BEFORE THE

ILLINOIS COMMERCE COMMISSION

PUBLIC UTILITY SPECIAL OPEN MEETING

March 4, 2020

Springfield, Illinois

Met pursuant to notice at 1:00 p.m., at Illinois Commerce Commission, 527 East Capitol Avenue, Springfield, Illinois.

PRESENT:

CARRIE ZALEWSKI, Chairman
SADZI M. OLIVA, Commissioner
MARIA S. BOCANEGRA, Commissioner
MICHAEL T. CARRIGAN, Commissioner
D. ETHAN KIMBREL, Commissioner

REPORTED BY: MICHELLE A DUZAN, CSR, RPR
License No. 084-004270

CHAIRMAN ZALEWSKI: Good afternoon. I have 1 o'clock. Are we ready to proceed in Chicago.

COMMISSIONER BOCANEGRA: Yes, we are.

CHAIRMAN ZALEWSKI: Thank you. Under the Open Meetings Act, I call the March 4, 2020, Special Open Meeting to order. Commissioners Carrigan and Kimbrel are with me in Springfield. Commissioners Bocanegra and Oliva are joining us from Chicago.

We have a quorum.

We have two requests to speak. The first is from Dave Davis, representing 350Kiswaukee, and the second is Edward D. McNamara, representing Sue Allen, a complainant in the Commission Docket 19-0771.

Under 2 Illinois Administrative Code Section 1700.10, any person desiring to speak to the Commission shall be allowed up to three minutes. Only one person may speak on behalf of the organization. Please note that the Commission will not respond directly to your comments.

So we'll start with Mr. Davis.

THE CHIEF CLERK: He's in Chicago. I think he was to be in Chicago.

CHAIRMAN ZALEWSKI: Are you Mr. Davis?

MR. DAVIS: Yes.

CHAIRMAN ZALEWSKI: Okay. If you want to come up and sit at the table and turn on your microphone. I'm going to time from my -- my phone and I'm going to try to stay diligent on the time. So at three minutes, I will -- I will --

THE CHIEF CLERK: Push the button. Yes.

MR. DAVIS: Hear me okay?

CHAIRMAN ZALEWSKI: You may proceed.

MR. DAVIS: Commissioners, we respectfully stand before you today seeking a general understanding of your interpretation of 220 ILCS 5/1-102, Section b, which mandates generally the protections of the environment from the adverse external costs of utility -- public utility services so that environmental costs of proposed actions are considered in the regulatory process.

We're guessing that your interpretation of these words may have changed over the past few years based on the warnings from the scientific community; for instance, the United Nations Emission Gap Report 2019, stating that we must cut greenhouse gas emissions 2.7 percent by the year 2020, which is now. And also the World Scientists' warning of the climate emergency signed by 1,300 -- 13,422 scientists from

156 countries. That was as of 8:00 a.m. this morning. And they stated, and I quote, we should leave remaining fossil fuels -- stocks of fossil fuels in the ground.

So we're wondering how you -- how heavily you may weigh the growing number of alarms in your future decisions based on your charge under 220 ILCS 5/1-102, Section b. Your sense -- a sense of your direction will help us as we draft and support new legislation.

And we do have one other question. We seek your interpretation of a previous Commission decision in Docket 17-0311. That was the petition to decrease public utilities, electric statutory savings targets as set forth under the heavily negotiated FEJA and that -- that petition was filed 29 days after FEJA officially set those targets. And we're asking you to help us understand how the dire emission warnings that existed even in 2017 and the Commission's charge under 220 ILCS 5/1-102, subject b, may have involved -- been involved in the decision in 17-0311, Commission decision to override a broad range of opposing parties including staff.

We welcome your feedback, realizing you

can't give it to us now, but we really are sincerely interested in your feedback on these issues and any insight you can give us as we do draft legislations. Thank you, Commissioners. We appreciate the opportunity to speak.

CHAIRMAN ZALEWSKI: Thank you, Mr. Davis.

Okay. Next, Mr. McNamara. Let me reset the clock real quick.

You may proceed.

MR. McNAMARA: Good afternoon. Thank you. My name is Edward McNamara. I represent Sue Allen, a homeowner in Decatur. Her property abuts -- in fact, located on her property is an Ameren power line. I filed a complaint on her behalf back in July, and we've had some hearings -- hearings on this, but not any hearings where evidence was presented. So although it's an application for rehearing that you'll hear today, it's a misnomer because there have been no evidentiary hearings. It was dismissed without a hearing.

Now, I have a copy of the memo that Nicole Roth presented to you when you heard the case back in December. And I have extra copies of it, page 2. I have extra copies of my complaint. And I have extra

copies of the relevant pages from the case that they rely upon.

And let me say this. I'm not picking on Nicole Roth. Judge Roth was not the judge that heard the case. Judge Yoder heard the case.

THE CHIEF CLERK: You're not being heard over the Internet.

MR. McNAMARA: Oh, I'm sorry.

THE CHIEF CLERK: That's okay.

MR. McNAMARA: Judge Yoder heard the case, made the decision, and then Judge Roth, without having heard the case, made the recommendation to the Commission.

Now, I believe a recommendation is wrong in several respects. I have a copy of page 2. Number one, they're relying upon the CenterPoint Energy case. That was a case where intervenors were requesting the Commission to return to them certain easements on their property, wanting the gas transmission company to do that. Another interesting point in that case, and part of the remedy I'm asking for, there was a question as to whether CenterPoint had made representations to the Commission -- to the landowners that they were returning the easements.

That case stands for the proposition that the Commission did not have jurisdiction to order the CenterPoint to return the easements.

One other important thing the Commission did in that case. The Commission ordered CenterPoint to advise the landowners that they were not returning the easements to the landowner. Very important point, because what I'm asking for in this case is two things; that the Commission hear this case on the nonemergency vegetation management provisions. And I've quoted them in my complaint. Judge Roth in her memo to you says that I did not --

CHAIRMAN ZALEWSKI: That's time. Thank you. We appreciate it.

MR. McNAMARA: Can I give you these documents? I think they will --

CHAIRMAN ZALEWSKI: I -- I have all the documents. They're all on the e-Docket system, as I understand. And I've personally read them, and I think we all have access to them. I appreciate it though.

MR. McNAMARA: Thank you.

CHAIRMAN ZALEWSKI: Thank you. Thank you.

So now we're moving on to our Public

Utilities agenda.

There are edits to the January 22nd, 2020, Policy Session minutes. There are edits to the February 5th, 2020, Regular Open Meeting minutes. There are no edits to the February 18th, 2020, Regular Open Meeting minutes.

Are there any objections to approving the minutes as edited?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the minutes are approved.

We're now moving on to the Electric items. Item E-1 concerns ERM No. 20-011, which is MidAmerican's filing to modify the revenue credit to include Rider Tax Expense Revision Mechanism, or Rider TERM. The filing will add the delivery portion of Rider TERM to the credit calculation methodology. The Commission staff recommends not suspending the filing.

Are there any objections to not suspending the filing?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the filing is not suspended.

Items E-2 through E-4 concern requests for confidential treatment of petitioners' reports. The Orders grant the protection, finding that the information is highly proprietary and confidential.

Are there any objections to considering these items together and approving the Orders?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the Orders are approved.

Item E-5 concerns Docket 19-0549, which is a complaint against Sperian Energy alleging that the customer did not give consent for the company to become an energy supplier. The parties filed a stipulation and joint motion to dismiss, noting that they have resolved all the disputes and asking the Commission to dismiss the complaint with prejudice.

Are there any objections to granting the joint admission -- joint motion to dismiss and dismissing the complaint with prejudice?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the motion is granted.

Item E-6 concerns Docket 19-1098, which is a complaint against ComEd to recover customer's solar

credit reserve. The parties filed a stipulation and joint motion to dismiss, noting that they have resolved all the disputes and asking the Commission to dismiss the complaint with prejudice.

Are there any objections to granting the joint motion to dismiss and dismissing the complaint with prejudice?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the motion is granted.

Item E-7 concerns Docket 19-0658, which is a complaint against ComEd regarding a requested change of electric service provider. The complainant has not filed an amended complaint after the Commission granted a leave to amend the complaint. The Order, therefore, dismisses the complaint for want of prosecution.

Are there any objections to approving the Order?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the Order is approved.

Item E-8 concerns Ameren's request to reconcile revenues under its Rider Clean Energy

Assistance Charge, or CEAC, from June 2018 to May 2019. The Order approves a reconciliation as set in the appendix of the Order, finding that the costs during the reconciliation period were prudently incurred.

Are there any objections to approving the Order?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the Order is approved.

Item E-9 concerns Ameren's request to make revenue-neutral tariff changes related to rate design. Ameren proposes to use the same rate design methodology utilized in the previous revenue-neutral tariff change proceeding, or Docket 16-0387, with few changes. Ameren also proposes to maintain delivery service price uniformity across all rate zones for all rate type -- excuse me -- all charge types and customer classes approved in Docket 19-0436 with some exceptions. The Commission staff has reviewed the proposed changes and recommends approval of the changes as indicated in the Order. The Order approves the rate design set forward in this proceeding.

Are there any objections to approving the Order?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the Order is approved.

Items E-10 and E-11 concern applications for certifications to install distributed generation facilities in Illinois. The Orders grant the certificates, finding that the applicants meet the requirements.

Are there any objections to considering these items together and approving the Orders?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the Orders are approved.

Item E-12 concerns an application for a license to operate as a Retail Electric Agent, Broker, and Consultant in Illinois. The Order grants the license, finding that the applicant meets the requirements.

Are there any objections to approving the Order?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the Order

is approved.

Item E-13 concerns a petition to cancel a certificate to operate as an Energy Efficiency Installer. The Order cancels the certificate.

Are there any objections to approving the Order?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the Order is approved.

Items E-14 through E-29 concern applications for Certifications to install Energy Efficiency Measures in Illinois. The Orders grant the certificates, finding that the applicants meet the requirements.

Are there any objections to considering these items together and approving the Orders?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the Orders are approved.

Under our Gas items, item G-1 concerns the initiation of Ameren's reconciliation of revenues collected under Rider Gas Efficiency -- excuse me, Rider Gas Energy Efficiency Cost Recovery or Rider GER for the calendar year 2019. The Order commences

the annual reconciliation proceedings under the Rider.

Are there any objections to approving the Order?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the Order is approved.

Item G-2 concerns the initiation of Nicor's reconciliation of revenues collected under Rider 30, the Gas Energy Efficiency Plan Cost Recovery for the calendar year 2019. The Order commences the annual reconciliation proceedings under the Rider.

Are there any objections to approving the Order?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the Order is approved.

Item G-3 concerns the initiation of North Shore and Peoples Gas's reconciliation of revenues collected under Rider EOA, the Energy Efficiency and On-Bill Financing Adjustment for the calendar year of 2019. The Order commences the annual reconciliation proceedings under the Rider.

Are there any objections to approving the

Order?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the Order is approved.

Item G-4 concerns Docket 16-0458, which is Nicor's request for reconciliation of revenues collected under Nicor Gas's Rider 30, or the Energy Efficiency Plan Cost Recovery from June 2015 to May 2016. The Order approves a reconciliation as set in the Appendix of the Order, finding that the costs during the reconciliation period were prudently incurred.

Are there any comments on this one from Commissioners?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, all in favor of approving the Order, say aye.

(Chorus of ayes.)

CHAIRMAN ZALEWSKI: All opposed say nay.

COMMISSIONER OLIVA: Nay.

CHAIRMAN ZALEWSKI: The ayes have it. And the Order is approved.

Item G-5 concerns Docket 19-0575, which is a complaint against North Shore Gas as to an allegedly

unreasonable invoice for moving customer gas pipe due to the construction at her house. The Order denies the complaint because the complainant failed to show that North Shore is responsible for the cost of moving the gas pipes and that the invoice for the re- -- excuse me, the relocation was excessive.

Are there any objections to approving the Order?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the Order is approved.

Items G-6 and G-7 concern requests for confidential treatment of information in the petitioners' report. The Orders grant the protection, finding that the information is highly proprietary and confidential.

Are there any objections to considering these items together and approving the Orders?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the Orders are approved.

Item G-8 concerns a request by Liberty Utilities to amend its Money Pool arrangement with its subsidiaries. The amendments to the arrangement

will allow Liberty Utilities to pass on lower interest rates to participants in the Money Pool. The Commission Staff has reviewed the amendments and recommends granting the request. The Order approves the requested amendments.

Are there any objections to approving the Order?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the Order is approved.

Item G-9 concerns a motion to withdraw the application for service authority to operate as an alternative gas supplier.

Are there any objections to granting the motion to withdraw the application?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the motion to withdraw is granted.

Moving on to our Telecommunications items.

Item T-1 concerns a petition for determination of the amount and form of supplemental assistance to be provided by local exchange telecommunications carriers. The Order determines that the Universal Telephone Service Assistance

Program should provide a connection fee assistance to eligible new subscribers for an amount up to $35. The Order also authorizes eligible telecommunications carriers to continue to pass through to their qualified low-income customers the full amount of the federal Lifeline support, which is $9.25.

Are there any objections to approving the Order?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the Order is approved.

Item T-2 concerns an amended application for authority to operate as a reseller of Interexchange Communications in Illinois. The Order grants the certificate, finding that the applicant meets the requirements.

Are there any objections to approving the Order?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the Order is approved.

Item T-3 concerns Docket 19-1110, which is a complaint against AT&T Illinois as to a failure to return a refund. The parties filed a stipulation and

joint motion to dismiss, noting that they resolved all of the disputes and asking the Commission to dismiss the complaint with prejudice.

Are there any objections to granting the joint motion and dismissing the complaint with prejudice?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the motion is -- the motion to dismiss is granted.

Items T-4 through T-13 concern requests for proprietary treatment of information in the petitioners' annual reports. The Orders grant the protection, finding that the information is highly proprietary and confidential.

Are there any objections to considering these items together and approving the Orders?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the Orders are approved.

Items T-14 through T-18 concern petitions by telecommunications service providers to cancel their certificates to operate in Illinois. The Orders cancel those certificates, finding that the cancellations will not deprive any Illinois customer

of necessary telecommunications services and are not otherwise contrary to the public interest.

Are there any objections to considering these items together and approving the Orders?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the Orders are approved.

Now moving on to our Water and Sewer items.

Item W-1 concerns Illinois-American's filing to revise its filed rate schedule sheets. The Commission suspended the proposed changes in November 2019. The Commission's investigation in this matter has not been concluded, and it is necessary, therefore, to extend the period of suspension for a -- for a further period of six months. The Order extends the suspension until October 1st, 2020.

Are there any objections to approving the Order?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the Order is approved.

Under our Miscellaneous items, item M-1 concerns Docket 19-0696, which is a proposed repeal

of Part 793 of the Commission's rules. Part 793 implemented Section 13-407 of the Public Utilities Act, which required the Commission to report annually to the General Assembly on the telecommunications markets in Illinois. Section 13-407 was repealed in 2018, so Part 793 can also be repealed. The second notice of the proposed repealer was submitted to the Joint Committee on Administrative Rules, which considered the rulemaking in its November 2019 meeting and issued a certificate of no objection. The Order thus adopts the repeal of the Part 793.

Are there any objections to approving the Order?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the Order is approved.

Item M-2 concerns an application to use, occupy and construct facilities in public right-of-ways for the delivery of video service and for State-issued authority to provide a video service to the Villages of Teutopolis and Watson. The Administrative Law Judge recommends granting the authority for the applicant subject to the applicant's lawful operation.

Are there any objections to granting this authorization?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the authorization is granted. The Commission notes that this grant of authority is subject to the lawful operation of video service by the applicant, its affiliated entities, and its successors in interest.

Moving on to our Petitions For Rehearing.

Item PR-1 concerns Docket 19-0771, which is a complaint against Ameren regarding issues associated with an easement on complainant's property related to the electric transmission line. The complainant requests a rehearing, citing procedural defects in the Commission's order to dismiss and requesting the opportunity to introduce additional evidence. The complainant also requests oral argument.

The Administrative Law Judge recommends that the Commission deny the application for rehearing because the Order suffers no failed defect, either under the Illinois Civil Procedure Act, nor under the Illinois Administrative Procedure Act, and the Commission does not have the subject matter

jurisdiction to interpret the parties' respective rights pursuant to the 1929 Easement. The Administrative Law Judge also recommends that the Commission deny the request for oral argument because the parties have extensively briefed the issues in their filings and there are no facts which complainant can allege that will vest with -- the Commission with subject matter jurisdiction over the complainant's claims. The Commission agrees with both recommendations.

Are there any objections to denying the Petition For Rehearing and the requests for oral argument?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the Petition For Rehearing and the request for oral argument are denied.

Item O-1 concerns approval of batches, contracts, and confirmations under the Illinois Adjustable Block Program.

Any there any objections to approving the Program Administrator's submissions?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the

submissions are approved.

Item O-2 concerns approval of batches, contracts, and confirmations under the Illinois Solar For All Program.

Are there any objections to approving the Program Administrator's submissions?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, the submissions are approved.

And then item O-3 concerns the Kiefner and Associates Engineering Study of Peoples Gas Cast Iron and Ductile Iron Pipeline System. The report was prepared pursuant to the Orders in Docket 16-0376 and 18-1092. We have Paul Jukes from Kiefner and Associates to present the findings and recommendations from the study and to answer questions from Commissioners. We also have Juan Santiago from Peoples Gas with us to comment on the report and answer Commissioners' questions.

So we'll start with Kiefner and Associates. Dr. Jukes, if you want to step up to the microphone, you may proceed. Thank you.

DR. PAUL JUKES: Thank you very much, Chairman, and thank you, Commissioners. Thank you

for allowing me to speak this afternoon.

My name is Paul Jukes. And I work with the Kiefner and Associates organization. And I'm today joined by the President and Chief Engineer Trae Miller, who's joining me today.

The main name of the presentation is to prevent -- present the findings of the 2020 engineering study. The project was actually undertaken by a team of engineers. And we had a lot of experienced engineers. Most of the people that participated, the main primary contributors had advanced degrees. And the accumulation of experience by these people was in the order of 150 years.

What I'll do today is give a very high level overview of the actual project and then I will jump into the executive summary and the main conclusions and the recommendations of this work. And then I'll take questions at the end.

In terms of a project overview, this was an independent study as directed by the ICC Docket 16-0376. And it predominantly looked at three main themes, and we'll see most of this during the presentation. That of corrosion, structural analysis, and risk.

The main name is to use this to look at the cast iron and ductile iron and to evaluate the safety and the pace of replacement. This project was a 12-month in duration which allowed us to dig deep into the technical aspects of the project, and as mentioned earlier, we had eight engineers on the project.

As well as involving distant studies, part of this work was actually to go out to the streets of Chicago and retrieve pipe coupon samples. I'll show you some pictures of that and also some soil. As well as several months of a risk analysis, we also undertook a two-day risk session with 14 PGL subject matter experts.

The slide before you just gives you a brief overview of the actual project schedule and how the project was laid out. As mentioned, it was a one-year project which started in February and then ended in December. The first part of the review was to review previous studies done by previous engineering companies. There was previous Zinder reports undertaken in 1991, 1994, and 2002, and also a Kiefner study in 2007.

After the initial reviews had been

undertaken, we then undertook evaluation of the SMP and the cast iron and ductile iron system that PGL had. So this looked at the amount of infantry, and we looked at the level of lakes -- leaks, breaks, and cracks. Next part was undertaken a couple of months, the site visits. And we went out to eight site locations to receive these pipe samples and soil and then these were sent to our lab in Columbus where we'd undertake our corrosion testing.

Corrosion testing, the structure analysis, and the risk parts, these are the main core parts of this study, and these were running parallel, went over a period of several months, from about March until the end of September. And then we undertook a lot of risk analyses and we held this two-day risk workshop.

Throughout the work, a number of technical notes were issued and then we issued a final report and draft in December, and then it was formally issued in January of 2020.

In terms of undertaking this type of engineering study, around these three main areas of corrosion, structure analysis, and risk, we had to develop and use a number of models. So models were

developed for this engineering study. On the corrosion, we had to develop a coupon database. So we were able to obtain 1,249 coupon data points from PGL and develop a database. From this database, we allowed this to predict a corrosion model, and that allowed us to look at things like corrosion rate and to look at the useful life and the remaining life of the pipelines.

The second aspect was to look at the structural performance of the pipe, very important to look at the external loads and develop a simple beam model and then a more advanced beam model, using what we call final element analysis, to look at the effect of pipe/soil interaction and external loads. This model allowed us to look at failure mechanisms and to see the level of loading that the pipe sees.

The third part was to develop and use the risk tools as mentioned earlier. This involved a risk session with SMEs. We undertook what we called a hazard assessment to look at all of the hazards that affects the system. There's 154 that were identified, and then that allowed us to have risk models, a risk matrix, and undertake a risk assessment. I'll show you the results in this

presentation.

Just to show you aspects of the corrosion, just before you are some photographs of the pipe. So basically we went out to the field and obtained coupons. The top left-hand picture shows a technician cutting out a coupon. A coupon is a 1 to 2 inch disc. And I believe there's a couple of these discs being passed around this afternoon.

If you just have a look at the condition of the pipe, these pipes are old. The average age is over 90 years. And the pictures of the pipes before you are 125 years old and also 137 years old. And you can see just the corrosion and the scaling effect on the outside of the pipe.

So coupons were actually taken from the pipe, and we also sent a 2-foot section of the pipe to our lab to undertake a corrosion analysis. Just to show you a little bit of what a coupon looks like, on the left-hand side, this is a coupon as you see that's cut from the pipe. The bottom image on the left shows you the coupon and plan. And then the one above it is a side view. And then before we could actually ascertain the level of corrosion, we have to clean the specimen. So on the right-hand side, this

shows you the coupon after it's been cleaned due to a grit of blasting. So it was very important to remove the initial dead material.

Just to show you some of the things that we would see. After the coupon has been cleaned, this is a side view of the coupon, and this is very important. The top layer shows you what we call graphitic corrosion. And this is where iron is removed from the cast iron. You're left with graphite. It has very low strength. It doesn't change its volume, and it's not easy to see the difference between that and the mother pipe. But just below it, you have the mother pipe.

So once the coupon has been cleaned, we know the original normal thickness when the pipe was installed. And then we can look at the coupon here and gauge how much general and graphitic corrosion has occurred. The important point I'd like to make is that that graphitic corrosion you see at the top actually goes a long way into the specimen. So that coupon sample is cut in half, and this is where the coupon is cut in half and viewed under a microscope. The graphitic corrosion extends way into the cast iron, and that would not be seen unless you cut the

specimen open. Two points to make is that this going into the sample reduces the strength of the cast iron. So it doesn't make it very strong. And it was seen that the extent of the graphitic erosion goes up to 50 percent of the wall thickness. In one particular case, we noticed that it had gone into 83 percent of the thickness. So because of that, you don't get much strength left in the -- in the pipe.

Moving on to the structural analysis, we developed a number of tools to look at the structural performance of the pipe. And once the model has been created, we can actually look at external failure mechanisms, such things as frost heave, support washout. This is where the pipe is sitting on wood supports, and due to water or degradation of the wood, supports are washed away, or ground movement, which is quite common in Chicago. We could also look at wall thinning due to corrosion and that of thermal expansion.

But what you see on the right-hand side is a table of numbers which shows you how much the loading is increased in the pipe due to these external defects. And only by running the model could we see that external loading has a big factor to play. The

image on the bottom just shows you the form and shape of a pipe due to frost heave, and the rate indicates a region of high stress on the pipe.

Once we'd done that, we then looked at a risk model. So a risk model was developed to look at all of the factors that go onto the actual system, everything from looking at materials in welding, corrosion, things like incorrect operation. So we included all of the risks that would affect the system.

Once we've done that, we could then run the model of multiple tie-ins and look at what we call the risk reduction. So what we have here is a graph of normalized risk on the vertical axis, and on the X axis, we have the date for completion of removal of the pipes. What we see, as you extend the days out for replacement, then you are effectively carrying more risk in the system.

Just to show that as some numbers, here's a table of the columns of year completion date, a risk score, and a relative risk change. So the important points to note is that if we take 2040 as the year of completion and take that as zero, if we extend the replacement of the pipes out to -- out to say 2070,

the relative risk increases by 135 percent. But if we accelerate the SMP, then the risk actually reduces.

So this is an important thing. If you extend the SMP, then the pipes are deteriorating. Corrosion is happening. External loads are happening. And you're having to live with that risk. And that's what this risk model has shown.

As well as running a risk model, we looked at risk matrices. And this looked at all the hazards in the system. So on the left-hand side, you have a list of all the categories that were identified. 154 hazards were identified for this system as it is today. And that was plotted into the matrix on the left-hand side.

On the right-hand side, we have a risk distribution once all the cast iron and ductile iron pipes have been removed. And we saw a reduction of at least 31 percent in risk reduction with the cast iron and ductile iron pipes taken out.

Just moving on to what the results were actually saying. We found that over 83 percent of the pipes have less than 15 years of remaining life. And this table here just summarizes the results. We

have pipe diameter from 4 inch up to 48 inch. And then we have a list of the average service life of these pipes. And as mentioned earlier, on average, these pipes are older than 90 years. And they're at the higher end of their life with some of them being up to 137 years of age. The remaining life is what's calculated, known corrosion, known external forces, known risks. We can calculate the remaining life these pipes have. And it was a surprise to see that there is not much remaining life, especially for the smaller diameters. The 6-inch pipe is where we have most mileage. It's about 750 miles in Chicago. And that has very low remaining life.

This is just another representation of the numbers in that of a graph. On the vertical axis, you have the remaining life. The rated dash line indicates replacement at the end of the SMP in 2040. And then on the X axis, you have each of the diameters, and you can see that for the range of 4 to 12 inch, there is less remaining life. And as you have larger pipes, such as 36 inch and 48 inch, that has a little bit more life left in the system.

Just to show this as a pie chart, for 1,356 miles of cast iron and ductile iron pipes, 83 percent

has less than 15 years remaining life, which is a big proportion. It's about 1,100 miles. And then you have 13 percent that has 15 to 30 years of remaining life. And then you just have 4 percent that has greater than 4 percent. So that's not very much mileage. About 40 miles that has 4 percent.

So just jumping onto the conclusions. The study showed that the current 1,356 miles of cast iron and ductile iron pipes, 83 percent have an average remaining life of less than 15 years.

This is an old system. It is aging, and we're at the remaining life of the cast iron pipes. This aging infrastructure explains that the SMP has been good in decreasing the number of total leaks because we're reducing the number of miles of pipe, but there has been not a noticeable reduction in what we call the failure rates. The failure rates are the number of failures that happen per mile, and that has not seen a noticeable reduction in the last decade. And that is because these pipes are old. They're aging and they're undergoing these kind of external loading. And cast iron is very prone to breaking because it's a very brittle material. The replacement rate has not been fast enough to

compensate for the increase in these failure rates that have been observed.

Based on the work that's been undertaken, the study recommends to replace the pipes not by 2040, but to accelerate the replacement by 2030, which is ten years earlier because there is not much remaining life left in the pipes and also by not seeing this noticeable reduction in leak rates. So the longer we live with these pipes, there's a greater risk and more chance of leaks and breaks happening.

This study would not recommend to de-accelerate the replacement to 2045, to extend it out by another five years for the reasons mentioned. You carry more risk and there will be increased leaks, breaks, and cracks.

Now, what was interesting from this engineering study, graphitic corrosion was found to be an important factor. It was found to be the main factor. We found external effects, natural forces due to permafrost and ground movement and excavation damage more significant. These things cause a lot of bending onto the pipes, and corrosion is just found to be that extra tipping point that reduces its

structural strength and leads to a leak, break, or crack.

The last slide of conclusions, the engineering study showed that completion of the SMP program will reduce in a significant risk reduction, and that was seen by the risk models that we had run and also by that of the hazard risk matrices, and the risk reduction will be in the order of 31 percent and that is beneficial and significant.

The study finally found that it advises PGL to prioritize its replacement program towards the smaller pipes, specifically around the 6 inch, because as mentioned, you have about 67 percent of the mileage consistent with 6-inch pipes. These are prone to bending and to breaking. So it's recommended to focus on the small diameters. And that being said, that concludes the findings from the 2020 engineering study.

CHAIRMAN ZALEWSKI: Thank you, Dr. Jukes.

Does any Commissioners have questions?

COMMISSIONER BOCANEGRA: Chairman Zalewski, Commissioner Bocanegra here from Chicago. I do have one question for Mr. Dukes, if that's okay.

CHAIRMAN ZALEWSKI: Yes, please.

COMMISSIONER BOCANEGRA: Mr. Dukes, thank you this afternoon for your presentation. You somewhat answered my question there at the last portion regarding prioritization. I'll expand a little bit on the original question I have for you, which was from an engineering perspective, how are these pipeline replacement prioritized in terms of higher risk infrastructure? And I know you mentioned 6-inch pipes are recommended to be replaced first. My question then is whether the prioritization is based on -- or actually rather what it's based on? You highlight a number of risks, including potential failure mechanism, system risks, various hazards. I'm wondering if the study takes into account, you know, neighborhood locations, aging, or is it just a generic recommendation for replacement of 6-inch pipeline?

DR. JUKES: Yeah. Thank you. The study looked at the pipes by looking at the corrosion, looking at the risks, and looking at the structural analysis. And based on that, it allowed us to -- to see which pipes had least remaining life and to then come up with recommendations based on the pipe diameter.

PGL has a neighborhood approach. And it would then be down to them to prioritize how this would fit into their neighborhood replacement program. And we did not look at time planning or cost estimates of what that would take. We purely looked at the engineering perspective of the factors that affect the remaining life of these pipes, and that being corrosion, looking at structure analysis, and bending, and risk as well. Did that answer your question?

COMMISSIONER BOCANEGRA: Yes. Thank you. If I could just expand on that then. So do you know from an engineering perspective if -- if PG is taking the neighborhood approach, did your information indicate whether they are prioritizing 6 inch within the neighborhood approach, or do you not know?

DR. JUKES: From my preliminary review, we looked at the SMP. And I believe that they have a scoring mechanism that allows them to rank these things accordingly. It's called an MRI. So, yes, they have a mechanism for prioritizing the pipe. And if there is pipes that are at risk for leaks, breaks, and cracks, they do have that within their mechanism of dealing with this.

COMMISSIONER BOCANEGRA: Thank you. That's all I have.

COMMISSIONER KIMBREL: I'm embarrassed to ask, because it's probably in your report, in the larger one we have. But of the 1,342 miles of inventory of cast iron and ductile iron pipe that is left, what percentage of that is 6 inch?

DR. JUKES: Yeah. It's about 67 percent.

COMMISSIONER KIMBREL: Oh.

DR. JUKES: And it's about at least 770 miles. So the majority is around the 6 inch, and the important point to note is that because of its size, if there's any external loading, it will bend the pipe. And cast iron is very brittle, so it could lead to breaking. And, again, this corrosion aspect that is happening is kind of a tipping point as well.

COMMISSIONER KIMBREL: Uh-huh.

DR. JUKES: So -- so, yeah, so 6 inch there is in terms of cast iron, about 760 miles, and it's about 67 percent of the infantry is around that diameter.

COMMISSIONER KIMBREL: Okay. Thank you.

CHAIRMAN ZALEWSKI: Anyone else?

Thank you, Dr. Jukes. That was helpful.

Thank you.

Next we'll hear from Peoples Gas, Mr. Santiago, whenever -- Santiago. Excuse me. Whenever you're ready.

MR. SANTIAGO: Thank you, Chairman and Commissioners, for giving me an opportunity to appear before you today.

My name is Juan Santiago. I am the manager of engineering performance and the main point of contact for the Kiefner report. I will provide a short response on behalf of Peoples Gas to the independent engineering report by Kiefner and Associates regarding the state of the gas delivery system in the City of Chicago that was ordered in Docket Number 16-0376.

The Commission ordered an independent engineering firm to conduct a comprehensive study to assess the physical conditions and risks of Chicago's gas delivery system. As the Commission is well aware, Peoples Gas is currently executing a comprehensive program, pursuant to Illinois law, to improve the safety and delivery of natural gas service to -- in all of Chicago's neighborhoods by replacing its aging and corroding cast and ductile

iron gas pipe throughout our system.

Most of this pipe is over 100 years old and is past or near the end of its life. We have been upgrading our system with modern and safer equipment on an accelerated basis. And we call our program the System Modernization Program or SMP. Our efforts to improve the safety of Chicago's gas delivery system have intensified over the past decade. In 2011, the federal government made replacement of old, at risk pipe a priority after high profile explosions in San Bruno, California and Allentown, Pennsylvania. PHMSA issued a call to action that urged pipeline owners and operators to conduct comprehensive reviews, identify high-risk pipe, and accelerate critical repair and replacement work. In 2013 Illinois adopted a similar policy when the General Assembly passed the Natural Gas Consumer, Safety and Reliability Act to ensure the accelerated replacement of these aging pipes, not just in Chicago, but throughout Illinois.

The Kiefner findings largely confirm the growing challenges we face at Peoples Gas in ensuring a safe and reliable gas delivery system in the City of Chicago. Executing a program of this magnitude to

ensure safety in the third largest U.S. city is a significant challenge.

We appreciate the ICC oversight over the SMP program. In addition to the law's cost recovery limits, the Commission initiated a two-year review of the program in early 2016. Peoples Gas participated in multiple workshops with stakeholders, including the Commission staff, the Attorney General, CUB, and the City of Chicago, that looked at the future of the SMP program. Further, the Commission reviews each year's SMP costs to ensure those costs were prudently incurred. Additionally, to ensure transparency and accountability, the Commission also requires quarterly reports with over 40 detailed metrics, measuring the program's progress, efficiency, and independent auditing.

The Kiefner study took over a year to complete. Kiefner conducted an independent analysis using our data, its own site visits, and expertise in risk analysis. Kiefner selected a variety of sites for the taking of the coupon samples and applied its more thorough sample collection process to better assess material conditions. The study thoroughly assessed our system, with the goal of looking at the

safety aspects of the replacement pace of the SMP.

The 2020 Engineering Study made the following critical conclusions. Number one, delaying the critical work of replacing aging pipes in Chicago will result in increased safety risks for everybody.

Number two, this study concluded that over 80 percent of the pipes we have in our gas delivery system, some that are more than a hundred years old, have an average remaining life of less than 15 years, confirming the urgency of our work.

Thirdly, the study also found that completion of the SMP program would result in a significant relative reduction of the risk we all face. Because risk and safety are generally inversely proportional, reducing the risk we all face with our aging system will increase the safety of our delivery network. Elimination of cast iron and ductile iron in PGL's distribution system will greatly reduce the effects of corrosion, damage from natural forces, and risk from excavation damage.

The study also found that graphitic corrosion in conjunction with everyday natural forces such as frost heaves, support washout, ground settlement, thermal expansion of the pipe, and

excavation damage are very significant factors in cast and ductile iron pipe failure. The loss of wall thickness due to corrosion creates a failure tipping point when present with other natural factors which collectively increase the risk of the pipe failure.

The study recommends that SMP be accelerated to finish ten years sooner than the current pace, which is between 2038 and 2042. Kiefner concludes that the replacement rate has not been fast enough to compensate for the increase in failure rates expected for the aging system.

We take these recommendations seriously. The safety of our customers and employees is our top priority.

We are committed to providing safe, reliable, clean, efficient energy to homes and businesses in Chicago's -- in Chicago year round, including through Chicago's very cold winters and Polar Vortex temperatures. We feel that our modernized and extensive natural gas infrastructure lower greenhouse gas emissions due to reduced gas leaks, and the current and projected low cost for natural gas provide an overall value to our customers.

We look forward to working with the Commission in its evaluation of all the findings and recommendations in the Kiefner study. Thank you.

CHAIRMAN ZALEWSKI: Thank you.

Do any of the Commissioners have any questions?

COMMISSIONER BOCANEGRA: Sure. Commissioner Bocanegra here.

I think I'm getting some feedback. Can you guys hear me okay?

CHAIRMAN ZALEWSKI: We can hear you. Go ahead. Thank you.

COMMISSIONER BOCANEGRA: Mr. Santiago, I just have a couple of questions. I note that in your remarks, and I'm aware that the Kiefner report was in part borne through an Order issued by the Commission in the 2016 case. My question for you is, can you just tell me by way of background whether the report itself was based in part at all through -- or borne from these stakeholder workshops that you mentioned? I'm not sure if that was the result in part from those workshops or if that was independent.

MR. SANTIAGO: I'd have to refer to Koby.

MR. BAILEY: Commissioner, Koby Bailey.

The -- really the statement of work and structure of the report came out of Docket 18-1092, which followed up on 16-0376, which gave the outline structure.

COMMISSIONER BOCANEGRA: Thank you.

CHAIRMAN ZALEWSKI: Commissioner?

COMMISSIONER KIMBREL: No. Outside of stating that I had every reason to be embarrassed by my question, because I saw the answer on page 1 of the report.

CHAIRMAN ZALEWSKI: I just want to confirm, did this study consider costs in accelerating the plan by ten years?

MR. SANTIAGO: So the study did have a general look at costs. It was based on the evaluation of the Burns & McDonnell model which was previously conducted. But in essence, the Kiefner report used that as the basis. In the report, it shows that by delaying the program, the cost definitely would go up. And then by accelerating it, we would see, if I'm remembering correctly, depending on how fast you accelerate, at least half of a $10 million cost savings. So there was a good point of cost in there.

CHAIRMAN ZALEWSKI: Any other questions?

Thank you. Thank you for your time today. We really appreciate the information. Thank you.

Are there any other comments or questions overall?

(No response.)

CHAIRMAN ZALEWSKI: So this concludes our Public Utility agenda.

Judge Teague-Kingsley, do we have any other matters to come before the Commission today?

JUDGE TEAGUE-KINGSLEY: No, Madam Chairman.

CHAIRMAN ZALEWSKI: Thank you.

Do any other Commissioners have any other business to discuss?

(No response.)

CHAIRMAN ZALEWSKI: Hearing none, without objections, the meeting is adjourned. Thank you. Have a great afternoon.

(Whereupon, the meeting was adjourned.)