpose of this panel is to
12 discuss the challenges and benefits of modernizing
13 gas infrastructure. Our panelist will discuss how we
14 can modernize while maintaining an old gas system,
15 what the associated subsurface challenges are, and
16 how we can coordinate modernization with multiple
17 utilities and agencies.
18 Before I begin, I would like to
19 introduce our panelists. Here with us today, we have
20 Lori Traweek, COO at American Gas Association, and
21 Bryan Pemble, a pipeline and safety analyst at the
22 Illinois Commerce Commission, is joining us over the

1 phone.

2 Please join me in welcoming our

3 panelists.

4 (Applause.)

5 Lori, you're free to begin when you

6 are ready.

7 MS. TRAWEEK: Thank you.

8 It is a pleasure to be here this

9 afternoon. I am with the American Gas Association,

10 which means that I'm located in Washington, D.C. So

11 I guess I can safely say, I am from Washington and

12 I'm here to help.

13 (Laughter.)

14 I really do want to just start by

15 saying how tremendously important it is that your

16 having this conversation. And it really is great to

17 see that your taking the interest in understanding

18 the logistics and the issues surrounding ensuring a

19 safe delivery system.

20 It was great, Commissioner Palivos,

21 for you to start with the recognition of how

22 important natural gas is. Because you wouldn't want

1 to make this investment to make sure that you have a
2 safe and reliable system if you didn't recognize that
3 it was the fuel that truly did bring a quality of
4 life to people in a very affordable and reliable way.
5 And so because we have this vast
6 supply of natural gas here in the United States, and
7 because we are able to produce that at an affordable
8 price and at the same time it has environmental
9 benefits as well as security benefits, it really is
10 worth this kind of conversation to try to make sure
11 that you are able to maintain the system and
12 modernize the system to continue to serve all of the
13 people here. Especially on a day like this, to
14 provide that hot water and that heat and other
15 cooking and other uses for natural gas.
16 And just as a perspective in this
17 country, you saw the number of customers that Ameren
18 Illinois and Southern and Peoples Gas have here in
19 this area. There are 177 million Americans who get
20 served by natural gas across the country. And
21 American Gas Association represents all of the
22 utilities who provide that service. That includes

1 the three companies that were on the first panel.
2 And so, again, it's a pleasure to be
3 here to talk about the importance of natural gas; how
4 we can modernize the system; how it is best to go to
5 about trying to make sure that you are continuing to
6 deliver that safe, reliable fuel; and to answer any
7 questions that you have.
8 So as mentioned definitely it is an
9 obligation for utilities to serve, but with that
10 obligation comes the need to make sure that your
11 servicing the customers reliably and safely. And I
12 have been in this industry -- this is my 30th year
13 with the American Gas Association. I was in the
14 industry prior to that, and I can tell you that never
15 before has there been such a recognition and a focus
16 on the need to modernize the system as there is
17 today.
18 If you go back as to what the
19 motivator for that was, it was actually the Secretary
20 of Transportation, Ray LaHood, who I believe he is
21 from this wonderful State of Illinois.
22 COMMISSIONER ROSALES: Yes.

1 MS. TRAWEEK: Secretary LaHood.

2 He brought together the federal, the

3 state, and the industry back in 2011, following a

4 rather significant incident, to examine how can we

5 make sure that we're modernizing the system and

6 taking steps that are needed to be able to help

7 ensure safe delivery.

8 And under his call of action, there

9 was probably the most significant rule making to --

10 with the distribution of utilities in the

11 distribution integrity management rule. And that was

12 pulled together, again, by all of the stakeholders.

13 In fact, I sat on the Distribution Integrity

14 Management Steering Committee at the time, which was

15 made up of members of the public as well as the state

16 regulators, the federal regulators and the industry,

17 to determine how best can you go about identifying

18 what your risks are and then identifying what steps

19 you needed to take to mitigate those risks.

20 And with that, in 2013, was a NARUC

21 resolution, that basically encouraged states to look

22 at accelerated pipeline replacement programs. And

1 building on that over the years, we're now in a place
2 where we've got 42 states who have some kind of
3 accelerated replacement program. And I know you all
4 were right in there with making sure that there was
5 some kind of a rate-making process that would allow
6 for accelerated pipeline replacement. And, in fact,
7 those eight states that don't have it, don't need it.
8 Because they don't have the aging infrastructure.
9 So every state that needs some kind of
10 a accelerated replacement program, over the years
11 since that 2011 call to action, now have some kind of
12 a specific rate mechanism to address accelerated
13 replacement of pipes.
14 So as a result, if you look over the
15 years, cast iron pipelines have declined 58 percent
16 since 1990. So you saw all the progress that the
17 three companies up here have made. So across the
18 country now, 58 percent decline in cast iron
19 pipeline. Unprotected steel pipelines are decreased
20 about 50 percent now, and modern plastic pipelines
21 have increased 211 percent.
22 So we've been, of course, adding

1 customers. And as you add customers every year,
2 you're adding plastic pipe. Because all of the pipe
3 that's being put in the ground today to serve the
4 distribution -- or virtually all of it, is plastic.
5 And it's the modernized plastic as well.
6 And it was very fortuitous at the time
7 of this call to action and still today that, because
8 of the abundant supply of natural gas, you had very
9 affordable prices. So the commodity itself was at a
10 price where you could then make the investment, and
11 you still can today make the investment, in
12 modernizing that infrastructure without putting an
13 undue burden on the customers.
14 So really very -- again, the timing
15 perfect for an infrastructure that needs to be
16 modernized at a time where there is a recognition of
17 the benefits natural gas brings. And the commodity
18 is in place where you can avoid an undue burden on
19 the customer while you're modernizing the system.
20 That's all helped to be able to advance the
21 modernization that we're seeing today.
22 And, of course, in addition to safety

1 in modernizing the pipeline system, you are also
2 reducing emissions. And so when you look at the
3 natural gas distribution system, which according to a
4 study that was done by Washington State University --
5 it was sponsored by AGA, several companies, and also
6 the Environmental Defense Fund. It concluded that
7 only 0.1 percent, 0.1 percent of total natural gas
8 delivered was emitted into the atmosphere from
9 distribution systems, and that is directly tied to
10 the modernizing of the pipeline system. When you
11 take out pipe that looks like that and you put in
12 plastic pipe, you reduce methane emissions.
13 So it's just been a win-win all the
14 way around. But that being said, it's not easy. And
15 I think you did hear very specifically, and no one
16 knows better than the three operators who are sitting
17 up here, the challenges that they have here in
18 Illinois, in a city like Chicago. To be able to
19 modernize that system, it can be challenging.
20 So let me move for just a few minutes
21 to Massachusetts because there has been a lot of
22 discussion about it. And I think it's an important

1 discussion to have because it's -- the significant
2 events, they're rare when you put it into the context
3 of having two and a half million miles of pipeline in
4 this country. And just to put that in perspective
5 there is 2.6 million miles of paved roads, so 2.6
6 million miles of paved road in this country and 2.5
7 million miles of pipelines in this country.
8 And there aren't that many incidents;
9 however, any incident is one too many. And it's one
10 that we have to take seriously and try to do whatever
11 we can to try to make sure, you know, ensure that
12 it's not going to happen again.
13 And so when you have a tragic incident
14 like you had in Massachusetts in September,
15 immediately the operators, AGA, we all came together
16 to start to look at what could we do to help ensure
17 this wasn't going to happen again. At the same time,
18 we mobilized to be able to provide assistance as well
19 to be able to get all those customers who have lost
20 heat to be able to get them back on service as
21 quickly as possible.
22 And in fact, the companies here also

1 provided crews out there to do that. And as a
2 result, were able to replace some 48 miles of
3 pipeline in a very short period of time.
4 Also, not having to go through all the
5 permitting issues that we're talking about as well.
6 But the importance of learning from
7 that incident to try to make sure that this doesn't
8 happen again.
9 So over the past few weeks, these
10 operators from across the country came together, and
11 they identified leading practices for not just
12 overpressurization of a low-pressure system, which is
13 what this specific incident -- that was the cause of
14 that incident, but overpressurization in general.
15 And in fact, just today,
16 coincidentally, this morning, we announced the
17 release of a document. It's called, Leading
18 practices to reduce the possibility of an
19 overpressurization event [sic]. It is intended for
20 operators to be able to use all of these leading
21 practices.
22 They are not a one-size-fit-all

1 because, as you know, each utility is going to have
2 some things that are unique to it. But what it does
3 capture is all of the different things you can do to
4 be able to reduce the probability of any kind of an
5 overpressurization.
6 And it goes into things such as the
7 design of the processes, the procedures, the
8 equipment, the training, the change of management
9 that you need to have, the system management, the
10 safety management systems that will help to ensure
11 that you don't have overpressurization and so on.
12 So this document literally was
13 released this morning. What I have here is the draft
14 because we were making final changes to it before I
15 got on the plane this morning. But it is now out and
16 final. And it is now something that's available to
17 all the Commissioners. If you're interested in
18 seeing it, we can make sure that you have a copy of
19 that as well.
20 But it does also exhibit that there
21 are a number of different ways to be able to address
22 overpressurization. What you just want to make sure

1 is that the operators are implementing the ones that
2 suit their operations best and address the risks.
3 So I'll just end with -- we talked a
4 little bit about the number of regulations that we
5 have currently in Washington that they're working on:
6 The Transmission Integrity Rule, which was referred
7 to by the previous panel still is not final but it's
8 getting closer; a plastic pipe rule which was just
9 recently released; The Safety Management System's
10 guidance, which is really core to making sure that
11 you have the safety culture you need within your
12 companies to be able to help ensure safety; and then
13 everything that will come out as a result of this
14 Massachusetts incident. There was a hearing today in
15 Massachusetts, as you may know, and several things
16 identified that we'll all be looking at closely to
17 see how we best can enhance regulations practices to,
18 again, be able to avoid these incidents.
19 But all of these coming down the pipe
20 to help ensure that utility's able to modernize it's
21 system as it needs to, to be able to ensure the safe
22 delivery of the natural gas.

1 So I will stop there now. And then,
2 if there are any questions, I am happy to answer
3 them.
4 MS. MERZA: Thank you, Lori.
5 Bryan, are you on the line?
6 MR. PEMBLE: I am on the line.
7 MS. MERZA: All right. The floor is yours.
8 MR. PEMBLE: All right. Well, hopefully, my
9 presentation is up there with my introduction page.
10 Sorry I couldn't be there in person, but I'll try to
11 make this as seamless as possible as we're moving
12 along.
13 So, again, I'm with the pipeline
14 safety analysts with the Commerce Commission. Prior
15 to taking to position in pipeline safety, I spent
16 nearly a decade as an inspector with the Commerce
17 Commission's One-Call Enforcement Program.
18 Today I'm going to cover one of the
19 safety aspects involved with infrastructure renewal.
20 I'm going to provide a brief overview on my former
21 department including a little bit of background to
22 why the department was formed, where damage

1 prevention currently stands in Illinois, and some of
2 the upcoming changes.
3 Next slide.
4 Excavation is acknowledged as one of
5 the leading causes for natural gas pipeline failures
6 not only in Illinois, but across the United States.
7 Damage to utilities has been a concern ever since the
8 first pipes and cables were buried underground.
9 Next slide.
10 Prior to the establishment of
11 excavation laws, the majority of pipeline accidents
12 were a result of a failure to notify utility
13 operators of planned excavation work. This was in
14 part because there was no avenue for this type of a
15 communication. In Illinois, excavation has resulted
16 in damage to hundreds of distribution gas mains and
17 thousands of gas services.
18 Every damage to a buried natural gas
19 pipeline poses a threat to the nearby structures,
20 emergency responders, utility employees, and the
21 general public.
22 Next slide.

1 In 1961 the Illinois Commerce
2 Commission passed General Order 185 adopting rules
3 relating to the protection of underground public
4 utilities.
5 In 1974 the Commission revised this
6 general order to include the requirement for utility
7 operators to develop and place into operation a
8 statewide one-call notification system.
9 Next slide.
10 The statewide one-call notification
11 system was to provide, free of charge, a means for
12 excavators to notify utility operators of planned
13 excavation work. The revision to the general order
14 also required utility operators to have the ability
15 to receive these notifications and to respond to
16 requests by locating and marking underground
17 facilities.
18 Next slide.
19 The response to the general order. In
20 1974, utility operators in Will County established
21 the Joint Utility Locating for Excavators [sic],
22 otherwise known as JULIE, in Joliet, Illinois.

1 JULIE is a not-for-profit organization
2 that provides, free of charge, professional and
3 nonprofessional excavators with a method for
4 notifying utility operators of planned excavation.
5 In 1976 the Commission accepted membership in JULIE
6 as compliance with general order 185, and by 1980
7 JULIE had expanded coverage to all of Illinois
8 outside the City of Chicago.
9 Next slide.
10 On January 1st, 1991, the Illinois
11 General Assembly enacted the Illinois Utility
12 Facilities Damage Prevention Act, also known as
13 220 ILCS 50. This act requires anyone excavating in
14 Illinois to call JULIE prior to starting excavation.
15 The only exception for this requirement's in the City
16 of Chicago, which operates its own one-call system
17 named DIGGER. Excavators in Chicago must call DIGGER
18 before excavation.
19 The act also requires utility
20 operators to be members of JULIE and respond to the
21 notifications of proposed work submitted by
22 excavators.

1 Next slide.

2 In 2001 the General Assembly modified

3 the act and granted authority to the Commission to

4 enforce the provisions of the act and impose

5 administrative penalties. In 2002 the Commission

6 revised the rules regulating excavation by updating

7 Title 83 Part 265 of the Illinois Administrative Code

8 and formed the JULIE Enforcement Program to

9 administer the enforcement process.

10 Due to some confusion, in 2015 the

11 program name was changed from JULIE Enforcement to

12 One-Call Enforcement to alleviate the confusion with

13 the not-for-profit organization.

14 Next slide.

15 The one-call enforcement performed by

16 Commission staff consists of a three-step process.

17 The steps are a staff review, an appeal to an

18 advisory committee, and an appeal to the Commission.

19 And I'll go into these steps in a little bit more

20 detail in the next few slides.

21 Next slide, please.

22 Step one: The ICC receives incident

1 reports on suspected violations that are documented
2 and assigned a case number. Anyone in the state can
3 report a suspected violation.
4 The One-Call staffer performs an
5 initial review, sends a request for additional
6 information, and performs an analysis on all
7 submitted documentation. The staffer determines if
8 there was a violation based on the preponderance of
9 the provided evidence. If there was a violation,
10 Staff determines the penalty. Staff then prepares
11 and sends written notification to all the involved
12 parties of Staff's findings.
13 Next slide.
14 Step No. 2: If the parties wish to
15 contest the Staff findings, the parties found in
16 violation can request a peer review before an
17 advisory committee. The committee consists of a
18 five-member panel representing the stakeholders in
19 the excavation world. The representatives are
20 selected from utility operators, JULIE, excavators,
21 municipalities, and the general public -- one from
22 each one of these groups that hold a two-year term.

1 At the advisory committee, Staff will
2 present their findings to the committee members and
3 the alleged violators will have a right to speak and
4 present any mitigating evidence. The committee can
5 then uphold or reject Staff's findings, and a written
6 notification of the advisory committee's decision is
7 sent to all the involved parties.
8 Next slide.
9 Step No. 3: If the parties wish to
10 contest the advisory committee's decision, Commission
11 staff prepares an order to initiate a proceeding that
12 will be presided over by an Administrative Law Judge,
13 or an ALJ. As part of the proceedings, all involved
14 parties can provide a responsive pleading followed by
15 a discovery phase, and finally a hearing.
16 At the hearing that must be held
17 within 60 days of the initiation of the order, the
18 ALJ makes a ruling based on the testimony and
19 evidence provided in this case. The ALJ decision or
20 final order is reviewed. It is required to be
21 reviewed within 180 days of the initiation of the
22 order. And that is a final step that can be

1 proceeded to that ends the One-Call enforcement
2 proceedings.
3 Next slide, please.
4 There are currently two One-Call
5 Enforcement investigators that report to the
6 assistant director of pipeline safety and One-Call
7 Enforcement. Since 2002 the One-Call Enforcement
8 Program has received and processed almost 4,500
9 incident reports for an average of nearly 300 cases
10 per year. The One-Call Program has issued over 3,600
11 violations and collected almost $1.3 million in
12 penalties. The collected penalty dollars are
13 distributed as an annual grant to JULIE, where it's
14 reinvested back into the excavation community in the
15 form of education, education material, and training
16 in damage prevention.
17 Next slide. Hopefully, we're to a pie
18 chart.
19 MS. MERZA: We are.
20 MR. PEMBLE: If we are...
21 Okay. As seen in this pie chart, the
22 majority, almost 70 percent of communications,

1 involves natural gas facilities. This is part in
2 [sic] due to the enhanced reporting requirements for
3 natural gas operators.
4 Next slide.
5 93 percent of excavator violations
6 fall into one of two categories, either excavation
7 without a valid locate request or failing to exercise
8 caution when working in close proximity to the
9 underground facility.
10 Next slide.
11 Utility operator violations are
12 primarily a result of the operator failing to respond
13 to the notification of proposed excavation within the
14 required time frame.
15 Next slide.
16 So what do these charge numbers mean?
17 The industry standard for measuring the effectiveness
18 of the damage prevention program is the number of
19 damages for 1,000 locates. Since enforcement was
20 commenced, Illinois has seen a steady and measurable
21 decrease in the number of damages per 1,000 locate
22 tickets.

1 Next slide.

2 We'll talk about some of the

3 enhancements. One of the more recent enhancements to

4 damage prevention was the implementation of a

5 standardized number to reach the One-Call notice

6 systems. This means that, no matter where you are, a

7 call to 811 will connect the caller to the notice

8 system in that area.

9 And more directly to the Commission,

10 the Commission staff is currently developing mobile

11 application to simplify the reporting process for

12 excavators that encounter a dig site that has not

13 been marked in response to a locate request ticket.

14 In addition Staff will also stop the

15 practice of issuing warning letters -- and that's a

16 warning letter is a violation without a penalty -- to

17 professional excavators that fail to call JULIE prior

18 to performing excavation.

19 Next slide.

20 So why does the Commerce Commission

21 care about damage prevention and enforce the

22 requirements to notify JULIE?

1 Last slide, please.

2 To prevent situations such as this,

3 where last year a company installing field tile

4 failed to call JULIE prior to excavation and hit an

5 unmarked large-diameter, high-pressure gas pipeline

6 killing two employees of the excavation company.

7 Again, that's why we're here and that's what we're

8 trying to prevent.

9 Thank you for your time.

10 MS. MERZA: Thank you both so much for your

11 very informative presentations.

12 We will now move to into the Q&A

13 portion of our panel. And I wanted to open it up to

14 Commission and see if any of the Commissioners or the

15 Chairman had a question.

16 COMMISSIONER OLIVA: Lori, this question is for

17 you.

18 Do you expect PHMSA to more strongly

19 urge system modernization for those states that

20 haven't undertaken this as a result of the

21 Massachusetts incident.

22 MS. TRAWEEK: What would I would expect PHMSA

1 to do is to strengthen some of the regulations around
2 distribution integrity management as well as the
3 specific requirements around pressurization. And so
4 yeah, I do expect that we're going to see some
5 requirements coming out of that.
6 But I would also emphasize, too, that
7 the safety management systems, which is not actually
8 a regulation, but it's something that PHMSA is urging
9 all operators to follow, is a guidance, that was
10 developed on safety management systems. If you're at
11 all familiar with process safety management, which
12 was developed many, many years ago in OSHA for
13 chemical processes, chemical plants, it's the same
14 kind of concept. Again, it goes into everything
15 around the processes: who authorizes; if your doing
16 any kind of change, how does that occur. They are
17 going to continue to stress the importance of
18 operators, of making sure that they have some kind of
19 safety management system involved.
20 And I would add one more thing to that
21 too. So the regulations obviously are very helpful
22 in terms of providing what the minimum is that

1 operator should be doing. And also in providing
2 confidence to the those customers, that there are
3 these regulations.
4 But I would add, too, that, because of
5 the issues around modernization and the need to
6 continue to modernize, that, at AGA and certainly
7 with all of our operators as reflected by this
8 guidance document, they are now taking steps -- we're
9 now taking steps to go beyond the regulations, above
10 and beyond, because it's the right thing to do, and
11 because sometimes there is a delay in being able to
12 get regulations out, for numerous reasons, at the
13 federal level.
14 And, again, operators are committed to
15 making sure that what they are doing is going to help
16 ensure safe delivery. And so we're going beyond
17 regulations at this point.
18 We have a commitment to enhancing
19 safety that the AGA board approved about three or
20 four years ago. They are going to be reviewing that,
21 too, now in light of this latest incident.
22 Everything in there goes beyond regulations, and it's

1 what all of the operators are committed to do, again,
2 recognizing the need.
3 COMMISSIONER ROSALES: Lori, thank you for
4 being here.
5 You mentioned the NARUC resolution,
6 and all of us are a part of NARUC. How do you
7 answer -- and really do appreciate you being here --
8 how do you answer the question that comes from our
9 colleagues in Colorado about the methane emissions?
10 You mentioned that 0.1 percent on distribution gets
11 released, and that's really small. But their numbers
12 seem to indicate that it's much larger than that.
13 How do you whenever -- and because gas
14 had been so -- in our tenure as Commissioners, so
15 expansive and it's changed the market so much, they
16 claim that the methane emissions are more damaging to
17 the environment than coal and that as we get more and
18 more into gas, there is going to be more and more
19 problems associated with it.
20 How do you respond to that?
21 MS. TRAWEEK: So, first, I would say that the
22 methane emissions, just measuring and understanding

1 what the methane emissions are, there's been an
2 extensive effort. And there are more studies than I
3 can count on two hands that have looked at this.
4 But one of the most recent, literally
5 two weeks ago or so, was a peer-reviewed study that
6 tried reconcile the difference between what you
7 measure when you go overhead versus when you're at
8 the source and you're measuring there. There is a
9 very large discrepancy between when you'd see studies
10 where they're just flying over and they're measuring
11 versus when you're actually going to a facility and
12 you're measuring the emissions at various points and
13 then you're estimating using the EPA greenhouse gas
14 emissions, right?
15 And what that study found was that the
16 challenge that you have with these studies that
17 estimate much more significant emissions where
18 they're flying over -- the problem is that they'll
19 capture something, and then they will multiply it by
20 24/7. So they'll make the assumption that that
21 source is being emitted 24/7 for every day of the
22 year.

1 And the fact is that, generally, if
2 you have a high emission source, there's something
3 that's fat-tails, there's something that with a screw
4 driver or a wrench or some safety -- safety
5 initiative that caused you to want to relieve the
6 valve that you'd had a significant amount of
7 emissions, but that's really easy to fix. So you
8 really don't want to multiply it by 24/7 -- yeah.
9 So first is just getting your arms
10 around what are the actual emissions? And they are
11 lower. I mean, the greenhouse gas inventory that EPA
12 puts out are significantly lower that some of these
13 studies that you've been seeing that try to estimate
14 it based on the flyover.
15 Now, that being said, the production
16 in Colorado -- that's where a lot of these emissions
17 are coming from. They aren't coming from the
18 distribution system as much as from production.
19 Again, the producers are taking steps to reduce those
20 methane emissions. When you modernize the system --
21 I mentioned modernizing pipelines -- as the
22 regulators -- that they use at production, as they're

1 modernizing those, those emissions are going down as
2 well.
3 And I will also add that operators in
4 the -- across the value chain are all implementing
5 practices now to reduce methane emissions. So AGA,
6 again, our board approved voluntary methane emission
7 reduction practices about three or four years ago,
8 that they have been implementing to bring those
9 numbers down.
10 We recently hosted the world gas
11 conference. At that world gas conference you had
12 every major producer sitting up on the global stage
13 announcing how they are reducing methane emissions
14 and committed to doing so.
15 So, really, there is a tremendous
16 amount that is being done. There is still a lot to
17 understand, exactly what the emissions are, and we're
18 actively involved in trying to understand that as
19 well.
20 But, in general, I would say that when
21 you're looking at the whole fuel cycle, coal versus
22 methane emissions from natural gas, no. The natural

1 gas is still doing a better job in terms of how they
2 are emitting today. And that's just gonna continue
3 to improve as we continue to replace this pipe, as we
4 continue to modernize the systems, and as you
5 continue to identify where these fat tails are and
6 you take care of them.
7 MS. MERZA: Thank you very much for your
8 questions, Commissioners.
9 I have a question for Bryan.
10 It is my understanding, and correct me
11 if I am wrong, in 2016 PHMSA's evaluation found that
12 the Illinois Damage Prevention Program was deficient
13 due to a lack of statewide enforcement. Could you
14 remind us what the program is and maybe tell us what
15 the current status of the program is.
16 MR. PEMBLE: Sure.
17 Well, my presentation covered the
18 One-Call Enforcement, so that's a requirement to
19 notify the One-Call system prior to performing
20 excavation and the requirement for utility operators
21 to respond to that notice.
22 So, yes, the -- PHMSA did find that we

1 had a deficient program. So in 2015 Commerce
2 Commission staff began meeting with the City of
3 Chicago to discuss this need for kind of a statewide
4 enforcement program. In late 2016 the City of
5 Chicago passed an ordinance to implement their damage
6 prevention enforcement within the city; therefore, in
7 2017 PHMSA's evaluation of the state's enforcement
8 program found that Illinois is now compliant with the
9 federal requirements of an effective program.
10 MS. MERZA: Thank you. Thank you, Bryan.
11 Lori, you had mentioned that many
12 states that are -- that many states already have
13 programs to modernize their systems and those states
14 that don't have programs don't need them.
15 What is the difference between those
16 states? What makes some states more advanced than
17 others?
18 MS. TRAWEEK: It's not advanced. It's the age
19 of the systems and it's whether or not you have cast
20 iron pipe. So certainly in states such as Illinois
21 or Massachusetts or New York, where you still have --
22 New Jersey, where you still have significant amounts

1 of cast iron pipe, you're going to want to have an
2 accelerated replacement program, some kind of a rate
3 mechanism for that.
4 Those states that don't have it have
5 newer systems. They have plastic. They've already
6 replaced their cast iron pipe. It's not necessary
7 for them to be able to have the modernization
8 programs that you have here.
9 And if I can add one other thing, too:
10 On DOT, on the regulation, of course, the other
11 driver is the Pipeline Safety Act. And that gets
12 reauthorized every four years. And next year it's
13 getting reauthorized.
14 So I would expect that Congress is
15 going to get engaged in terms of wanting to see again
16 some ways of addressing what we saw in Massachusetts.
17 MS. MERZA: All right.
18 That is all the time we have for
19 questions. Thank you again for your very interesting
20 and informative presentations.
21 Please join me in thanking each of our
22 panelists.

1 (Applause.)

2 MS. MERZA: We will take a brief break.

3 (After a short recess, the

4 session resumed as

5 follows:)

6 ACTING COMMISSIONER PALIVOS: I would like to

7 again thank our panelists from Panel II for sharing

8 their insights and perspectives on the challenges and

9 benefits of modernizing gas infrastructure.

10 To lead our next discussion, I would

11 like to introduce Katharine McErlean, Special

12 Assistant to the Executive Director.

13 Please join me in welcoming Katharine.

14 (Applause.)

15 MS. McERLEAN: Thank you, Commissioner Palivos.

16 The purpose of this panel is to

17 discuss safety considerations and gas systems of the

18 future. The objective is to learn how data,

19 technology, and analytics can be leveraged to achieve

20 our safety goals; what the key safety advances are to

21 an upgraded system; and what new technologies exist

22 that can improve safety.

1 Before we begin I'd like to introduce
2 our panelists. Today we will hear from Tony Lindsay,
3 Research and Development Director at Gas Technology
4 Institute; Jonathan Peress, here with us in the room,
5 Senior Director of Energy Market Policy at
6 Environmental Defense Fund; Eric Lounsberry, Director
7 of Safety and Reliability Division at the Illinois
8 Commerce Commission; and Tony Spiritoso, Vice
9 President of Commercial and Customer Enablement at
10 Itron.
11 Please join me in welcoming our
12 panelists.
13 (Applause.)
14 MS. McERLEAN: Mr. Lindsay, you are free begin.
15 MR. LINDSAY: Thank you very much.
16 Good afternoon everyone. I apologize
17 for not being able to be there with you. Aside from
18 the weather, I had some additional conflicts arise in
19 the last 24 hours, so I appreciate you accommodating
20 me over the phone.
21 I guess the first slide that should be
22 up says GTI Overview. I just wanted to set the stage

1 with who we are. The Gas Technology Institute has
2 been serving the natural gas industry for over 7five
3 years now, and, during that entire time, we have been
4 and continue to be an independent, not-for-profit R&D
5 organization. We're headquartered in Des Plaines,
6 Illinois. It's just at the back door of the airport,
7 and that's where the vast majority of our over 360 or
8 so employees work out of.
9 We -- when we look at the type of work
10 that we do, I characterize it as everything from
11 downhole exploration all the way to the burner tip.
12 And what I am going to focus on today, of course, are
13 the energy-delivery research work that we perform.
14 Most everything we do can be related back to either
15 trying to improve efficiency, reduce emissions or
16 reduce costs, or improve safety.
17 And much of our natural gas research
18 and development is supported through several
19 utility-funded, collaborative research organizations.
20 The OTD, Operations Technology Development Group, is
21 very prominent in our work, and we use their funds to
22 also leverage federal and private industry funds to

1 accomplish the goals.

2 Moving on to the next slide, please.

3 As I mentioned, I'll focus today on

4 our energy-delivery research program, and the five

5 pillars there of safety, integrity, reliability

6 operational efficiency and the environment are laced

7 throughout just about everything that we do. I

8 mentioned the OTD group already and how we have been

9 very successful in leveraging those funds,

10 particularly with the U.S. DOT, PHMSA, competitive

11 grants that we respond to, and also through private

12 industry suppliers funding us to do research.

13 Moving on to the next slide.

14 I'm going a little bit quickly here

15 because some of the material that I have put on here

16 is kind of a take away as a resource. There is more

17 information here than I can possibility get through

18 in the ten minutes. So I won't be hitting every

19 single point, but, like I say, hopefully this will be

20 a take away. If you have further questions, then I

21 can always be reached. My contact information will

22 be at the end.

The hexagon of hexagons there is representing how we organize our research programs. These are the six key areas of work, and the color-coding has some significance as well. We operate three working groups within our organization, and that seems to be how we find that utilities arrange their subject matter experts as well.

Today, I've got some examples I'm gonna talk through on safety-and integrity-related project work both in preventing third-party impact damage; better methods for and materials for improving the modernized system, and methods for methane emission, detection, and reduction; some tracking and traceability; and how smart utilities are making use of IT and GPS-related data more effectively; and then some tools that we're developing to help reduce risk and assess that risk.

Next slide, please.

I've selected four examples here of some either near-term or just recently commercialized technologies that GTI has worked on. The first one is a break-away device that can be installed at the

1 aboveground meter set, residence or commercial
2 buildings. And what this device allows for is an
3 engineered weak point in the system, so that if there
4 is impact, either by, say, a vehicle or falling ice
5 or some force that otherwise might crack or break and
6 create a leak, the engineered fitting is designed to
7 be that weak point and to break away, stopping the
8 flow of gas in both directions. There's an internal
9 check valve-type device that's triggered by the
10 breakage, and it renders that meter set safe and leak
11 free.
12 The next one below it is a project
13 that is making use of a ground-penetrating radar
14 that, I believe, one of the utility representatives
15 mentioned. And this has been a particular technology
16 that GTI brought over from Europe, where it was being
17 worked on. And we now, with the support of PHMSA as
18 well, are near to a commercial product offering that
19 would adapt to a variety of different underground
20 directional drilling equipment.
21 What it does is it sends out a signal
22 and it looks for obstacles in the pathway of the

1 drill head to inform the operator of a need to alter
2 it's path.
3 The top-right picture is of a device
4 that can be installed as plastic pipes of tomorrow --
5 are being manufactured to assist in being able to
6 locate the plastic pipe once buried. Traditional
7 methods require the burial of a small, copper-coated
8 tracer wire, that we call it, to allow a locater
9 personnel to attach their device to, send a signal to
10 be able to aboveground trace out that plastic pipe.
11 This 3M product that we worked with
12 them on is a RFID type of tag placed periodically,
13 molded right into the exterior surface of the pipe
14 and a specialized locator sends a signal that excites
15 that tag and responds with a unique signal letting
16 the locator know that it's the gas line they've now
17 been locating. Different, unique signals can be used
18 for other utilities which in the future could make
19 locates much more accurate and efficient.
20 And the fourth technology I've
21 showcased here is an automated shut-off system that
22 can be activated with a very minor, small leak

1 occurrence. Excess flow valves are becoming more
2 commonplace than high-pressure service lines.
3 However, they require a high-flow and a high-pressure
4 loss in a system before they'll activate and shut
5 down the service.
6 This is a system where the service
7 line from the main in the street going up to the
8 building is encased in a sleeve whereby the space in
9 between the sleeve and the service has a small amount
10 of pressure on it. And that pressure's used to keep
11 a service valve open back at the source, at the main.
12 If there is any leakage at all in that
13 sleeve, the low-pressure gas, even through a pin
14 hole, will trigger that valve to shut and make the
15 service safe. The other nice feature of a system
16 like this is that a fusible link that is temperature
17 sensitive can be located at the service riser above
18 ground. So, then in the event of a fire, that link
19 would melt and it would relieve that pressure in the
20 annular space. And, once again, service to the
21 building would automatically be shut off.
22 These are some of the things we're

working on to improve safety and the energy delivery space.

We can go on to the next slide.

I will talk about some technologies that are out in the market that we've worked on that are helping in more efficiently and cost effectively maintaining and installing gas systems.

The top-left picture is a keyhole technology that, through a series of tools and construction techniques that we worked on, allows excavations to be kept to a minimum. You can see a picture of a core that was taken out of the pavement and through the use of vacuum excavation-type tools the gas main can be exposed and repaired without the need for a large open trench.

We continue to work on improving methods for plastic materials to be joined and used and also improve the overall system integrity through quality assurance and material programs. I've got, I think, another example in the top-right, here, of a technology that has been developed to more quickly and easily make a stop to a main line in order for

1 maintenance to be performed.

2 There was a similar, related project

3 that was used -- that's now being used extensively, I

4 believe, by PGL to stop off low-pressure services

5 when transferring them over to upgraded pressure

6 systems. And this allows the avoidance of excavation

7 on the outside of the house by being able to insert

8 this bag-type stopper into the service line from the

9 indoors of the home.

10 And the last pictorial there is

11 another way of helping to avoid third-party

12 excavation damage: the tracing system that will both

13 allow for improved locating of unlocatable plastic

14 pipe in the event of the loss of that tracer wire

15 that I mentioned. This also can be adapted to use

16 for inline or internal inspections with a -- with a

17 camera device.

18 Okay. If we can go on to what I have

19 as slide 7, to talk about some of the GPS- and

20 GIS-type technologies being brought to the industry.

21 One method of improving, we heard one

22 of the speakers earlier talk about incomplete records

1 from legacy systems that have been acquired. As new
2 systems are going in, it's more and more important to
3 be able to know what material was placed where, who
4 did the installation, where was that part
5 manufactured, et cetera.
6 And so what we worked hard to come up
7 with and receive acceptance of is a standardization
8 of, in effect, a barcode type of alphanumeric system
9 to universally be able to track and identify the
10 various components put in the ground, in the new
11 plastic systems of today.
12 The middle box, there, we heard a lot
13 about excavation damage and this is the technology we
14 worked on and recently licensed to a company called
15 Hydromax USA who will be bringing this to market
16 early next year. It's a device that goes onto an
17 excavator's equipment, and it can be linked to the
18 big tickets to notify the excavator, if where he
19 happens to be based on the GPS signal from that
20 device -- if big tickets have been issued and have
21 been cleared for where he is about to dig. This also
22 can be overlaid with utility underground assets and

1 give the operator's dispatch center a picture of what
2 obstacles might be in his way. There is also the
3 ability to establish geofencing boundaries for the
4 excavator to be alarmed if he leaves the boundaries
5 of the established construction zone.
6 So there's a lot of opportunities here
7 to help improve on reducing third-party damage with a
8 device like this that also indicates whether the
9 excavator's idling, digging, moving, or stationary.
10 The last technology that I wanted to
11 point out was a method that is able to help give a
12 better visualization and a 3D view of the variety and
13 growing number of underground assets in a given area.
14 Again, a project sponsored in part by PHMSA. We're
15 working with a company who has a technology for
16 helping generate these 3D views.
17 And the next slide.
18 Second to the last slide, 8. Here, I
19 wanted to point out some tools that we have worked on
20 that are helping to support decisions made and
21 prioritization of replacement programs.
22 The first is a fitness-for-service

1 specific to corroded cast iron pipe. Instead of
2 historically using, maybe, leak data and age and
3 records to help establish prioritization, we've
4 included additional inputs into a model: things like
5 the graphitic geometry of the cast iron and the
6 environment that is unique to that location. And
7 couple it with the corrosion rate history and other
8 inputs to do a better job of helping to prioritize
9 where to concentrate your efforts first.
10 This model was validated extensively
11 with real-world failure data that we helped to refine
12 the model with.
13 And the last mode I wanted to mention,
14 residential methane detection as an area where we've
15 been doing work on. There's a variety of issues that
16 still need to be overcome: standardization; how codes
17 will address this; consumer behavior, of course, is
18 important; and reliability of product performance.
19 So we've undergone some testing of
20 commercially-available product to help inform
21 industry on how to make this more commonplace.
22 If we can go on to the last slide.

1 I tried to summarize here the benefits
2 of modernizing gas infrastructure. This got talked
3 about in the first panel quite a bit. The statistics
4 in those four bullets is some background. Those come
5 out of the 2005 to 2017 incident reports, and are
6 collected by the U.S. Department of Transportation.
7 These are nationwide numbers, of course. But it
8 drives home the point that there's good safety
9 reasons for moving away from a non-cast iron,
10 non-low-pressure-type system because of both the
11 likelihood and the consequences of damage occurring
12 in those systems.
13 And the safety benefits of moving to a
14 plastic system, of course, are that there is fewer
15 joints underground, it's a material that doesn't
16 corrode, there's opportunity to install other safety,
17 preventive devices, like, excess flow valves and
18 service pressure regulators at the buildings and by
19 moving facilities out of doors, there is less
20 likelihood of tampering or -- and also providing a
21 more easy means of emergency shutoff.
22 And then the last set of bullets

1 highlight some of the cost-reduction efficiencies
2 that can come along modernizing a system as well.
3 At the risk of running long, I'll stop
4 there. And I look forward to questions at the end.
5 MS. McERLEAN: Thank you, Tony.
6 We will move on to Mr. Peress.
7 MR. SPIRITOSO: I just want to apologize on
8 behalf of Itron. We had every intention of having
9 three people here today. Unfortunately, we had
10 multiple cancelled flights starting last night. So
11 right now I'm in an airport lounge. On the phone
12 with me are two of my colleagues --
13 MS. McERLEAN: Mr. Spiritoso, I apologize to
14 interrupt and cut you off, but you're our last
15 presenter. Would you mind if we moved onto Mr. John
16 Peress? Just because the slides are in order,
17 please.
18 MR. SPIRITOSO: I'm sorry. I thought you said
19 Tony.
20 MS. McERLEAN: Oh. I did. We have two Tonys
21 on the panel. It's a common name at this panel.
22 Apologies for that, but we will get to you shortly.

1 Thank you. And thanks for your patience at the
2 airport. Sorry.
3 Mr. Peress, you're up.
4 MR. PERESS: Thank you very much. Thank you
5 for inviting me to travel here the day after
6 Thanksgiving break during a blizzard.
7 (Laughter.)
8 So, yes, I am the senior director of
9 Energy Market Policy for the Environmental Defense
10 Fund.
11 Just a little bit of background on who
12 we are: EDF believes that gas has a very important
13 role in the energy system, and we acknowledge freely
14 the benefits that it provides politically,
15 geopolitically, environmentally, and economically.
16 Most of the work that we do is designed to call for
17 updates, refinements, and methods for that to
18 continue to be the case as we move into a more
19 climate-, greenhouse gas-constrained world.
20 And we basically predicate almost
21 everything we do and say on scientific and analytical
22 fact. So we're not here to advocate around policy

1 per se other to than to present facts and to see
2 where those facts lead us.
3 In this space in particular, we've
4 worked with, probably, 20-plus utilities including,
5 as I think the Commission is aware, having partnered
6 with CUB to help Peoples Gas innovate and improve in
7 their modernization program in terms of one of your
8 dockets. In that context we've developed new methods
9 for utilities to survey leaks. We have working with
10 our partners at Google and Colorado State, in fact,
11 surveyed over 15,000 utility leaks and have a pretty
12 good sense of the characterization of utility leaks
13 throughout the country.
14 We also have -- because I've been
15 personally or my staff have been involved in probably
16 15 proceedings around the country on modernization,
17 we have a good sense of how different utilities in
18 different states proceed with these matters, who are
19 doing a better job, why some are not doing as good a
20 job as others. And hopefully, some of that is
21 helpful to this commission as you think about
22 modernization and safety.

1 And I just also wanted to mention that
2 we're also active on many, many industry boards. We
3 work with the American Petroleum Institute in their
4 operational standards development. We collaborate
5 with our colleagues at the AGA. I'm on the North
6 American Energy Standards Board Executive Committee.
7 I can go on and on with that.
8 So, really, the topic of my
9 presentation is about advanced leak detection and
10 data analytics. And I think the subtext to it is how
11 do we modernize the way that utilities are
12 modernizing.
13 And so what do I mean by advanced leak
14 detection and data analytics? We call it ALD+. It
15 is high-sensitivity, mobile-mounted methane detectors
16 like what you see from Picarro or Heath. These are
17 cavity ring-down spectrometers that are far more
18 sensitive than the technologies that are typically
19 used by utilities.
20 And, then, what do we mean by data
21 analytics? I actually just stole a slide from
22 PricewaterhouseCoopers Consulting, where basically

1 you're taking many different data sets, and you're
2 using big data to not only have a static model that
3 looks at what has transpired where there might be
4 historical conditions and leaks but to process that
5 data and to predict where there are likely to be
6 safety issues.
7 So this is our -- ALD+ is forward
8 looking using big data. And it's about data
9 acquisition and data utilization.
10 So how does EDF know about this?
11 Well, I think some of you are aware that we worked
12 with Peoples Gas on a methane distributing project.
13 When we started this project in 2013, 2014, it was
14 mostly sort of a science project and a public
15 awareness campaign.
16 And what we found, as we went around
17 and characterized these from utilities around the
18 country, was it actually leads to more than that. It
19 actually becomes informative for best practices for
20 utilities in terms of how they modernize their system
21 and abate these leaks.
22 And so I just put up a snapshot.

1 That's from my web page. Where we basically binned
2 different leaks that we found working with PGL in
3 their service territory. I'm sure at this point, as
4 you saw earlier, many of these have already been
5 remedied.
6 And we took that and my brilliant
7 colleague Virginia Palacios published a white paper
8 that was published by Public Utilities Fortnightly
9 with some of the key learnings that we had using
10 advanced leak detection and data analytics. And we
11 also have been engaged now in what we would call ALD+
12 types of collaborations with utilities around the
13 country including Peoples Gas in Chicago with respect
14 their use of high-sensitivity, mobile methane
15 sensors.
16 Like, one example of that, and I am
17 not gonna go into great depth, here, is a project we
18 did with Public Service Electric and Gas where they
19 were replacing about 60 miles of cast iron pipe per
20 year over a three year program. That was a $900
21 million project. And, as the Commission knows, that
22 money comes from your ratepayers. You are the ones

1 who allocate it just as your colleagues in New Jersey
2 do.
3 So we tried to help them come up with
4 a way to spend that money smarter. And so, by
5 surveying their service territory, they were able to
6 find the leakiest segments of their pipeline, put
7 together what we call a cumulative leak distribution
8 curve, and prioritize those parcels that were losing
9 and leaking the most gas.
10 But, you know, when you think about
11 where we are and where we've been, when we started
12 this project in 2013 -- this is a really important
13 pie chart because here's what it says: It says that,
14 by and large as of 2013, most leaks -- the vast
15 majority of leaks were being found by first
16 responders. So what was the most effective leak
17 detection equipment that we had as of that period of
18 time? Your noses. Okay?
19 And, in fact, if you look at this
20 little sliver right there, that is ground patrol by
21 the operator, roughly 4 1/2 percent. So you are
22 overseeing. Your safety program is overseeing

1 programs by the operators using PHMSA regulations
2 where they are basically patrolling a minimum of once
3 every three years. They're finding about 4 percent
4 of leaks that way. And the vast majority of leaks
5 are being found primarily by people with noses.
6 But it doesn't need to be that way.
7 And it no longer needs to be that way. And what we
8 ended up doing, when we worked with these utilities
9 around the country, is we would go survey using this
10 high-sensitivity advanced leak detection, and they
11 would say "We're not finding any of the leaks that
12 you guys are finding. Those must not be leaks.
13 We're not finding them."
14 So we went out with two utilities, and
15 we said, let's do a study. We call them the unknown
16 utilities that you want to use. They've not been
17 named. And we said, "Let's take a hundred of the
18 leaks -- just randomly, a hundred of the leaks we've
19 found, a hundred that you didn't find, and now let's
20 go back out there with our survey equipment -- your
21 flame survey -- and then you guys go behind us with
22 your survey equipment and let's see how many of them

1 are actual leaks."

2 Well, there you go. There's the

3 numbers. Utility A, 86 percent of the leaks that we

4 found that they didn't find, were actually leaks.

5 Utility B, 80 percent of the leaks were actual leaks.

6 And these are binned based on the way we size them.

7 But how about if we bend them based on

8 their safety classifications? 72 percent of the

9 leaks that that utility had not found were safety

10 risks that were actionable. And for utility B, 68

11 percent of the leaks that they had not found using

12 traditional methods were safety risks that were

13 actionable.

14 So there is a bit of a theme here.

15 The theme here is that new detection methodologies

16 are enhancing safety and should be more widely used

17 around the industry. And, in fact, those numbers are

18 about to be published in a peer-reviewed paper, the

19 "Journal of Environmental Science and Technology,"

20 sometime in the next month.

21 And what we found is that that

22 advanced leak detection, those numbers have been

1 validated by companies that are using it and have
2 operationalized it. So PG&E in California;
3 Centerpoint Energy, basically, from Texas up to
4 Minnesota, they are all finding that they are finding
5 3 to 5 times more actual leaks. Now, they are not
6 all actionable, but many of them are actionable.
7 And, you know, a little secret here,
8 we don't think utilities should be spending a lot of
9 money to deal with little dribble leaks either. But
10 a lot of these leaks are grade one leaks and they
11 need to be dealt with. And they help prioritize.
12 So at the end of day, what is advanced
13 leak detection and data analytics about? It's about
14 safety. I'm not here to talk about methane
15 emissions. I am here to talk about safety.
16 And that, actually, is the first
17 responders memorial outside of that California State
18 House. And when I went to the NAPSR meeting there --
19 you guys know who NAPSR is, they are the National
20 Association of Pipeline Safety Representatives. I am
21 sure the Illinois member -- your safety director is a
22 member there.

1 Their message was that utilities have
2 an obligation to use an -- advanced state-of-the-art
3 safety practices. So we now have an emergent
4 state-of-the-art safety practice.
5 So what this slide shows you is just
6 like -- just like I showed you that pie chart of how
7 many leaks are found using traditional methods, this
8 is a typical hazard assessment algorithm that is used
9 by utilities to assess and prioritize pipeline
10 repairs.
11 It's backwards looking. It's not
12 forward looking. Okay? It's based on things like
13 leak history. It's based on odor complaints. Now,
14 there are consequence factors, so it looks at things
15 like are there cellars and people near by --
16 right? -- what's the operating pressure of the pipe.
17 But you don't see anywhere on there what's the
18 relative size of the leak. And you don't see
19 anywhere on there how leaky is this segment of pipe
20 compared to another segment of pipe.
21 We heard earlier today, Mr. Hesselbach
22 said that the exact same segment of pipe one place

1 only a few feet away might be leaking a lot more than
2 another place -- right? -- because there are a host
3 of other environmental and other factors that inform
4 and predict where leaks -- where not only are leaks
5 going to be most prevalent, but where the greatest
6 safety risks are.
7 So these are charts that I basically
8 stole from Picarro. There are a number of companies
9 that are doing this. Actually, Peoples Gas is using
10 Los Gatos Research, ABB, but what they are able to do
11 is they are able to provide, going segment by
12 segment, a high visualization of -- using that
13 methane survey data and then data analytics, they are
14 able to provide a visualization of system risk to
15 support asset management on prioritization decisions.
16 And there is a really important point
17 here which is it's not just about surveying and
18 finding the leaks; it's what you do with the data.
19 Picarro happens to be a company that has made a huge
20 investment in big data analytics, but there are
21 companies like PricewaterhouseCoopers and others that
22 are just focussed on the data portion.

1 So the question is not just are you
2 surveying and finding the leaks. The question is --
3 it's like any diagnostics: data acquisition, data
4 analytics, how are you using the data.
5 And, you know, here we can see that
6 the Picarro method allows you to identify the
7 highest, most risky areas. So what they've done then
8 is they've layered on top of that -- and this
9 actually came from PG&E data. They've layered onto
10 that the data that's going into the hazard-assessment
11 algorithms, in other words, the utility integrity
12 management program data. And they've layered that
13 into their survey data. And these are companies that
14 are regularly surveying this with high-sensitivity,
15 mobile methane detectors and they're better able to
16 predict where your likely to have safety problems in
17 the future.
18 So I didn't put Picarro's white paper
19 up here, but those red zones, those are the hot zones
20 where they are predicting they are likely safety
21 problems that need to be remedied.
22 Using just the DIMP model, there were

1 many more hot zones. And I don't have that slide up
2 here. In other words, by combining all this data
3 using big data analytics, they're able to, with a
4 more accurate and more factually-based analytical
5 methodology, basically determine where they need to
6 be spending money to modernize the program -- or
7 modernize their infrastructure in the first instance.
8 I could have had another slide from
9 another company that we've worked with called UrbanT.
10 UrbanT is using machined intelligence; in other
11 words, they're taking hundred of thousands or
12 millions of data points -- things like precipitation,
13 things like temperature, things like building
14 density, things like road cover, traffic -- and they
15 are predicting, using all of this data, where there
16 is likely to be corrosion in the system. And it's
17 been proven to be accurate.
18 So, in sum, I guess what we wanted to
19 present to you is that modernization is extremely
20 important, safety is a extremely important. What
21 commissions policymakers, and utilities need to be
22 focused on is improving and modernizing the way that

1 they modernize their systems.

2 So I will stop there. Thank you.

3 MS. McERLEAN: Thank you, Jonathan.

4 Eric, you have the floor.

5 MR. LOUNSBERRY: Thank you.

6 And I apologize for not being there in

7 person. I will tell you that everybody who reports

8 to me that came -- who would normally come from north

9 of Springfield did not make it in today. And when I

10 was coming into work, a portion of the interstate was

11 shut down. So I really appreciate being able to do

12 this over the phone.

13 I'm Eric Lounsberry, Director of Safe

14 Reliability Division. I have been at the Commission

15 for almost 30 years, primarily in the natural gas

16 area.

17 Next slide, please.

18 I want to go over some of the history

19 of the five-point safety program and where things

20 stand right now.

21 In 1968 the Gas Pipeline Safety Act

22 gave jurisdiction over all natural gas safety to the

1 U.S. Federal Department of Transportation --
2 Secretary of Transportation. Those requirements were
3 codified into CFR 191 through 192, '3 and '9 -- '99.
4 They established PHMSA to enforce
5 these requirements. And PHMSA directly administers
6 the rules that govern the design, construction,
7 testing, operation, and maintenance of all natural
8 gas operators.
9 Next slide, please.
10 The Federal Pipeline Safety Act
11 allowed the states to be certificated as an
12 enforcement agent by PHMSA.
13 In '69 the State of Illinois passed
14 the Illinois Gas Pipeline Safety Act which was
15 aligned with the federal rules and provides the ICC
16 with jurisdiction over all intrastate gas safety in
17 Illinois. I just want to make the distinction, there
18 is interstate operators and intrastate state
19 operators -- in Illinois. The ICC only has
20 jurisdiction over the intrastate operators.
21 And then the Illinois Gas Pipeline
22 Safety Act expands our jurisdiction beyond just

1 the -- what's normally seen for the Public Utilities
2 Act. The Public Utilities Act only has the public
3 utilities for our jurisdiction under the Pipeline
4 Safety rules. We actually have jurisdiction over
5 much more, and I will get into that -- a little bit
6 more of that later.
7 Next slide, please.
8 We adopted various requirements for
9 the CFRs into our ICC administrative rules. I'll go
10 through this pretty quick.
11 PHMSA provides up to 80 percent of the
12 funding for the ICC Pipeline Safety Program. The
13 most recent funding level was 62 percent. Hopefully,
14 with the next recertification of the federal rules,
15 that number will get higher.
16 And then we are recertified annually
17 by PHMSA based on the annual audit of our conduct
18 or -- that's conducted by a representative of PHMSA.
19 Next slide, please.
20 Here's all the jurisdictional
21 operators that ICC has authority over. That's the
22 Public Utilities, municipal operators, the intrastate

1 transmission operators. We have several master meter
2 operators, one liquid propane operator, one LNG gas
3 operator, and one gathering line operator.
4 Next slide, please.
5 In Illinois, there are roughly 3,142
6 miles of transmission pipe, 62,000 miles of
7 distribution main, and 3.7 million gas services that
8 are jurisdictional to the gas operators that ICC has
9 authority over in Illinois.
10 Next slide, please.
11 This is just a picture kind of showing
12 a quick summary of what a system would look like.
13 You have the interstate operator that is not
14 jurisdictional to ICC. That feeds into the
15 distribution mains for the utilities.
16 That utility could also be taking
17 service or getting supply from their own natural gas
18 storage, which then would be jurisdictional to the
19 ICC.
20 They've been getting supplemental
21 e-mails from an LNG facility, a propane facility for
22 peak demand days, those would be jurisdictional to

1 the ICC.

2 And then the various individual

3 customers, the jurisdiction of the ICC ends at the

4 meter. So inside piping is not jurisdictional to the

5 ICC.

6 Next slide, please.

7 The number of staff that PHMSA expects

8 the program to maintain is set up by a funding -- or

9 a formula. The current formula shows we should have

10 around 12 full-time inspectors. Currently, the

11 program has ten full-time inspectors, a program

12 manager, and a part-time administrative assistant.

13 And we expect, in the next few years, we will work

14 our way up to the number of inspectors that PHMSA

15 expects us to have.

16 Next slide, please.

17 The five-safety analysts that are

18 hired by the agency normally have an engineering

19 degree or have received comparable training with the

20 natural gas industry and can demonstrate aptitude to

21 perform the duties as an analyst. Once they are

22 hired, they get sent to a training sessions hosted by

1 PHMSA in Oklahoma City. And also receive on the job
2 training by shadowing more senior inspectors for
3 usually a period of around 18 months.
4 Next slide, please.
5 The beginning inspectors have to
6 attend and pass 70 -- or 7, 40-hour courses and
7 numerous online classes before they can be promoted
8 to a pipeline inspector, which allows them to operate
9 on their own. And you can read about what the basic
10 inspections will include.
11 The more advanced pipeline safety
12 inspectors have attended up to 40 different PHMSA
13 courses and will have continually reviewed the
14 various advisory bulletins, interpretations, and
15 modifications that have happened in the federal/state
16 regulations. And you can read about what all the
17 inspectors would -- activities inspectors would have.
18 Next slide, please. Which should be
19 the last slide.
20 This is the activity from 2017, which
21 is the most recent summary that we have. In 2017 the
22 inspectors had 1,017 in-person days out in the field.

1 PHMSA's goal for our program to have around a
2 thousand, so we've met the goal.
3 There were 343 individual inspections
4 taken in 19 -- or 2017. We identified 115 issues.
5 And a result of those issues, we took 42 compliance
6 actions that required either amendments to plans or
7 noncompliance finding by the pipeline safety staff.
8 That is all I have. Thank you.
9 MS. McERLEAN: Thank you, Eric.
10 Mr. Spiritoso, the floor is yours.
11 MR. SPIRITOSO: I apologize for earlier for
12 jumping the gun. So, once again, I am in a lounge,
13 and in the event that there's a technical issue, I
14 have two colleagues Rich Dewar and Robb Emehiser on
15 the line that were intending to be there with me.
16 I am having some problems hearing you
17 guys so -- and I'm flying blind so I will tell you to
18 turn the slides. I hope they're on the title slide
19 Gas Industry Infrastructure & Safety.
20 MS. McERLEAN: Yes. We're starting with that
21 slide.
22 MR. SPIRITOSO: All right. In light of recent

1 incidents around the country related to natural gas
2 distribution safety, there are growing concerns that
3 proactive measures need to be taken as an industry to
4 prevent similar occurrences. We applaud the Illinois
5 Commerce Commission for putting together a policy
6 session to speak to the very important topic of gas
7 distribution infrastructure with a focus on safety
8 and how to utilize new and emerging technologies to
9 provide a safer gas delivery.
10 Slide two, please.
11 Just a little bit about Itron at a
12 glance. Itron is a U.S.-based global technology
13 company that offers products and services related to
14 the measurement and analytics of electric, water, and
15 gas resources. We are headquartered in Liberty Lake,
16 Washington. That is just outside of Spokane.
17 Itron's entire business focus is on the utility
18 marketplace to help drive efficiency and safety
19 within their operations.
20 Next slide, please.
21 Just a history of transformation of
22 where we were and where we're going: Itron was

1 created by utility executives of Washington Water and
2 Power and an engineering group back in the early
3 '80s. They were looking for better ways to collect
4 and manage meter data. They wanted to improve the
5 accuracy and the speed of the collection of the data.
6 All that early work led to a ruggedized handheld
7 computer, which truly revolutionized the way
8 utilities were collecting metering data.
9 The next step was to take it a little
10 further. We developed a AMR device, which stands for
11 automatic meter reading device. Now utilities could
12 utilize radio communications to collect data with
13 local solutions or network solutions, further
14 improving the efficiency and accuracy and value of
15 the customer data.
16 We also developed software to support
17 the management of this data, allowing utilities to
18 streamline their back offices.
19 As we continued to seek new
20 innovations in the utility customers, we felt that
21 the next step was greater integration. We knew to
22 unlock the potential of the smart network, we wanted

1 to offer customers the full-spectrum solution, from
2 meter to managed services. So we ended up acquiring
3 the Schlumberger's electric division to 2003 and then
4 acquired Actaris Metering Systems, which was water,
5 gas, and electric worldwide, in 2007. This gave
6 Itron the global system we have today and the ability
7 to develop products for smart solutions across
8 electric, gas, and water.
9 We then developed our OpenWay AMI
10 system. For those of you, AMI stands for advanced
11 metering infrastructure. AMI enables two-way
12 communication over a fixed network between the
13 utility and the metering inputs.
14 So what's next? We're working on the
15 next chapter. Itron is focused on analytics software
16 and services and working with CENTRON companies
17 across the board to provide a safe product for the
18 natural gas industry.
19 Next slide, please.
20 Now this is an interesting slide.
21 Ensuring safe and reliable delivery of natural gas
22 remains the key priority for gas utilities.

1 Utilities are increasingly under challenge with
2 keeping up with growth and maintaining and updating
3 the aging infrastructure. Rising customer
4 expectations and instant communications, social
5 media -- we're in an age of everybody wants it now.
6 The culture of social media, real-time information,
7 and instant gratification is actually helping drive
8 all industries.
9 Utility customers expectations are
10 enabling some pretty exciting advances with AMI rated
11 devices and helping solve problems with aging
12 infrastructure by better monitoring, having real-time
13 communication with the utility, and even autonomous
14 action in the field to prevent catastrophic events.
15 Next slide, please.
16 Where are we going? Itron, along with
17 the gas distribution industry, is in the transition
18 between AMR and AMI, which you can think of as
19 intelligent gas distribution system. For those of
20 you who are familiar with the smart grid on the
21 electric side, you know, AMI has been around for a
22 while. We're fortunate because we are learning and

1 taking advantage of a lot of positive attributes that
2 we've learned from this evolution from the electric
3 side. And we're starting to see more and more
4 activity in the smart cities, the internet, it's a
5 really exciting time in the industry as we know it.
6 Slide 6, please.
7 Looking at the intelligent gas
8 distribution network, I mean, there is so much to
9 talk about. But every utility is going to have a
10 unique combination of value drivers. But we have
11 seen common factors driving smart network investments
12 around the globe. They fall in general, similar
13 categories with intangible asset benefits.
14 So let's talk a little bit about
15 safety. If you look at a current system now, how
16 long does it really take before someone calls --
17 smells gas, calls, and there's actually someone at
18 the site? And that's if we're fortunate that there's
19 actually someone there to make that call.
20 What if on site we have methane
21 sensors that were available and automatically
22 detected and reported a leak? What if we were able

1 to remotely disconnect the gas based off of the
2 information that we received from the methane
3 detector?
4 What if we could get both the methane
5 detector and the remote disconnect to communicate
6 between them with -- knowing that they would actually
7 report back to the system and give real time this
8 actually took place?
9 Second safety example is what if you
10 had a smart gas meter you could program, you know, in
11 the event that there is an appliance that was stolen?
12 We've had these incidents, and we've seen this where
13 the meter will run at a certain level. But if you
14 program into the meter that it would shut off at a
15 certain capacity and, you know, creates a safer
16 environment for the utility.
17 System integrity is another one. What
18 if you knew everyday the level of cathodic protection
19 of the metal pipe in your system? Today, you have
20 some utilities that visit that site once a year and
21 document it in a note pad. But this you would have
22 instant information on a daily basis. In the event

1 that, you know, there is a backhoe digging and it
2 compromises the pipe, you don't have to wait a year
3 to find out. You have that information
4 instantaneously.
5 Also what I want to talk about is
6 operational efficiency and sustainability.
7 Instantaneous reads, remote shutoffs, move-in and
8 move-out data, pressure sensing, reducing truck
9 calls, capturing the leaks in almost real-time data,
10 that's what it's all about.
11 So next slide, please.
12 So the future game changers. You can
13 switch to slide 8, please.
14 Here are some of the devices that we
15 have today available: Methane detection, this
16 particular device is intended for indoor use. We
17 have a utility in the Northeast that has a lot of
18 indoor set meters that they're mandating that they're
19 putting a methane detector in each one of those
20 basements, where the meters are.
21 And the second one is the cathodic
22 protection device, I mentioned earlier, monitoring

1 cathodic voltage on metal piping in the system for
2 use in mobile or network environment.
3 The third one is the GasGate Remote
4 Disconnect. We have -- this product can be used as a
5 stand-alone device or can be the incorporated with a
6 flood sensor.
7 MS. McERLEAN: Could you please speak up,
8 please.
9 MR. SPIRITOSO: I'm sorry?
10 The GasGate Remote Disconnect is a
11 stand-alone remote disconnect that could be
12 incorporated with a flood sensor. We have a utility
13 in the Northeast that we're developing it for, that
14 in SuperStorm Sandy they had appliances floating
15 away, breaking away, and causing explosions in the
16 house. So with this sensor we can -- it'll shut the
17 gas off, and it will communicate back to the system
18 that this house had flooding and it took place in
19 there.
20 Also we have our Intelis gas meter.
21 And if you could go to the next slide, please.
22 This is our latest and greatest meter

1 that we are introducing into the industry. It will
2 be available into the new year. We can program
3 high-flow alarms, as I mentioned earlier;
4 high-temperature alarms; air detection, that means if
5 the meter is removed from the gas stream, we know
6 that it has been removed and there is a situation to
7 drive a truck out there and send somebody. And we
8 could also do a remote disconnect from this device.
9 So these are some of the products that
10 we're excited about, and look forward to discussing
11 more about gas industry infrastructure and safety.
12 MS. McERLEAN: Thank you all for your very
13 interesting presentations today.
14 We'll now move into some questions.
15 First, I'd would like to ask if the Commissioners
16 have any questions.
17 (No response.)
18 MS. McERLEAN: Okay. For the essence of time,
19 I will just ask one question.
20 It seems that deployment of the
21 behind-the-meter gas-fired backup generators has
22 increased. How is this affecting safety?

1 Any panelists can feel free to answer,
2 just please identify yourself when you do.
3 MR. LOUNSBERRY: This is Eric Lounsberry in
4 Springfield.
5 When you have the additional load
6 behind the meter, the issue that you run into is if
7 the manner that the original piping was placed into
8 the home is sufficient to carry the additional load.
9 So you may end up with situations
10 where, in order to provide service to the customer,
11 that you have to increase the pressure at the meter,
12 which then you have the issue of whether or not the
13 customer's piping is sufficient to handle the higher
14 pressure. And of course, you also have to make sure
15 that on the electrical side that they have the proper
16 disconnect in the electric utility.
17 MS. McERLEAN: Thank you. That's all the time
18 we have for questions.
19 On behalf of the Commission, I would
20 like to thank the presenters for educating us on the
21 safety considerations of the future of gas systems.
22 Please join me in giving our panelists

1 a round of applause.

2 (Applause.)

3 ACTING COMMISSIONER PALIVOS: Thank you all

4 very much for taking the time to join us at this

5 policy session on gas infrastructure and safety.

6 A special thank-you to our wonderful

7 panelists, our wonderful moderators, and Ritta Merza

8 and Emily Brumit for helping put together this

9 educational day.

10 Thank you and drive home safely.

11 (Whereupon the above

12 matter was adjourned.)

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