BEFORE THE PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA

COLUMBIA, SOUTH CAROLINA

HEARING #10-11165 DECEMBER 15, 2010 3:15 P.M.

ALLOWABLE EX PARTE BRIEFING

REQUESTED BY THE PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA - SC Natural Gas Research and Development Essentials

TRANSCRIPT OF PROCEEDINGS

COMMISSIONERS PRESENT: John E. 'Butch' HOWARD, *CHAIRMAN,* David A. WRIGHT, *VICE CHAIRMAN*; and COMMISSIONERS Elizabeth B. 'Lib' FLEMING, G. O'Neal HAMILTON, Randy MITCHELL, Swain E. WHITFIELD, and Nikiya 'Nikki' HALL

ADVISOR TO COMMISSION: Josh Minges, Esq.

STAFF: Jocelyn G. Boyd, Chief Clerk/Administrator; F. David Butler, Jr., Senior Counsel; James Spearman, Ph.D., Executive Assistant to the Commissioners; B. Randall Dong, Esq., and Rebecca Dulin, Esq., Legal Staff; Phil Riley and Tom Ellison, Advisory Staff; Jo Elizabeth M. Wheat, CVR-CM-GNSC, Court Reporter; and Deborah Easterling, Hearing Room Assistant

APPEARANCES:

DONALD L. MASON and RON EDELSTEIN, presenters

NANETTE S. EDWARDS, ESQUIRE, representing the **OFFICE OF REGULATORY STAFF**

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

2 **CHAIRMAN HOWARD**: This ex parte briefing is
3 now called to order. I'll ask Attorney Minges to
4 read the docket.
5 **MR. MINGES**: Thank you, Mr. Chairman. Good
6 afternoon. An allowable ex parte briefing has been
7 scheduled with the South Carolina Public Service
8 Commission by the Gas Technology Institute to
9 present information on natural gas research and
10 development essentials.
11 This briefing has been scheduled to take place
12 on December 15, 2010, in the Commission's hearing
13 room. Mr. Chairman, all is in order.
14 **CHAIRMAN HOWARD**: Thank you. Mr. Mason, you
15 have the floor.
16 **MR. MASON**: Thank you, very much, Mr. Chairman
17 and Commission. Just by way of brief introduction,
18 as indicated, I'm a former Commissioners from Ohio.
19 And as an Ohioan, we look at South Carolina as
20 being our future home.
21 [Laughter]
22 And there are two of my neighbors who actually
23 own property in South Carolina, so I wanted them to
24 know things are in good hands, here in your fine
25 state.

1 I'm also, on a very serious note, impressed
2 that so many of the commissioners from South
3 Carolina have gotten involved at the national
4 level, have had a tremendous impact on the gas,
5 critical infrastructure, nuclear energy, and
6 telecommunication, and water sides, not to mention
7 next year the, I guess, esteemed honor of one of
8 your fellow commissioners becoming president of
9 NARUC. It's very impressive that your state has
10 gotten that involved. It's too bad many other
11 states have not gotten that involved. But equally
12 impressive is the fact that you've had many of your
13 staff people attend the commission meetings at the
14 NARUC meetings. And I think, as a former
15 commissioner, I feel that's very important, to have
16 your staff as knowledgeable of what's going on
17 across the country.
18 Well, at NARUC, as many of you know, I
19 primarily worked on natural gas interests. And
20 with that, the Gas Technology Institute actually is
21 the nation's largest nonprofit research-and-
22 development corporation that specializes and
23 focuses in natural gas appliances, energy
24 efficiency, and other end-use products.
25 So with that being the case, I have the

1 opportunity now to introduce Ron Edelstein, who is,
2 in fact, the Washington, DC, office director, but
3 also is the direct communication and liaison to
4 NARUC and to your commissioners at the state level.
5 Unfortunately, I'll be slipping out during the
6 middle of the meeting, and I apologize for that,
7 but once again, thank you for granting us this
8 courtesy.
9 **CHAIRMAN HOWARD**: Thank you, Mr. Mason. Mr.
10 Edelstein.
11 **MR. EDELSTEIN**: Thank you, Mr. Chairman, and
12 Commissioners. It's a pleasure to be here today.
13 I'm going to talk to you a little bit about natural
14 gas R&D needs. I'm going to focus on gas
15 operations R&D.
16 [Reference: PowerPoint *Natural Gas*
17 *Operations R&D Needs,* Slide 1]
18 Gas Technology Institute has been around since
19 1977. We, with our predecessor organization -- we
20 were the Gas Research Institute at that time -- the
21 Institute of Gas Technology, which was around since
22 the early 1940s, which was a little bit even before
23 my time, was established as the research lab for
24 the gas industry. GTI was formed out of the Gas
25 Research Institute and the Institute of Gas

1 Technology in 2000, to be the natural gas R&D
2 Center for gas consumers and the gas industry in
3 this country.
4 We look at natural gas supply R&D, including
5 the unconventional gas -- the shales that are now
6 being looked at across the country, and coal-bed
7 methane, as well. We look at pipeline distribution
8 system safety and integrity. We also look at end-
9 use R&D.
10 Today I'll be focusing on natural gas
11 operations and distribution safety and the
12 distribution integrity area, and concentrating on
13 that particular area.
14 So with that, we'll roll ahead here. I'm also
15 a Southerner, even though I don't sound like it. I
16 now live in Virginia, so --
17 [Laughter]
18 [Reference: PowerPoint *Natural Gas*
19 *Operations R&D Needs,* Slide 2]
20 Okay. South Carolina. This is from *A.G.A.*
21 *Gas Facts*, but there is very little bare steel for
22 gas mains in South Carolina. Most of the steel is
23 both coated and cathodically protected, about 8,500
24 miles; plastic pipe is about 11,700 miles; giving
25 me a total of about 20,000 miles, so we'll be

1 focusing on both the steel pipe and the plastic
2 pipe, and what can be done to keep the system safe
3 and to keep the integrity high here in South
4 Carolina. We'll be looking at some of the research
5 that's proposed and underway at Gas Technology
6 Institute.
7 [Reference: PowerPoint *Natural Gas*
8 *Operations R&D Needs,* Slide 3]
9 Challenges in the distribution area: Most of
10 you know the third-party -- that is, damage caused
11 not by the utilities or their contractors, but by
12 other excavation companies -- is identified as a
13 leading threat to distribution facilities.
14 Distribution integrity management, following along
15 the lines of pipeline integrity management, is, you
16 know, very critical to the integrity of the
17 distribution system. And a lot of those challenges
18 fall at the state level. And plastic pipe location
19 is still a major challenge. Most plastic pipe has
20 tracer wire over it, but the plastic pipe was
21 buried a long time ago, some in the 1960s, and some
22 of that tracer wire is no longer operable, and so
23 it's almost impossible to locate the plastic pipe
24 once the tracer wire is disconnected.
25 So we'll start off.

[Reference: PowerPoint *Natural Gas Operations R&D Needs,* Slide 4]

To look at damage to the infrastructure, there's a couple of different things we focus on. We try to look at the whole system, from the city gate to the end-user property and through the service line to the meter. We look for root causes to damages, to try to prevent those from happening. We attempt to develop technology and hardware, as well as look at soft solutions. And we try to get partners involved in this, including manufacturers and vendors that sell this equipment, and gas companies as well, as part of this, and then to participate nationally in some industry damage prevention initiatives, as well.

[Reference: PowerPoint *Natural Gas Operations R&D Needs,* Slide 5]

So I'm going to focus on a couple of areas here. We'll look at excavator encroachments, the major cause of third-party damage. We'll look at mark-outs. We'll look at unlocatable pipe, including that plastic pipe I was talking about, but also sewer lines, which are another issue that you have to deal with if you're putting natural gas systems under the ground. And facility maps, and

1 then some regulatory drivers, as well.
2 [Reference: PowerPoint *Natural Gas*
3 *Operations R&D Needs,* Slide 6]
4 So, third-party damage, excavator
5 encroachments. So the issues here are ignoring
6 one-call centers and statutes that you have in
7 place here and that are in place in almost all the
8 other states, and excavating too close to
9 underground facilities, so that you cause damage to
10 the facilities, and it includes gas lines, includes
11 other underground utilities, as well. And what
12 we'll talk about is the general positioning
13 satellite, the GPS systems, excavation encroachment
14 monitoring; we'll look at evaluation monitoring and
15 detection technologies, and then finally some tools
16 that we're developing that help operators and
17 excavators dig near pipe without causing damage to
18 the pipe. So we'll you look at those.
19 [Reference: PowerPoint *Natural Gas*
20 *Operations R&D Needs,* Slide 7]
21 A particular activity here is to look at a
22 GPS-based system, and the intent here is to
23 actually protect against excavators that don't use
24 the one-call center and so there's insufficient
25 notification. And the ability actually is to put

1 GPS-mounted equipment on the excavator equipment
2 itself, to be able to locate the excavator. The
3 other possibility is to surround the field with an
4 -- the pipe with an optical base system that would
5 alert of encroachments into that system by
6 disturbing the optical fiber system that's buried
7 in the ground. So either of those approaches are
8 -- either of those approaches are possible.
9 [Reference: PowerPoint *Natural Gas*
10 *Operations R&D Needs,* Slide 8]
11 So we'll look at -- this is only one of the
12 many activities that we're working on. This just
13 goes through a couple of the tasks. So we have a
14 Steering Committee made up of utility companies,
15 regulators, locators, excavators, one-call centers,
16 and the data here is a GPS monitoring antenna and
17 then the ability to transmit this data across to
18 one-call centers and utility companies, as well.
19 [Reference: PowerPoint *Natural Gas*
20 *Operations R&D Needs,* Slide 9]
21 So imagine now that you have a system where
22 you have one-call monitoring software, you're able
23 to cross-reference the one-call tickets, you're
24 able to look at -- and you'll notice areas where
25 excavators are operating shown in blue there, and

1 then you'll have a violation there, shown in red,
2 where someone is digging near a pipe and hasn't
3 contacted a one-call system. That's one of the
4 activities here. If you take a look at this now --
5 [Reference: PowerPoint *Natural Gas*
6 *Operations R&D Needs,* Slide 10]
7 -- it's actually possible now, using satellite
8 technology, to actually locate the person or
9 vehicle that's causing the damage, and to be able
10 to spot him. Now, we don't say you can do this in
11 real-time, but at least you'll have a record of
12 when this occurs, and more importantly, where it
13 occurs. Because one of the big problems is, if
14 someone hits a pipe, if they hit a steel pipe, they
15 can damage it but not penetrate it, and bury it up
16 again and then years later you run into problems.
17 This is one of the big issues, and this is what
18 happened in the Jersey incident and other incidents
19 that have occurred on a lot of the higher-pressure
20 pipe that has been troubled.
21 The plastic pipe, you hit that, it usually
22 goes through and so you'll usually have a release
23 of gas there, and that one is a lot more easily
24 detectable and noticeable.
25 [Reference: PowerPoint *Natural Gas*

1 *Operations R&D Needs,* Slide 11]
2 So, okay. We worked in this particular case
3 with Virginia, which has one of the most rigorous
4 systems in the country, as you know, probably, that
5 Virginia has the ability to regulate excavators.
6 It makes a big, big difference here. And so we're
7 working with the State of Virginia, working with
8 the utility companies, excavators, locators, the
9 one-call center, to look at the feasibility and
10 effectiveness of this. And then, finally, we're
11 going to come up with implementation guidelines.
12 This was just a little bit of detail into one
13 particular R&D project that we're working on, to
14 give you kind of a sample.
15 [Reference: PowerPoint *Natural Gas*
16 *Operations R&D Needs,* Slide 12]
17 So now I'm going to shift now to a micro-
18 excavation tool. If you take a look in the upper
19 left, that's a hole that's probably 18 inches in
20 diameter. That is what's called keyhole
21 technology. That's becoming more and more popular
22 now in urban areas or under roads, under sidewalks.
23 And the intent here is to avoid putting in a four-
24 by-six or a six-by-ten bell hole into the street,
25 to make much smaller excavations and then to be

able to do your work, be able to put that plug back in the ground, reseal it, and get out within a day.

Now, if you take a look the bottom -- uh -- bottom left, what you'll see is a hole that's only six inches in diameter. That's a micro-excavation. So this is experimental right now, and the intent is to go down there with an excavator and to be able to clear the ground with an air lance or other tool, clear the soil away once you cut through the top layer of concrete, and to actually be able to soft-locate a utility system. So you simply have to be near a utility line in order to be able to do this. And then you can actually -- so if you have mark-outs and you think you're near a utility line, you can use these soft tools to actually help you locate the system without damaging it, without going in with a pick and shovel, or without going in with the backhoe.

So we think this is very, very -- this tool has actually been developed, tested, and commercialized. This is now available on the market. That's what we attempt to do, is to get the tools we work on actually out there, working in conjunction with the manufacturer.

[Reference: PowerPoint *Natural Gas*

1 *Operations R&D Needs,* Slide 13]
2 We'll talk mark-outs now. We're doing a
3 couple of different activities here. We're looking
4 at active marker technology where you can go ahead
5 and put markers in the ground, and they're
6 available for location, possibly be able to see
7 these on a computer screen so you can mark out your
8 utility lines before your excavator gets out there.
9 And there are soft mark-outs which you can put on,
10 and actually that will disappear over time, so you
11 don't have to go back and clean this up.
12 Ideally what you would like is to be able to
13 walk the utility line and have the one-call map
14 pull up the utility line as you're walking down
15 that system, and have the contractor's proposed
16 excavation route laid on top of that, and so you
17 can see on a computer map actually where the
18 potential encroachments are.
19 So we think this combination of active
20 technology to locate the pipe, with micro-
21 excavation for near-pipe -- if you're not certain
22 where it is, combined with GPS systems, has a lot
23 of potential for minimizing third-party damage.
24 [Reference: PowerPoint *Natural Gas*
25 *Operations R&D Needs,* Slide 14]

1 And now I'm going to shift over to the issue
2 of unlocatable pipe. Natural gas pipe has been in
3 the ground since the 1800s, since the manufactured
4 gas plant days. Now, South Carolina has a little
5 bit newer system, and so you have a lot of
6 advantages there. You don't have the old cast iron
7 buried in the ground, but you do have plastic pipe
8 that's been put in since the '60s. Much of this
9 was put in before GPS systems came into play, and
10 so the exact location isn't quite known. And you
11 need to get within, you know, plus or minus 24
12 inches to be able to do locations on pipe, and so
13 you need to get a lot closer.
14 So, the key -- the challenges are nonmetallic
15 pipe. And it's not only the plastic gas pipe,
16 which is mostly polyethylene. It's also plastic
17 pipe put in by other utilities. In addition, it is
18 the sewer lines that run up to and including the
19 house, and these lines are also very difficult to
20 locate. And it's a combination of the intersection
21 of a number of technologies. There's now
22 horizontal boring tools available -- horizontal
23 directional drilling, HDD equipment, that enables a
24 utility to put in a line simply by putting two
25 holes in the ground, one at each end of the system,

1 and they can run the line underneath. Much less
2 disturbance to the surface. Easy to fix up those
3 holes. But the challenge is those underground
4 boring tools can go through almost anything. And
5 they can go through sewer pipe, and the last place
6 you want your gas line is through a sewer pipe,
7 because when Roto-Rooter comes through to clean out
8 the sewer pipe, he will open up your gas line, and
9 you don't want that to happen.
10 [Reference: PowerPoint *Natural Gas*
11 *Operations R&D Needs,* Slide 15]
12 So the ability to locate sewer laterals is
13 very, very important. The ability to locate
14 nonmetallic, mostly plastic, pipe is also very,
15 very critical. So we'll talk about a couple of
16 those different technologies that we're working on
17 here.
18 We have two different technologies that we're
19 dealing with, one is an acoustic location system
20 which uses sound waves to penetrate the ground. We
21 also have an underground radar system -- ground-
22 penetrating radar that goes back probably to the
23 Vietnam War days, when they were trying to locate
24 plastic mines in the ground, as well. So we use
25 both those technologies.

1 This particular technology shows one of our
2 researchers, which we've put him out on the street
3 there to prove his own technology. And the intent
4 here is to locate plastic pipe, and we've been very
5 successful in being able to do this in both very
6 small, one-quarter-, two-, and four-inch gas mains,
7 and also look at plastic pipe under grass, under
8 asphalt, under concrete, to be able to detect this
9 from surface locations. This is very, very
10 critical in marking out these utility areas and
11 locations.
12 [Reference: PowerPoint *Natural Gas*
13 *Operations R&D Needs,* Slide 16]
14 The second thing is actually to take a
15 horizontal directional drilling tool -- you've
16 probably seen these in the streets where they go
17 under rivers and sidewalks and highways. They also
18 use them in city streets and going through yards,
19 to run service lines. The intent is to put a
20 device on the -- very close to the cutting edge of
21 the tool, and to use the small sensors at the top,
22 arranged in an array shown on the bottom there, to
23 be able to locate where the tool is, then, to use
24 the signal from the tool head, the horizontal
25 directional drilling tool head, to hit the -- the

1 signal will hit the -- this is an acoustic signal
2 in this case -- will hit the plastic pipe or the
3 tree root or the sewer pipe in front of the line,
4 and this will be able to detect that, and then
5 you'll actually be able to steer the horizontal
6 directional drilling tool around the sewer pipe or
7 around the gas pipe. And the key here is a series
8 of both sensors, software, signal sending
9 equipment, with the artificial intelligence to be
10 able to distinguish a sewer pipe from a tree root,
11 from other buried objects in the ground, from an
12 old tin can or other things. Because you're really
13 not locating the plastic, per se; you're locating
14 the void inside the pipe, because plastic is
15 virtually undetectable, unlike metal where you can
16 use magnetic detectors.
17 [Reference: PowerPoint *Natural Gas*
18 *Operations R&D Needs,* Slide 17]
19 So this is another example of the technology.
20 This is a very similar system applied to a -- for a
21 sewer lateral locator. You take an acoustic signal
22 device, shown above, a receiver there, and you use
23 that to send that signal. You pick them up on the
24 surface. And there are just some examples of some
25 of the software shown, down below here. So an

1 attempt to solve a problem that's very, very
2 critical in areas like South Carolina where you're
3 dominated by plastic pipe systems. Very important.
4 [Reference: PowerPoint *Natural Gas*
5 *Operations R&D Needs,* Slide 18]
6 This kind of shows the states where R&D
7 funding has been approved across the country.
8 We've been working on this since probably 1988.
9 I've been doing this since 2000. And we really
10 proceed state by state and sometimes company by
11 company to get R&D approval. We now have approval
12 in more than half the states in the country, and
13 the little numbers just show the number of
14 companies within the states where R&D approval is
15 received.
16 The dollars available are some $27 million
17 across about 25 states, and I'd say about two-
18 thirds of those dollars go to the operations R&D
19 that you've just seen. About one-third of those
20 dollars go to end-use-efficiency R&D. Where the
21 money goes is up to the decisions of the natural
22 gas company within the state and the public utility
23 commission within the state, as to which projects
24 and where the money goes. So this would be a
25 proposed funding mechanism where dollars can be

1 collected. Typically, you're talking somewhere
2 between $1 and $1.50 per customer meter, per year.
3 So maybe, you know, maybe $.12 a month per customer
4 meter that is R&D charge. And that's how that
5 charge is arranged across the country.
6 [Reference: PowerPoint *Natural Gas*
7 *Operations R&D Needs,* Slide 19]
8 So that's really it. This was just to kind of
9 let you kind of know what we're doing in the
10 operations R&D area, some of the needs there. We
11 have similar programs in the end-use area for end-
12 use efficiency. We're dealing with water-heater
13 efficiency, we're dealing with furnace efficiency,
14 we're dealing with indoor air quality and safety,
15 and looking at reducing the cost of equipment while
16 increasing its efficiency substantially.
17 So, I'll be happy to take any questions from
18 the Commissioners or others.
19 **CHAIRMAN HOWARD**: Commissioners, any
20 questions?
21 **COMMISSIONER HAMILTON**: Commissioner Howard.
22 **CHAIRMAN HOWARD**: Commissioner Hamilton.
23 **COMMISSIONER HAMILTON**: This came about at a
24 meeting that I was attending with GTI, and I think
25 it's especially important that I saw and requested

1 that Ron come to our Commission and make a
2 presentation, the gas explosion disaster that we
3 had in California at San Bruno -- I think some of
4 the things that they do could help prevent those
5 things from happening to us in the future. And I
6 know one of our companies in the State, Piedmont, I
7 think participates in this program, their customers
8 do, in probably Tennessee and North Carolina.
9 **MR. EDELSTEIN**: They do in North Carolina.
10 **COMMISSIONER HAMILTON**: I knew they did, and I
11 think it's good. And they do a tremendous amount
12 of research. They've had a great deal to do with
13 technology improvement in the horizontal drilling
14 that's helped us with shale gas and with other
15 things. Ron really hasn't touched the surface of
16 the things that GTI does. And I wanted you to be
17 able to see him and to ask questions and discuss
18 the possibility of a program. I think we have some
19 -- ORS I know is here, and they might have some
20 questions they would like to ask, Mr. Chairman,
21 along with the Commissioners. Thank you, sir.
22 **CHAIRMAN HOWARD**: Thank you, Commissioner.
23 Any other questions?
24 **VICE CHAIRMAN WRIGHT**: Well, Mr. Chairman --
25 **CHAIRMAN HOWARD**: Commissioner Wright.

1 **VICE CHAIRMAN WRIGHT**: Thank you. And thank
2 you, Commissioner Hamilton, because I was kind of
3 -- I guess I'm looking for a little more
4 information or some clarity for me, just to -- the
5 map that you had that showed what states had
6 company and regulatory approval, and those that --
7 I think Ohio was going through the filing process
8 now?
9 **MR. EDELSTEIN**: Yes. Yes.
10 **VICE CHAIRMAN WRIGHT**: And I noticed that our
11 state is a gray state, and --
12 **MR. EDELSTEIN**: It is.
13 **VICE CHAIRMAN WRIGHT**: -- I was wondering,
14 what would it take for us to do something like
15 that?
16 **MR. EDELSTEIN**: It would simply take
17 Commission approval of the R&D charge --
18 [Reference: PowerPoint *Natural Gas*
19 *Operations R&D Needs,* Slide 18]
20 -- and it could happen through a base rate
21 case. If there are rate adjustment mechanisms
22 available for O&M costs and other things, it could
23 happen -- assuming the Commission and the consumer
24 advocate in the State and the companies agree, it
25 could happen through that particular mechanism, and

1 then the company would begin to collect and it
2 would be able to join these programs. So that's
3 really all it would take.
4 **VICE CHAIRMAN WRIGHT**: Then I guess a follow-
5 up, your, I guess, history, what you've seen, the
6 money that's been saved by the technology versus
7 the money collected --
8 **MR. EDELSTEIN**: Yes.
9 **VICE CHAIRMAN WRIGHT**: -- can you give me some
10 idea?
11 **MR. EDELSTEIN**: Yes, I can. That's a very
12 good question. We've done a lot of benefit cost
13 analysis over the years. Typical benefit cost
14 ratio -- and I'm not talking about for the company;
15 I mean for the consumer, versus the money the
16 consumer spends. Typical benefit cost ratio is
17 about 8:1. It ranges from 4:1 to 8:1. Now, not
18 every research project is successful, and we don't
19 know in advance which ones will be successful, but
20 of the ones that are successful and have gone to
21 the marketplace, the benefits to the consumer run
22 between 4:1 and 8:1, based on a cost of all the
23 research, successes and failures.
24 **VICE CHAIRMAN WRIGHT**: So your research kind
25 of dictates which way you're going to go with your

1 tests or with your --
2 **MR. EDELSTEIN**: Well, we --
3 **VICE CHAIRMAN WRIGHT**: -- rolling out of
4 something?
5 **MR. EDELSTEIN**: That's an interesting
6 question. Research ideas really come from the gas
7 companies. We have a Public Interest Advisory
8 Committee, of which Commissioner Hamilton is a
9 member, made up of public utility commissioners
10 appointed by NARUC Gas and ERE Committee -- the
11 Energy Resources and the Environment Committee.
12 Also, NASUCA members are a part of that committee.
13 And so they suggest projects. We get suggestions
14 sometimes from the Office of Pipeline Safety. We
15 work with those. We also work with the Department
16 of Energy, as well.
17 It's a voluntary program, as far as the gas
18 companies are concerned. They get to choose which
19 projects they want to fund and which projects they
20 -- you know, the ones that -- you guys don't have
21 any cast iron? You don't fund cast iron. You're
22 interested in plastic? Or you're interested in
23 steel pipe integrity? You really get to choose,
24 you know, the projects that you think will be the
25 most beneficial to the system safety here in South

1 Carolina or to your gas consumers. You know, you
2 want to improve the efficiency of water heaters
3 here? You can work on water heaters here. You get
4 to choose which technologies you want to work on.
5 And then the company decides on those
6 projects, and then the projects are funded. Money
7 comes from all these 25 states, toward the
8 different projects, and then the projects are
9 funded. About 85 percent of the money goes to the
10 GTI Lab, so about 15 percent goes outside to fund
11 other research entities, and then we try to develop
12 some relationship with the manufacturer that after
13 we test the product, they'll take it to the market,
14 and then the technology is available to folks to
15 use within their state and for consumers to buy if
16 it's a piece of end-use equipment.
17 **VICE CHAIRMAN WRIGHT**: I think it is very
18 interesting. Thank you, very much.
19 **CHAIRMAN HOWARD**: Any other questions?
20 [No response]
21 Mr. Edelstein, I've got a couple questions.
22 What is the depreciation age of your pipes? How
23 long do you depreciate your pipes? Each kind:
24 plastic, cast iron?
25 **MR. EDELSTEIN**: Well, I'm not an accountant,

1 but plastic pipes can last for at least 50 years,
2 especially the mid- to medium and high-density
3 polyethylene. Cast iron actually stabilizes.
4 There's cast iron that's been in -- you don't have
5 any here, fortunately, but there's cast iron that's
6 been in the ground for over 100, almost 150 years.
7 And steel pipe has been around since the 1950s, and
8 depending on how you take care of the steel pipe,
9 that can also last 40 or 50 years. You know, if
10 you have bare steel and you're in an area with
11 corrosive soil, or you have steel that has -- even
12 coated steel that has what's called holidays on it,
13 the pipe lasts less. But steel pipe can typically
14 last, you know, 20 to 50 years, as well.
15 **CHAIRMAN HOWARD**: Do you have any estimate on
16 the amount of gas lost through excavation
17 encroachment?
18 **MR. EDELSTEIN**: The amount of gas lost through
19 leakage throughout the country, from the well to
20 the burner tip, is about 1.4 percent. And that's
21 probably 300 billion cubic feet a year, out of
22 22,000 billion cubic feet transferred across the
23 country. So of that 1.4 percent, distribution
24 leakage is probably on the order of three-quarters
25 of a percent of gas transmitted. But that's

1 leakage from all sources, not just excavation.
2 That could be leaky joints, could be, you know,
3 pinhole leaks due to static electricity. But once
4 again, most of the damage to distribution systems
5 is caused by third-party damage, excavation damage.
6 **CHAIRMAN HOWARD**: Going back to the states
7 that have approved R&D funding, there are two
8 methods, as you mentioned. One of them was in
9 rates, in a rate case --
10 **MR. EDELSTEIN**: Correct.
11 **CHAIRMAN HOWARD**: -- and the other one is an
12 O&M pass-through?
13 **MR. EDELSTEIN**: [Nodding head.]
14 **CHAIRMAN HOWARD**: An without that in -- we
15 don't have that in South Carolina, so in South
16 Carolina it would have to be approved by a rate
17 case.
18 **MR. EDELSTEIN**: Yes.
19 **CHAIRMAN HOWARD**: How do you get around the
20 used-and-useful clause in proving R&D in a rate
21 case?
22 **MR. EDELSTEIN**: Well, I'm an engineer and not
23 a lawyer, but what we try to do is to show the
24 results of projects that we have worked on, and how
25 those have benefited the consumers. We have, you

1 know, anything from the first high-efficiency
2 furnace, the first 90-percent-plus furnace in this
3 country, in the world, was developed by our
4 predecessor, Gas Research Institute, in the early
5 '80s when there weren't even regulations for
6 furnace efficiency until the '90s, and that was 78
7 percent efficiency. So that set the standard in
8 the furnace market. And 45 percent of furnace
9 sales now are high-efficiency furnaces.
10 So we've used those kinds of examples to show
11 what we've done in the past and what benefits are
12 offered. And, you know, the NARUC statement of
13 accounts and the FERC statement of accounts do have
14 a place for -- again I'm not a lawyer, I'm an
15 engineer, but they do have a place for R&D
16 recovery, research-and-development recovery. And
17 so we feel there's a place for R&D. But mostly
18 through examples and actual results that have
19 reached the marketplace, and what the results have
20 achieved.
21 **CHAIRMAN HOWARD**: That's very interesting. I
22 personally appreciate the effort. I think it was a
23 great presentation, and thank you. At this time,
24 I'd like to ask if anybody in the audience has any
25 questions of Mr. Edelstein. ORS?

1 [No response]
2 Well, again, thank you very much for coming.
3 It was a great presentation. We really enjoyed it,
4 and we'll see what happens in South Carolina.
5 **MR. EDELSTEIN**: Okay. Thank you very much,
6 Mr. Chairman and Commissioners.
7 **CHAIRMAN HOWARD**: Thank you, again.
8 **MR. EDELSTEIN**: I appreciate the time today.
9 **CHAIRMAN HOWARD**: Thank you for your time. If
10 no questions, the briefing is adjourned. Thank you
11 for coming.
12 [WHEREUPON, at 3:45 p.m., the proceedings
13 in the above-entitled matter were
14 adjourned.]
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C E R T I F I C A T E

I, Jo Elizabeth M. Wheat, CVR-CM-GNSC, do hereby certify that the foregoing is, to the best of my skill and ability, a true and correct transcript of all the proceedings had in an allowable ex parte briefing held in the above-captioned matter before the Public Service Commission of South Carolina.

Given under my hand, this the 16th day of December, 2010.

Jo Elizabeth M. Wheat, CVR-CM-GNSC

ATTEST:

Jocelyn G. Boyd,

CHIEF CLERK/ADMINISTRATOR