National Transportation Safety Board
Washington, D.C. 20594

February 21, 2017

Robert Francis Land
Washington Gas
6801 Industrial Road,
Springfield, Virginia 22151

Robert Francis Land:

Reference: NTSB Accident No. DCA16FP003, Silver Spring, MD.
Your Interview conducted on January 31, 2017.

Enclosed is a copy of the transcript of your interview that was conducted as a part of the on-going investigation of the above referenced accident. Please review the transcript for accuracy and make any necessary editorial changes on the attached transcripts. Please put your initials next to each suggested change. After your review, please sign the attached endorsement and return it with the marked copy of the transcript to the following address on or before February 28, 2017:

Kalu Kelly Emeaba
National Transportation Safety Board (RPH-20)
490 L'Enfant Plaza East, S.W.
Washington, DC 20594.

Or if you desire e-mail your comments to: [redacted]

Please note that this transcript should be treated as confidential at this time. This transcript is for your use only, and is not for release. If you have any questions, please contact Investigator-in-Charge. Thank you for your assistance and cooperation.

Sincerely,

Electronic Signature

Ravindra M. Chhatre
Investigator-in-Charge
[redacted]

Enclosure

National Transportation Safety Board
Office of Railroad, Pipeline, and Hazardous Materials Investigations
490 L'Enfant Plaza East, S.W.
Washington, D.C. 20594

Reference: NTSB Accident No. DCA16FP003, Silver Spring, MD.
Your Interview conducted on January 31, 2017.

I have reviewed my interview transcript from the above referenced accident and:

---------- (A) I have no comments to make.

---------- (B) My comments are submitted herewith.

X
---------- (C) My comments are marked on the attached copy.

PG 44 LINE 10

PG 46 LINE 22

[redacted]

Robert Francis Land

Feb 23-2017

Date

UNITED STATES OF AMERICA

NATIONAL TRANSPORTATION SAFETY BOARD

Investigation of:	*	
	*	
THE EXPLOSION OF APARTMENT BUILDING 8701 OF FLOWER BRANCH APARTMENTS IN SILVER SPRING, MARYLAND ON AUGUST 10, 2016	*	Accident No.: DCA16FP003

Interview of: ROBERT LAND

NTSB Headquarters
Washington, D.C.

Tuesday,
January 31, 2017

APPEARANCES:

RAVI CHHATRE, Investigator in Charge
National Transportation Safety Board

ROGER EVANS, Senior Pipeline Investigator
National Transportation Safety Board

KALU KELLY EMEABA, Pipeline Investigator
National Transportation Safety Board

DOUG STAEBLER, Senior Vice President Operations
Washington Gas

STEVEN PRICE, Assistant Vice President for
System Operations
Washington Gas

SPENCER NICHOLS, Associate General Counsel
Washington Gas

LT. WILLIAM OLIN, Fire and Explosives Investigator
Montgomery County, Maryland

JOHN CLEMENTSON, Assistant Chief Engineer
Public Service Commission of Maryland

I N D E X

I N T E R V I E W

MR. CHHATRE: Good afternoon. Today is Tuesday, January 31, 2017. We are currently at the NTSB Headquarters located at 490 L'Enfant Plaza East, S.W., Washington, D.C. We are meeting regarding the investigation of explosion of Building 8701, Flower Branch Apartments, Silver Spring, Maryland, that occurred on August 10, 2016.

My name is Ravi Chhatre. I'm with the National Transportation Safety Board located in Washington, D.C., and I'm the investigator in charge of this accident. The NTSB Investigation Number for this accident is DCA16FP003.

I would like to start by notifying everyone present in this room, that we are recording this interview, and we may transcribe it at a later date. Transcripts will be provided directly to the interviewee for review and identifying any typographical errors. The transcripts may be posted in NTSB's public docket.

Also I would like to inform Mr. Bobby Land that you are permitted to have one other person present with you during the interview. This is a person of your choice: your supervisor, friend, family member or, if you choose, no one at all.

Please state for the record your full name, spelling of your name, organization you work for and your title, business contact information, mailing address, and who you choose to have present with you during your interview.

MR. LAND: Yep. So it's Robert Francis Land; R-o-b-e-r-t,

middle name is Francis, F-r-a-n-c-i-s, last name Land, L-a-n-d. I work for Washington Gas, and the address is 6801 Industrial Road, Springfield, Virginia 22151, and my title is manager, meter regulator services, and I choose Mr. Spencer Nichols.

MR. CHHATRE: Thank you for that. Now I would like to go around the room and have each person introduce themselves. Please state your name, spelling of your name, your title and the organization that you represent and your business contact information starting from my left.

MR. KELLY: Kalu Kelly Emeaba, K-a-l-u, K-e-l-l-y, last name E-m-e-a-b-a. I'm a NTSB investigator.

MR. NICHOLS: Spencer Nichols, Associate General Counsel, Washington Gas, [redacted].

MR. STAEBLER: Doug Staebler, Senior Vice President of Utility Operations at Washington Gas, email dstaebler@washgas.com, location Springfield Office; phone number [redacted].

MR. PRICE: Steven Price, Assistant VP, System Operations, Washington Gas, same address as Mr. Land gave, email of [redacted], and telephone number of [redacted].

LT. OLIN: William Olin, Montgomery County, fire and explosive investigator. Cell phone [redacted]; email william -- [redacted].

MR. CLEMENTSON: John Clementson, Assistant Chief Engineer, Public Service Commission of Maryland, [redacted].

MR. CHHATRE: Thank you.

MR. EMEABA: Roger Evans.

MR. CHHATRE: Roger?

MR. EVANS: Yeah, Roger Evans, senior investigator, NTSB.

MR. CHHATRE: Thank you.

INTERVIEW OF ROBERT FRANCIS LAND

BY MR. CHHATRE:

Q. Mr. Land, if you can just tell us some background, your education, formally, informal, any experience.

A. I have a high school diploma, no college education. I started -- I've been at the gas company for -- Washington Gas for 36 and about 1/2 years now. So I started in 1980, pumping gas for 6 months and then I moved into the service department which is what we call operations now. So I was an assistant serviceman for 7 years, and then I was -- got promoted to service technician, ran service technician work for 4 years and after that, I transferred back to Springfield from Northwest Station and ran service work for 2 more years. Then I was moved over to our rough-in construction area which is the work that I did the 7 years as an assistant. And in 1997, I was promoted to supervisor for the construction trucks, or I don't know if we've been saying rough-in, in here, and I've been supervising that for 19½ years, and I just got promoted again 3 weeks ago to manager.

Q. Congratulations.

A. Thank you very much.

Q. Let's start as -- what are your responsibilities as manager

of construction?
A. Right now it's what we call meter regulator services, which is contractor services.
Q. Okay.
A. Yeah, so I've moved from one department to the other.
Q. Okay. And prior to that, you were a supervisor for roughing in construction?
A. Yes, sir.
Q. Nineteen years?
A. Um-hum.
Q. Nineteen plus. What are your responsibilities there?
A. Supervising up to 16 employees at a time. At times I would have 22 and our specific jobs are meters and regulators, commercial, residential, changing regulators, installing meters, running house piping, monitor regulator racks for the large industrial type like that, mercury regulators, insulates for corrosion, all type of maintenance work, new business work, anything that comes from customers, customer complaints, customer concerns, and my area is the Virginia area.
Q. Okay. So the incident location is not in your service territory?
A. No, sir.
Q. So the supervisor, he assigns jobs or how does that work? Who --
A. I'm sorry?

Q. As a supervisor, do you assign the individual employees jobs that they're supposed to do today or --

A. Yes.

Q. -- somebody else does that?

A. Yeah, so when we come into work in the morning, all our work is -- well, in the old system, it was in the CAD is what we called it, and some of that work can come from telephone service or customer service directly from the customers or it can come from service techs in the field. It can come from the underground crews or operation crews that are calling in orders for us.

So every morning we come in, and we'll have -- we go into the system and see how much work we have, what type of work we have, and then we match that up with the number of crews that we have, and we get that assigned and send them into the field. And then we can have orders come in throughout the day also, emergency type orders, emergency repair orders.

Q. So maybe give me some idea of what type nature of the assignments that come in?

A. So --

Q. You give a lot of people different assignments. I'm trying to get a grasp, get my arms around it.

Q. So it could be meter changes. It could be regulator changes at customers' homes. It could be any type of maintenance work for straightening meter buildups, things of that nature. It can be where there was a service replaced and now we're going to be

moving the meter to the exterior of the building. It can be a large commercial establishment, restaurant, paving plant, drycleaners, anybody -- this office building here, that might be questioning their pressure on their regulator or something of that nature. A lot of people call in and say they don't have enough pressure. Maybe they got a new boiler. Maybe they got new generators installed, and typically they call back to the gas company to see about us coming out to check our pressures and things of that nature on the meter, to make sure that things are running properly for them.

Q. And how would a --

A. So it's a whole litany of things that we do like that.

Q. And how would a customer know that they're not getting enough pressure?

A. Normally their engineer will call up and say my boilers are failing or one of my boilers out of three is failing, things of that nature. And especially since 1999, Y2K, when the world was going to fall apart and everybody started getting generators, people have learned a lot about generators and the pressure requirements for them. And a lot of times people go into them blind, when they're putting generators in, whether it's a large building like this or even a residential home, and they undersize their piping or, you know, they require a particular water inch -- inches water column for that generator, and that's not what they're getting when they first -- generators require 10 inches

water column. The gas company supplies a maximum of 7 on our inches water column regulators, and then our next step is 2 pounds for them.

So, you know, when customers add generators in there and they go to fire these generators up, the generator people come out and if they don't have exactly what they want at that generator, then they always direct it back to the utility company, whereby we go out and check our pressure and then we direct the customer on what they probably need to do for their equipment to get it running properly.

So especially -- you know, and you get that on boiler changes also. New boilers -- the new boilers nowadays coming from, you know, 2000, 2005, 2010, are not the same that were put in back in the '40s, '50s and '60s. They're very, very, very mindful of their pressure, and they have a lot of different controls on them that likes to shut them off. So --

Q. So regulator replacement, who makes those requests to you? Customers or internally, within Washington Gas?

A. It comes from a litany of places. It can come from -- well, it depends on what type of regulator change you're talking about. So are we changing a regulator because the regulator had a leak or are we talking about a regulator that maybe is not supplying enough pressure to the customer. So a lot of times the customer will call in and say, you know, my furnace is not working properly, my water heater is shutting off, my flames seem low on

my range. And we'll send a technician out there, one of our service techs, and the service tech will normally change the spring-loaded regulator. If it's a mercury regulator, that would be passed onto our rough-in group.

You have customers that again add generators. Maybe it's a single family home, and they add, you know, any type of piece of equipment. Any time a piece of equipment is not operating up to standard for the customers, especially being new, then they will call the gas company through our telephone service line. Most of your companies that installs new furnaces, water heaters, generators, things of that nature, if they're not getting the pressure they like, they're not going to honor the warranty, and it's --

Q. My focus --

A. -- really, really important.

Q. Sure. My focus, and I guess maybe hopefully all people are going to focus on multifamily dwellings.

A. Okay.

Q. No commercial customers. So we can forget about that aspect.

A. Okay. Beautiful.

Q. So as far as the regulator change goes, do the multifamily dwelling complaint --

A. Yeah, I've been here 36½ years, and I've never had a customer call me or an order come through telephone service about a regulator change or pressure problem that I know of at a

multifamily dwelling.
Q. That request would come from utility then?
A. That request normally would not -- when we're talking about a customer, so we're not talking about unit 1, 2, 3 or 4. When we talk about multifamily like that, there's a couple of different customers that there's for me. There's the customers that live in the units themselves, the apartments, and then you have the customer which is the ownership group or the maintenance facility at that apartment complex. So maybe their water heater's not running right or maybe they have a pressure problem, they think, at a range or they've changed a range and it's not working properly. That management firm would normally call the gas company and say we think we have a pressure problem.

Usually one of my first questions to them is what else do you have on gas? And they'll say we have 13 other apartments, and my response will be, well, are the other 13 working properly? And normally they'll say, yes, they are, which boils down to one piece of equipment. So, yeah, normally I don't -- we don't get, that I know of in my years here, calls from a customer in unit A or unit 1 or unit 5 saying I have a pressure problem. Normally it comes from the management firm there.
Q. Okay. And do you also handle the gas odor complaints under your supervision --
A. No, sir.
Q. -- prior to you becoming the manager?

A. No, sir.
Q. Okay. Those complaints would go to --
A. Telephone service.
Q. Telephone service?
A. Um-hum. Customer service.
Q. And then do you handle those? Will you investigate those requests or somebody else does?
A. Normally it's a service tech.
Q. Service tech will go.
A. That's correct. That's -- in years past, we have called them one-man responders or emergency responders, as they're the frontline guys. We have guidelines that we have to be, we have to be on the jobsite within a certain time.
Q. So those people will be under you or they will be under some different --
A. They are under a different supervisor.
Q. Supervisor.
A. Um-hum.
Q. Now the service technician goes out in the field and notices problem with a regulator. Then will that technician be calling you to respond or --
A. He would be --
Q. -- would the technician --
A. He would be calling his dispatcher.
Q. Okay.

A. Right, and then the dispatcher would put the order in the system, and it would be assigned to the appropriate construction crew.

Q. Okay.

A. So in a multifamily unit, when -- we have what we call on-call. So a supervisor for the gas company, a field op supervisor works a week of on-call and we have a schedule for the whole year. So you will work from a Tuesday morning at 7 a.m. till the following Tuesday morning at 7 a.m., 24 hours a day, sleep at night, but if they call you, you have to be ready, whether it's a phone call or you go out on-site.

So that technician would call dispatch to let them know about that regulator, and a supervisor would be notified specifically if there was any indication that we were going to shut that apartment complex down because of a regulator.

Q. And the same applies to a single family dwellings? Same procedure applies to a single family dwelling?

A. Not a single family home. Not a single family home. We're talking one gas meter for a single family home. If the regulator fails, the technician cannot change that regulator out because he's not qualified for mercury. If it's a spring-loaded regulator, he will change that regulator so we can keep supplying gas to the customer. If it's a mercury regulator, he will isolate that and then refer that order.

Q. Okay. And then will that come to you?

A. Multifamily units or high rise buildings or large commercial, they are required to call a supervisor before they turn something like that off. I'm not saying that we're going to tell them not to turn that off. I have no problem turning off 100 apartments.
Q. So that can come to you if it's in your jurisdiction?
A. If it's in my jurisdiction or if I'm the on-call person for that weekend, yes.
Q. It will come to you?
A. Yes.
Q. So walk me through. Then what happens? What happens? How do you handle if complaint -- if a call comes to you saying multifamily dwelling --
A. From a service technician out in the field?
Q. -- we need to replace a regulator. What happens?
A. He says, hey, I have a regulator that's leaking or malfunctioning, right? So if it's a single regulator, my first question to him is are we able to bypass that regulator? So if we have a crew close by, and he can be there to monitor that situation, as long as the gas is venting -- if the gas is vented -- if the regulator is leaking inside the building and we have to turn the building off, then we make the call and we turn the building off. If it's a regulator that's weeping, and it's weeping to the exterior of the building, and it's a very slight reading, then what we do is we have that service technician standby, we get the rough-in construction crew there, and then

we'll bypass that building to change that regulator so we don't interrupt service to that customer.
Q. And then what happens? Do they fill some form in, your crew, who -- rough-in crew who goes in and changes the regulator?
A. Changes the regulator, um-hum.
Q. Then what do they do after they do that? How -- what are the paper trail that they generate?
A. Yeah, that's all completed in the computer in their trucks.
Q. Okay. So in that --
A. So in the old -- in -- well, prior to January 3rd, we called that CAD, C-A-D, computer-aided dispatching. So, you know, you see the Toughbooks that the military use, that's what the gas company has -- had. Now we have pads, since the new system, January 3rd. So everything is completed in the system. When I say the system, I mean their computer in their vehicle. It's completed there and then that is uploaded into the system.
Q. And then what happens after that?
A. So there's no --
Q. After, what happens then? What happens -- your technician goes in and he or she replaces a regulator.
A. Yes. So the service technician refers the order to the rough-in crew or the construction crew, right. The rough-in crew goes in, either turns the building off to change a regulator or if bypass capabilities are there, we bypass it, we change the regulator. Then we do our pressure checks on the regulator,

things of that nature. We do our standard leak performance that we're supposed to do inside and outside, and then we're done. We complete the order in the CAD.

Q. And what happens to that information that goes in the CAD or pad or whatever you --

A. That's updated into the gas company's system, our customer order system.

Q. Who looks at that? Anybody? Or just a record?

A. It's a record.

Q. So nobody sees as to what happened, what was the cause of the regulator failure?

A. Well, when you doing, when you're doing the number that we probably are -- not that I know of.

Q. Do you know where we can get that information as to who actually either looks at it, doesn't look at it, or it just goes into a vault, some kind of a --

A. It's what we call service history is what we call it. Our service history in the other system went back 5 years. So any time you wanted to pull up anything about an address, you can go to that particular address in our customer order system, and you can pull up service history for 5 years. Changing a regulator for -- for us at the gas company is an everyday occurrence. It's like eating a sandwich. It's like people brushing their teeth every day. It's a very, very ordinary thing that our technicians and our rough-in construction technicians do. It's not out of the

ordinary whatsoever.
Q. Is there a person responsible --
A. We have over a million customers.
Q. Now is there a person responsible who actually makes sure that your system is -- people are filling the forms -- are filling in the information properly or is there any missing information or --
A. Well, when they -- you have to understand that when they complete these orders in the CAD unit, prior to January 3rd, and in our new system now, there's what they call required fields. So as these fields are filled in for the meter, the meter index, the regulator, the type of regulator, the pressure checks on the regulator, the static or lockup, the low load, high load, vent screen, is it mercury, is it not mercury -- there's a whole litany of checks that they have to do on their pads/their Toughbooks prior to January 3rd, that are required fields and if they don't complete them fields, they cannot complete the order in that system to send it forward. It prevents them from doing that. So they have to complete the required fields before they complete that order in the -- in their CAD unit and it's sent on to be uploaded into our system.
Q. Are there any optional, I guess, fields in there like comments? Comment is not a required field, is it?
A. No, remarks is not a required field. I don't know about the --

UNIDENTIFIED SPEAKER: Still? Still in the new system?

MR. LAND: Yeah.

UNIDENTIFIED SPEAKER: Still there's an area where you can --

MR. LAND: Yeah, you know, I'm not 100-percent certain on the remarks. I'm not 100-percent certain on the remarks.

BY MR. CHHATRE:

Q. So who looks at these remarks? I mean, if there is a required field or not. John Doe or Jane Doe fills those things in and you are saying it goes in your records, whatever --

A. It goes up to the records.

Q. So who -- is there any person responsible for that particular aspect of your work or --

A. That I do not know.

Q. So do you know --

MR. PRICE: Maybe ask it like this, Ravi. If this helps -- Steve Price. As a supervisor, what would cause you to look at a service history that one of your guys worked on --

MR. LAND: Right, because --

MR. PRICE: -- and to review the remarks?

MR. LAND: -- you figure if there's 3- or 400 orders being done a day, not regulators but all types of orders like that, no supervisor is going to sit down and review 100 to 150 orders from their technicians out in the field from the previous day. We'd never get nothing done. It just wouldn't happen.

What would cause me to review any particular order, number

one would be -- I do know the next day what addresses, you know, my crews have gone to like on a Saturday or a Sunday. So when I come in Monday, I will look at that, and usually what -- what draws me to certain orders are a couple of things. (A) we get an email from our dispatcher about emergency service replacements. So if I see that my technician was there at that same address -- well, we don't dig dirt; that's another department -- I'll review that order. Or for as long as I've been working the Virginia area, I can look at an address and just about tell you if that's a commercial area and a commercial address, and when I see something like that, that always peaks my interest to see what we've done there.

Single family homes, it's different. The thing about a single family home is a construction crew or a service technician can replace a meter bar or any regulator at a single family home unless it's a mercury regulator. So both of them can do exactly the same thing at a single family home except a mercury regulator. Therein lies the difference.

The reason why I look at commercials like that is because they're a little different. They're larger meters. It could be multimeters with dual regulators. It could be a B34, a larger regulator, different things of that nature like that, and I kind of want to know what they're doing at them. Therein, that's the difference for me between a commercial and a residential.

BY MR. CHHATRE:

Q. So what will make you -- forget about commercial. We are looking at the multifamily dwelling units.
A. Um-hum.
Q. What will a supervisor require to look at this information that you are collecting? I mean, I guess, correct me if I'm wrong, the whole purpose of information is so somebody can look at it. So who in the company will be, whether they look at every one, random, who will do that? I mean, if you're not -- if you are not sure as a supervisor, why collect information if nobody's going to look at it? And that's what -- if you don't have anybody looking at it, how will you know that mercury regulators are failing more frequently last 5 years than last 55 years, or this new manufacturer, their regulators -- spring-loaded regulators are failing more often than somebody else's? I mean, I'm just trying to understand the checks and balances --
A. Checks and balances.
Q. -- and I take it the answer is you do not know. Is that correct?
A. You're correct.
Q. Okay.
MR. STAEBLER: Yeah, but, Ravi, if -- Doug Staebler. I mean I would put forth that --
MR. CHHATRE: Identify.
MR. STAEBLER: Doug Staebler, Washington Gas. Sorry. I would put forth that that type of information wouldn't be

necessarily picked up by a supervisor on a daily basis versus being able to go into the database and query big chunks of that data to look at trends and stuff, right. So --

MR. CHHATRE: I was asking anybody in the company.

MR. STAEBLER: Right.

MR. CHHATRE: I said anybody in the company looking at it?

MR. STAEBLER: Yeah.

MR. CHHATRE: And -- because what, what triggers me for this question, just to clarify because you are a party, I did not get more detailed information on mercury regulator replacement. I didn't get -- because certain regulators, all of them are old or what is the cause of the failure, because they are multifamily dwellings or they're single family dwellings. So I see -- because I'm not getting enough information on the regulators, the cause for failures, and I'm also not sure about -- and going back to our earlier interviews, when person said filling some erroneous information.

Yeah, and if a supervisor just requires to fill the computer-aided information and nobody looks at it, I don't see a check as to whether the person is filling everything right and is proper or not. That's one of the reasons. I mean, I didn't forget that. I'm just following that as to what is the balance. As a supervisor, how will anybody know that my technician went in there and he came out in 5 minutes? With his computer, he can timestamp that, and how can he possibly do all this stuff that he said he

did or not, he did not do that?

So I'm just looking in that terms as to the quality control check of the system. And I still haven't found a good answer to that yet. That's where I was coming from. This is the first supervisor that I'm talking to.

MR. STAEBLER: Right. So you raised a couple of points on the earlier technician where you saw some gaps.

MR. CHHATRE: Discrepancies. Major discrepancies I saw.

MR. STAEBLER: Right. And one of the things that we had asked them, and I will ask again, is when can we circle back with those technicians and talk them -- talk through those records and see what their explanations are? So that's part of the reason you don't have a response to some of those issues that arose.

The other is that one of the reasons for recordkeeping is to know exactly what you did do at a particular place at a particular time because from time to time questions come up about that. What did the company do? And that's our record as to what we did.

The third piece which I think you're kind of getting at is how do we know our personnel are doing what they're supposed to do? And that is a lot broader review than the comment sections on the work orders. I have no double, Mr. Land, and you can ask, does he know his people? How does he know they're doing what they're supposed to do?

MR. CHHATRE: By no means he's lying that the supervisor has no idea of the crew is doing. I'm not saying that at all. I'm

just saying -- where I was coming from, if you are asking people to fill comment section --

MR. STAEBLER: Right.

MR. CHHATRE: -- and I don't know what the comments would include, but the whole purpose of comment is somebody above that person reads them. And if nobody reads those comments, what good is asking people to fill those comments? At a minimum, I mean, somebody randomly at minimum will look at those. I mean, that's all --

MR. STAEBLER: Because we have to, we have to record what we did. We have to do that. That's part of our requirements.

MR. CHHATRE: Okay.

MR. STAEBLER: So what you're really getting at is, is it being done well? Is it being done right?

MR. CHHATRE: No, I mean, the reason I'm asking is the recordkeeping since PG&E, we generally ask all utilities. We look at the recordkeeping. That's a major issue for our Chairman. I mean, he has seen all that.

MR. STAEBLER: Absolutely.

MR. CHHATRE: So recordkeeping is a significant issue for us because, you know, everything is just as good as your records are. So that's what we are trying to find out, if the records are accurately kept, they are used properly, and that's where I'm coming from. I'm not saying --

MR. STAEBLER: No, I do understand.

UNIDENTIFIED SPEAKER: And that level of scrutiny happens on our construction records, on our leak repair records, our distribution --

MR. CHHATRE: And by no means I'm implying that is a factor in this at all. Our investigation is just not -- I mean, once we investigate, we want to make sure that we are looking at all the aspects, that we have learned from the past.

MR. STAEBLER: Understood.

MR. CHHATRE: So by no means am I implying that the recordkeeping is a cause to this accident at all. I just -- this is one of those things we do.

BY MR. CHHATRE:

Q. Okay. So as far as the mercury regulator goes, typically what kind of failures you know that happen on your mercury regulators, if you have knowledge of that? Not -- if it's beyond your knowledge, then I won't ask that question. Don't know is good enough, but --

A. No, I can -- so mercury regulators were installed way prior to me starting in 1980, right. So in 1980, once I came into the company and I moved onto service system, I was stationed at Chillum, and that would have been February of '81. And at that point in time is when I started learning about mercury regulators as an assistant on the rough-in crew, and was changing mercury regulators back then. And mercury regulators get changed, that I see, for either weeping, the weeping vent on them or inadequate

pressure for the customer. Weeping or inadequate pressure for the customer.

Q. And how would they know that? Just from the observation or the -- hearing the gas? How would a technician know it's weeping? Pressure I can understand.

A. Um-hum. Okay. Normally when a mercury regulator weeps, it's like any other regulator, coming out of the vent pipe, and there's some mercury regulators that are outside. So normally a call or odor -- an odor call will come in from the customer, and then that will go to our service tech who will go out and investigate it.

When he finds the mercury regulator, if it's weeping, at that point in time he will turn that gas off at that point in time, or when a technician -- the other thing for the pressure problem, it can come from the customer again adding new equipment or it can come from a technician that goes out to change a meter for age, which we're required to do. It can come from a technician that is going out to supply gas to a customer, which the 121 code we call that, to supply gas to a customer, they're required to check the regulator at that point in time, and if he's not getting the performance from the regulator that he should be, then he'll leave it off and refer an order for a construction crew to replace that mercury regulator. If the mercury regulator is working properly, locking up, static, which means it's not weeping, and it's giving the proper pressure, operating properly on the low load, high load, then he'll leave the regulator there,

being a service technician, and will refer a future order for the construction crews to go out and change that --

Q. (Indiscernible)

A. -- exactly. Set up an appointment with the customer and change that mercury regulator out, um-hum.

Q. And you said it is a requirement for the meters to be replaced after a certain --

A. Yeah, that's what we call -- we used to call it an AIS program, age in service. Now it's called ISP. So there's certain brand names of meters that -- well, all our meters, you know, the larger meters are different. The AL250 meter for the residential homes are changed on a, you know, 20, 30 year basis, and I believe in the State of Virginia, the records are sent to the Public Service Commission and, you know, they're changed on a percentage-type basis. Not every meter that is at a certain age is changed for age or what we call ISP at this point in time.

Q. What does the ISP stands for?

A. I believe it means internal sampling program.

Q. Okay.

A. Um-hum. It's for the new -- it used to be called AIS which is age in service.

Q. Okay.

A. So, yeah, we're required to change so many meters per year and they're brought back in and what we call in-tested. And depending on the results, if the commissions are happy with it,

then we're good. If they see a little something in the report that they're not content with, then we go out and we change more.
Q. Okay.
A. Yeah, residential and commercial meters.
Q. Residential, it can be multifamily dwellings, like apartment complex --
A. It can be, yes.
Q. -- or it can be anything?
A. Yes. Yep.
Q. So that is -- I mean, even if -- so when you change those meters for that reason, do you test those to make sure they are working properly at that time?
A. The meters?
Q. Yeah.
A. Yes, sir.
Q. Okay.
A. They're what we call -- all of our meters are out-tested before they're installed in a customer's home and in-tested. In-tested means once they're brought back in --
Q. They're brought back.
A. -- they're in-tested and all that information is recorded to make sure the meter --
Q. That goes in the computer.
A. That's correct, to make sure the meter is registering properly.

Q. Out of curiosity, if you know the answer -- tell me if not; don't know is fine -- but typically what is the cost of a meter typically?
A. You know, 10 years ago I think they were less than $25, but to be honest with you, right now, I wouldn't quote me on that.
Q. Okay.
A. Yeah. I'd say they're less than $50 depending on the meter.
Q. Okay. And what is the cost of a regulator?
A. And again, it depends on the type of regulator you're buying. So --
Q. I mean, currently what a spring-loaded regulator you are using?
A. Your residential regulators?
Q. Yeah, on residential or multifamily dwellings?
A. So if we're talking like the B31 regulators or B42Rs, B44 -- B42R at 2 pounds, different things like that, I'm not exactly 100 percent certain of the price, but I'd say it would be less than $100.
MR. CHHATRE: Do you guys know the current costs?
UNIDENTIFIED SPEAKER: Yeah, anywhere from like 15 --
(Simultaneous conversation.)
UNIDENTIFIED SPEAKER: Well, your larger commercial regulators are more expensive.
MR. CHHATRE: No, we're only focusing on the residential --
UNIDENTIFIED SPEAKER: The house regulators and stuff are 15

to $30 or something like that.

MR. CHHATRE: 15 to $30 for a regulator?

UNIDENTIFIED SPEAKER: Yeah.

MR. CHHATRE: So meters are more expensive than regulators?

UNIDENTIFIED SPEAKER: Yeah, they (indiscernible).

MR. STAEBLER: Yeah, and they come with the ERT units on them, too. The meters come with, you know --

UNIDENTIFIED SPEAKER: Because the meter reader head's on it too are like $50.

MR. STAEBLER: That's the radio frequency and all that stuff like that for remote reading.

MR. CHHATRE: And that's all I have. Thank you. I'm passing on. Thank you so much for the information you gave. Kelly?

MR. EMEABA: I don't really have much, but just a few.

BY MR. EMEABA:

Q. Now you mentioned your odor record or reporting system that your technicians use. This is Kalu Kelly Emeaba. You mentioned the CAD. What does that mean? C-A-D, what does it mean?

UNIDENTIFIED SPEAKER: CAD.

BY MR. EMEABA:

Q. Yeah, your CAD.

A. C-A-D, computer-aided dispatching.

Q. Okay. I just wanted to be sure.

A. Yeah.

Q. Dispatching?

A. Computer-aided dispatching.
Q. Okay.
A. Yep.
Q. Just to make sure.
A. I think it's the fire department or the police department uses that, I believe. Don't they have the Toughbooks?
Q. And you just mentioned that it's an old system. So you don't use it any more, correct?
A. Yeah, we just -- we just started into our new Project Vision, January 3rd. We just launched.
UNIDENTIFIED SPEAKER: We just, we just left the CAD system.
MR. CHHATRE: But at the time of the accident, you still had it?
MR. LAND: The horse is out of the barn.
MR. CHHATRE: And that's the important part.
UNIDENTIFIED SPEAKER: We still had CAD, yeah.
MR. CHHATRE: You still had CAD at the time of the accident?
UNIDENTIFIED SPEAKER: Yes.
BY MR. EMEABA:
Q. So just in comparison, the new system you just have in place, what does it require compared to the CAD in terms of documentation?
A. Yep. So the new system, and I don't know every last single component because that is another department that our Project Vision team built that system, but what I know of it, and what I

see, it's more complicated than the older system that we had and there's more information required for the technician in the field to fill out on his Toughpad, and the records are evidently going to give us long-term and more intricate recordkeeping, I would say. You could say it that way. So we've gone from the console TV to the widescreen basically is what has happened.

MR. CHHATRE: I like that. I can relate to that very well.

MR. LAND: It's a nice system. It's driving us a little crazy right now but we're going to get past that.

BY MR. EMEABA:

Q. What is that called, the new system?

UNIDENTIFIED SPEAKER: Global Work Management under SAP.

MR. LAND: Yep.

BY MR. EMEABA:

Q. Global Work Management. Okay.

A. Yeah, SAP.

UNIDENTIFIED SPEAKER: And the dispatch part is called Click. It's a program, sort of off-the-shelf program.

MR. EMEABA: Okay.

BY MR. EMEABA:

Q. Okay. And from the beginning, you mentioned talking about your position, your title, meter regulator services or contractor services. Which was it?

A. They call it manager of meter and regulator services.

Q. Okay. So it's meter and regulator services.

A. Overseeing the contractors.
Q. Oh, you oversee the contractors?
A. The contractors, the meter contractors, yes, sir.
Q. Okay. Okay. I think that's why I got it a little bit confused. I wanted to see if you're contractor services --
A. Yeah, the department I was in prior was operations, field ops.
Q. Okay. So your current work is managing meter and regulator services and you do oversee your contractors?
A. Our contractors that do strictly meter work, not -- no underground contractors. Um-hum.
Q. Okay. So with you supervising the contractors, what kind of relationship do you have with them in terms of verifying what they are doing for you, the company?
A. So I'm 10 days into this job, this is day number 10 for me, but --
UNIDENTIFIED SPEAKER: Do you know who the contractors are yet? He doesn't --
MR. LAND: I do know them all. I know probably -- well, I know all of the supervisors for the different companies, and I probably know 80 percent of their technicians for many, many, many years. So if I was --
UNIDENTIFIED SPEAKER: And why is that?
MR. LAND: Yeah, I know, why is that? Because I've been at the gas company 36½ years. So -- but for, as far as like work

tendencies and things of that nature, I could tell you about the work tendencies of the supervisors of them companies but not of the particular technician that they oversee in the field. I know that our contractors are held to the same standards that Washington Gas technicians are. We follow the same operations manual. They are required to have the same operator qualifications or OQs that we're required to have and they follow all our leak procedures and everything like that. We're one and the same.

BY MR. EMEABA:

Q. Okay. Thank you. Being 10 days on this, so I'm not going to ask you much about your contractors --

A. Tomorrow makes 11.

Q. -- but with your history in the company, how long were you engaged in actual yourself working on meters and regulators in the past?

A. Physically?

Q. Physically, yes.

A. Sixteen and a half years.

Q. As a technician or supervisor or what?

A. As a technician physically doing the work.

Q. Okay.

A. Yeah, it was 19½ supervising.

Q. Okay. All right. Thank you. So being as a technician and also a supervisor in that area for 16 years, can you -- did you

work in multi-dwelling units?
A. I did, yeah. I worked in DC, Maryland and Virginia in my time coming up, you know, in the field.
Q. Um-hum. In Maryland. Okay. In Maryland, were you able to -- by chance, did you work at the Piney Branch Apartments?
A. No, sir, not to my knowledge.
Q. Okay. Any of them you can mention that you worked at, any particular one you remember multi-dwelling and multimeter?
A. I'm trying to think of some apartment complexes for you in Maryland, D.C. and Virginia. Does it matter? Maryland, D.C. or Virginia.
Q. Maybe Maryland, if you can.
A. Maryland would be better.
Q. If not, we're going to investigate.
A. When I was a service tech and first made it, my first 4 years as a service tech, I was stationed at Rockville, and my particular area was Calvert Street and Northwest D.C., American University area, across the bridge there from the zoo, Adams Morgan, and then I would work in Bethesda and Chevy Chase. And a lot of them buildings in Bethesda and Chevy Chase have them row apartment houses, you know, this --
UNIDENTIFIED SPEAKER: I (indiscernible).
MR. LAND: Yeah, well, they've got the row apartment houses where you go in the front door, you open the front door and boom, boom, apartment, apartment, apartment and then usually next to

these apartments, you'd open these cabinets up and be meter, meter, meter, meter, and there would be regulators in there. So that was about my extent of -- most of my -- I'm trying to think back that far now for you.

BY MR. EMEABA:

Q. It's okay if you can't remember.

A. Yeah, yeah, yeah. So a lot of times when I was a helper, we'd do -- and most of this is -- has to do with Northwest Washington, D.C., you know, multifamily meter rooms that we have in there with, you know, with 50, 75, 100 meters, things of that nature.

Q. Okay. Which is fine with me. I just wanted to learn a little bit more from you because I mean I'm not an expert in this area. That's why you are here helping us out in this investigation.

A. We are.

Q. If you can lead me through the process in your work when you conduct a turn-on and turn-off process of meter, maybe customer due to bill paying or not paying or you have to go to turn off the gas line and later, when they finish their payment or the next installment, you have to turn them on. How does that work? What do you have to do when you go to turn on the customer?

A. Right.

Q. And what do you do when you go to turn off the customer? If you can lead me through that.

A. Yep. So our requirements when, like multifamily that we're talking about --

Q. Yes.

A. -- first we make sure the customer is home. Say we're going there to turn the gas on.

Q. Yes, sir.

A. It was turned off for a previous tenant. So we make sure the customer is home. We go into the meter room. We locate the meter.

Q. Yes, sir.

A. And the first thing we are required to do is our leak checks on the meter rack, service entry points, and to check the vent line outside.

Q. Okay.

A. So those are the first three things that we should do prior to turning the gas on to any customer even though they are home at that time. So once we know that the area is safe, and if, you know, if we run into a leak or anything of that nature then, of course, we're calling our dispatcher. We're trying -- you know, if the technician, if it's on a meter bar or something of that nature, if it's something that the technician, the service technician can repair at that time, then they will do that and then proceed to turn the gas on for the customer. If it's something that requires maybe an underground crew, operations crew or rough-in crew, he will make a call to our dispatcher at that

time, and standby at that jobsite, and he still hasn't turned the gas on for the customer that he's there to turn it on for.

So once we turn the gas on for the customer, we're required to go into the unit, isolate the piece of equipment --

Q. Yes.

A. -- via, you know, a stopcock or gas valve some people might call them, and we go down to the meter. We remove the disk and the old washer on the outlet side. We put two new washers in. We have to release a slight amount of gas, just to make sure that the dial is turn on the meter. We like to catch the dial in the upswing. So we're doing now what we call our house line test. That means that everything inside has been isolated.

Q. Yes.

A. Once we tighten down these swivels, we've got the dial in the upswing, we watch that for 5 minutes.

Q. Yes, sir.

A. And we make sure that that dial doesn't move. If the dial proceeds to move, then we know that there's a leak somewhere.

Q. Yes, sir.

A. And for us, all we can do in a complex -- multifamily complex is check the visible pipe with our ranger or rover to see if we can locate the leak there, and that would be done in the meter room or that would be normally -- most apartment complexes, the customer has a range. Some of them have a range and a furnace out on the balcony. So any exposed piping we can check with our

ranger or rover or our leak detecting equipment.
Q. Yes.
A. And if we don't detect anything there, we still have movement on the dial, that tells us we have a leak somewhere in the line that is enclosed, and at that point in time, we leave the gas off --
Q. Okay.
A. -- and put a disk in it. We --
Q. For that particular meter or customer?
A. For that particular customer themselves that we was there to turn the gas on for.
Q. Yes.
A. And then we give them what we call a danger tag.
Q. Yes.
A. The regulator is only checked on a multifamily unit --
Q. Yes.
A. -- if it's the first meter. So in other words, if we have units 1 through 10 --
Q. Yes.
A. -- it's number 1 that we're doing the job at, that's when the meter -- that's when the regulator is checked for the pressure checks and things of that nature. The vent is always checked. Or the units might be A through K, A would be the first one.
Q. Okay.
A. So if we're doing -- if we are doing a turn on, if we are

doing any meter work at that A or number 1, what we call the very first meter --

Q. Yes.

A. -- that's when we're required to put a gauge on there and check that regulator. Albeit on a multifamily rack, if, with 9 or 10 meters on there or 20 or 30 meters on there, you're not going to be able to check static pressure unless everybody in there has electronic ignition and nobody's home cooking or using their water heater or their furnace. But you could still get a pressure check on the regulator to see what pressure it is supplying at that time.

Q. Yes.

A. And then you can check -- you're always checking your vent line outside. That's one of your first three checks that any technician on-site, whether it's a service tech or a rough-in technician is required to do.

Q. Okay. Thank you so much. I really appreciate your explanation and elaboration. That really helped me.

And the other one you mentioned is, you know, while you're doing your turn on, the fact that you have to check the vent line and so on.

A. Right.

Q. How do you do that? Can you just lead me through what is --

A. We check outside at the -- where the vent line comes up out.

Q. Yes, sir.

A. So, so when we're required to check a regulator for pressures like that, whether it's a single family home or multifamily unit, we're required to take the vent apart inside and make sure that the vent line is clear to the outside. On a multifamily unit building like that, if say we're doing -- say we're not required to check the regulator because we're dealing with meter number 3 or meter number 4.

Q. Yes.

A. Our book says number 1. We're still required to check the screen L on that vent line --

Q. Yes.

A. -- to make sure there's no mud daubers or anything like that up in there, mud daubers being the spider that builds its --

Q. Yes.

A. We all know what mud daubers are. So we're required to do that, and we're also required to make sure that there is screen on that screen L. So if we have to replace the screen L to make sure that we have a fresh screen and screen L on that rack. If the screen L is there, we should screw that screen L off to make sure that the mud daubers are not in there, so at least we know that that portion of the vent line there is clear --

Q. Yes.

A. -- for breathing purposes and venting.

Q. Okay. Okay. So if the mud dauber is maybe for that inside, how do you verify that?

A. Yeah. At that point in time, if the technician takes that screen L off and he sees that there's some -- possibly the mud dauber has -- the mud dauber has gone further deep down into the pipe, then he's required to refer an order so we can take that vent line apart and then we will blow that vent line out to make sure that that vent line is clear. That's what -- the service technician in the field would consider that a stopped up vent, albeit it's visual, because if it's a mercury regulator, a service technician is required to -- there's only certain personnel at the gas company that are operator qualified to change out mercury regulators.

So I guess you're privy to the procedure that we use and everything, the bags -- okay. So you're -- and the Jerome meters that we check for mercury vapor and everything of that nature, like that.

A service technician can check a vent line on a mercury regulator but he has to have -- he's required to have the -- it's called a pump test kit. So that's the bucket, the bags, the nitrile gloves.

Q. Yes.

A. And to have underneath that vent line to prevent any type of mercury spill, if there is mercury in that line. Breathing vents are important --

Q. Yes, sir.

A. -- I can tell you that.

Q. Yes.
A. That's a bit tadoo.
Q. And just to follow up with that, when you turn on -- turn on would involve a first installed meter --
A. Um-hum.
Q. -- which also leads you to check the regulator --
A. Yes.
Q. -- checking the regulator, what kind of work do you actually have to -- is it adjusting the regulator or what? And does that work also involve you doing work with the vent line?
A. Yeah, they don't -- well, yes, I just --
Q. For a multi.
A. Like I just said, when they check that regulator --
Q. Yes, sir.
A. -- any time they're checking a regulator for pressure, we're required to make sure that that vent line is clear.
Q. And how do you --
A. So if they're putting -- if they're putting a -- if they're putting a gauge on because they're turning the gas on for meter number 1 or meter number A, the first meter off the rack --
Q. Yes, meter A.
A. -- so what they're going to check on that regulator, they're not going to be able to check low load or high load because you're going to have 8, 9, 10, 15, 20 other meters on there, and there could possibly be a load through it.

Q. Yes, sir.
A. We're basically just checking the setting of the regulator, what type of pressure is it supplying now? We can't check static or lockup because we still have flow of gas into the building. They're required to make sure that the vent line is clear and there's a pump test that they do on that vent line that hooks up to a manometer, the same manometer that we use to check the pressure on the regulator.
Q. Um-hum.
A. So this pump test ~~kid~~ KIT (RFL) is -- it looks like a rubber stopper, and it's got a T brass fitting in it.
Q. Yes, sir.
A. And that's what hooks up to our manometer.
Q. Yes, sir.
A. And then we have another hose that hooks up to that where we actually pump to make sure that the vent is clear and if the vent is not clear or partially stopped up, then our manometer is going to go up to a certain reading, and if it gets up to a certain reading, then we know we have a partially stopped up vent. Then an order is referred to make sure that the vent is cleared.
Q. Okay.
A. It's called a pump test.
Q. Pump test.
A. Yes.
Q. Vent pump -- I mean vent line pump test.

A. The vent line pump test, yes, sir.
Q. Eventually --
A. Well, we do that because we don't want people putting their mouths or any other type of thing on piping. We don't want them blowing a lot of pressure through the pipe, you know. We want the service technician to be able to do it and we don't want them cleaning the pipe off with a rag and blowing through with their lungs through the pipe. That's not the way we want it done.
Q. So in this process, you actually have to literally disconnect the vent line from the regulator --
A. Yes, sir.
Q. -- to do that, and then after, you have to connect it back?
A. Yes, sir.
Q. Okay. Thank you so much. I appreciate that.
MR. EMEABA: Thank you. That is it for now.
MR. CHHATRE: Thank you. Roger.
MR. EVANS: Yes, just a couple of questions.
BY MR. EVANS:
Q. Based on what I was hearing about the CAD system, at the time of the accident, there was nothing in place to basically go back and look at everything that had been done on that system from a data standpoint. Is that correct?
MR. PRICE: Roger, this is Steve. I'm not sure I understand the question but we have service history at 8701 and at all our customers' services. So, yes, we had access and have produced the

service history for the apartment complex.

MR. EVANS: I was just curious. Are you loading that back into your CAD system?

MR. PRICE: Yes. We -- we have not lost the service history.

UNIDENTIFIED SPEAKER: Right. It's been migrated.

MR. PRICE: Okay. So you are migrating information.

UNIDENTIFIED SPEAKER: Yes, sir.

MR. PRICE: Okay.

UNIDENTIFIED SPEAKER: Yeah, we're loading 2 years of data into the system and then the legacy data is being stored in a separate server.

MR. PRICE: We're not losing the service history is what I mean to say. We haven't lost it.

BY MR. EVANS:

Q. And going back, Mr. Land, as far as your -- you probably have more years of experience than anyone we've talked to in a while about how many years you have actually on the tools. I'm just curious as to can you kind of give us a summary of your experience with mercury type regulators, the types of issues you've seen through the years?

A. The issues that I've seen with mercury regulators over the years has either been (A) venting, (B) we call them ~~bone~~ BLOWN (RFL) mercury regulators which in the gas industry might not be the best choice of words, but that's what we call it. In other words, so a venting regulator would be -- it's probably been explained, is one

that is relieving due to either dirt on the seat or possible higher pressure, and that's why it relieves.

The blowing mercury regulator or blown, b-l-o-w-n, is normally the ones that we get where a customer has replaced a piece of equipment, a furnace, a water heater, a range, and the plumber has taken it upon themselves to turn the gas off at the high pressure service. Then they've installed the new piece of equipment and they have turned the gas back on to a mercury regulator from a 20 pound service too quickly thereby rushing the gas into the regulator, thereby blowing that mercury out and normally the mercury either lands on the ground or it stays into the vent, the vent piping.

And the third issue that I've seen with merc regs is, you know, they're like any other regulator. Over time, they're set at 6, 6 1/2 inches water column, somewhere of that nature, and then, you know, you go back and maybe it's dropped down to 5, 5 1/2. Maybe the spring is worn out inside or something of that nature. Anyway, it's not giving the same flow and constant pressure to the customer that it did its first, you know, 20, 30, 40 years of life. And at that point in time, we change them out.

Q. Okay. Have you personally witnessed this -- what we've read about, what we've heard about, and we've heard other people tell us about, the whale squeal that you hear out of a mercury regulator when it's having issues? Have you heard that before?

A. Never heard it, sir.

Q. Okay. That's nothing -- you never had that. Okay.
A. No, not --
Q. What about the -- have you ever had a situation where the end user had line pressure from a malfunction of a mercury regulator?
A. I got to tell you, in 36 1/2 years here, I've never seen that from any regulator, not a spring loaded regulator or mercury regulator. In fact, I've never seen any regulator blow at service pressure.
Q. Okay. That's good. That's all I have. That's all at this time. Thank you so much.
A. Okay. Yes, sir.
MR. CLEMENTSON: John Clementson, I have one.
BY MR. CLEMENTSON:
Q. Besides the operator error on mercury regulator, the plumber turns it on too fast --
A. Yeah.
Q. -- the failures that you've said you expect to see out of it, are they common, the same type of failures you would expect to see out of a spring loaded regulator?
A. Yes, the only difference being is that the mercury regulator -- a spring loaded regulator I think maybe one time, and that probably was on a 50 pound system where it was turned on too fast, and it burst the diaphragm in that regulator. That's a 50 pound system. But as far as mercury and spring loaded regulators are concerned, no, it's -- they both operate exactly the same, exactly

the same. I wish, I wish the regulators nowadays were built, you know, like the mercury.

MR. CLEMENTSON: That's it.

LT. OLIN: Bill Olin, Montgomery County.

BY LT. OLIN:

Q. You mentioned something early on, 121 --

A. It's a 121 code which is a supply order for us, yeah.

Q. A supply --

A. Supply code.

Q. -- turn on.

A. So if someone -- yeah, turn on. Someone's moving in, yeah.

Q. Okay. That's all. I hadn't heard that before.

MR. CHHATRE: Steve, Doug.

MR. PRICE: None for me.

MR. STAEBLER: Yeah, Bobby, just -- Doug Staebler, Washington Gas.

BY MR. STAEBLER:

Q. You had talked about the service technicians doing work on a meter bank, a meter in a meter bank, and they would go in and they'd look at, I'm thinking in a case where there's two regulators and parallel. They get a reading, a pressure check and the pressure's not right. Would that service tech go back and then adjust those regulators and disconnect the vent and do a pump test or do they call rough-in to come out and do that?

A. In days past on a mercury regulator, they could adjust them.

Unless they're operator qualified now, we don't want them adjusting mercury regulators because we do not want them to take the cap off that regulator.

Q. And now meaning?

A. We don't have a problem with them disconnecting the vent line to do the pump test on the vent because only if they have their mercury regulator kit with them, i.e. bucket, the bag, the nitrile gloves, the duct tape, all that different stuff like that, that we use, it sounds primitive, but it works very well. They carry that to do the pump line test on the -- the pump test on the vent line, but we don't want them taking that cap off that mercury regulator.

Q. So if I'm going into 8701 Flower Branch, 15 meters, I'm doing a turn on --

A. Yep.

Q. -- for unit 3, I would bring -- and there's two mercury regulators in there, I would bring in that vent pump kit and do a vent pump test on that vent?

A. If you're working with the number 1 meter. Only if you're working with the -- only if you're turning gas onto that number one meter. If you're turning gas off to that number 1 meter, you're not required to do it. Only turning gas on.

Q. And what's the number 1 meter?

A. The number 1 meter is if the units are labeled 1 through 10, or if they're labeled 101 through 110, 101 is the number 1 meter. Number 1 is the number 1 meter if they're A, B, C, D, E, F, G, H,

I, J.

Q. Okay.

A. A is the number 1 meter. Number 1, which is normally the first one off the rack, but it depends on how the plumber would have run the pipes in the past. Normally it's the number 1 meter right off of the rack, the one closest to the regulator.

Q. Okay. And then you mentioned, too, that like a service tech wouldn't change out mercury regulator. So a service tech, if they went to a single family house --

A. Right.

Q. -- which is a spring loaded regulator that had failed, who would change -- they would change out that regulator?

A. Spring loaded regulator.

Q. If it's a mercury regulator, then they would refer it to rough-in?

A. That's correct.

Q. And why would they refer it to rough-in?

A. Because the rough-in construction guys are the ones that are operator qualified to change our mercury regulators. They're the ones we also send to the doctor once a year to get tested for mercury.

Q. So what's the difference between changing out a spring loaded regulator and a mercury regulator? What's the difference in qualifications and requirements? Why is there a difference?

A. Because of the mercury.

Q. So it's not -- nothing to do with the regulator, how it operates.
A. It has nothing to do with --
Q. It's just because --
A. No, no, it has nothing to do with the operations of the regulator. It has nothing to do with the size of the pipe. It has nothing to do with using a 10, 14, 18 inch wrench and pipe dope and leak checking afterwards and checking to make sure that the regulator, high load, low load, lockup, vent is clear. It has nothing to do with that. It has everything to do with the mercury period.
Q. Right.
A. We take a lot of pride in not having mercury spills and doing it properly on mercurys. We take mercury very seriously.
Q. And now I guess since you're managing and only 10 days into it, the contractor side of it --
A. That's funny, right, 10 days.
Q. -- are you aware of a proactive mercury replacement program where we're actively going out and using contractors to change out mercury regulators that are -- that haven't failed, that are just in our system and --
A. They do change our mercury regulators. In years past, there had been money budgeted where we were hard on these mercury regulator changes and then once the contractors reached that specific point, then they would cease and desist with the mercury

regulators and then mercury regulators were changed out on an as needed basis, and that means is it changed because, you know, the pressure, the malfunctioning, the venting of the regulator, you know, at the vent, anything of that nature, like that. I am not aware of any such program right now.

Q. Okay. So each year we budget a certain amount of --

A. I would hope that somebody would contact me in maybe the net month and we'll talk about some budget dollars and we can get something going.

MR. STAEBLER: Okay. That's all I have.

MR. LAND: To add to that though, we do know that when the technicians are out in the field and they may encounter a mercury regulator, say they're just reading a meter for a customer that comes in, they do refer that mercury regulator though. I wanted to add that. So it's not like we look at them and do nothing about it. Even though we don't physically change it at that point in time, we know it's there and we know it has to be done, and we schedule it appropriately with the customer.

MR. CHHATRE: Ravi Chhatre, one follow-up question.

BY MR. CHHATRE:

Q. With your earlier assignment, not current assignment, do you -- can you give me an estimate as to how many mercury regulators -- I know you said we changed hundreds of regulators. It's not a new or special item for you.

A. Yeah.

Q. But do you have any idea as to --
A. Well, I can tell you some people laugh because they think I'm a little OCD, but I can tell you many moons ago, I had this beautiful tracking sheet that I tracked how many merc regs, just my rough-in crews were changing, and we were right around 500 a year, and the contractors were changing more than that. So, you know, if they took the budget dollars and how much we were paying them to do them, somebody probably has that data somewhere back in contractor services of how many merc regs were changed out by our contractors and, you know, company crews somewhere. I would say -- that was in a year's time, I don't know, 2, 3, 4,000 maybe.
Q. Mercury have been changed?
A. That would just be my guesstimate.
Q. Sure, I understand.
A. That would just be my guesstimate.
Q. Yeah, and what about the spring? Do you replace any of the spring loaded --
A. We replace them for the same reason that we would any mercury regulator.
Q. Sure.
A. A regulator is a regulator is a regulator.
Q. Well, all I was asking you, what kind of numbers you are talking about for the spring? I mean I know you said several thousand for mercury. How many for spring? If you can -- if you have --

A. Yeah, spring loaded I never tracked them because spring loaded is -- and you have to understand that we have some spring loaded regulators that are -- have been out there 10 years, 20 years, 30 years.
Q. Sure.
A. We have different models and types of regulators because, you know, regulators get updated --
Q. Um-hum.
A. -- and we're always looking for the latest and greatest which is, you know, good. I really can't give a number to that. It -- I don't want to lead us in the wrong direction and take a wrong guess.
Q. That's fine.
A. Because I would only be speaking for my crews --
Q. No, that's okay.
A. -- and the possible technicians at Springfield, in the Virginia area. I don't think -- in my opinion, in my 36 years of service, I don't think we have a really high failure rate of regulators in my opinion, whether they're spring loaded or mercury.
MR. CHHATRE: Can we get some kind of information, that is the one he gave me, what he's talking about, how many were replaced in terms of --
UNIDENTIFIED SPEAKER: Yes.
MR. CHHATRE: -- spring loaded, if you can, give me -- at

least to start, let's just get 2 years.

UNIDENTIFIED SPEAKER: For the spring loaded side.

MR. CHHATRE: Yeah, I mean both spring loaded --

UNIDENTIFIED SPEAKER: Yeah, yeah. So the spring loaded will be mostly just failures because or I'm not sure, there may be sizing. I'm not sure we even counted those but there's no --

MR. CHHATRE: Something I can compare.

UNIDENTIFIED SPEAKER: Yeah, yeah.

MR. CHHATRE: And we've got younger. I realize that they much younger than your mercury regulators.

UNIDENTIFIED SPEAKER: Yeah, but they're not built like mercury regulators either.

MR. CHHATRE: Anybody have any follow up questions?

LT. OLIN: Yeah, I've got one.

MR. CHHATRE: Go ahead.

LT. OLIN: Bill Olin, Montgomery County.

BY LT. OLIN:

Q. So you said meter 1 is the first one --

A. Yeah, and normally meter 1 is the first one off the rack.

Q. Okay. So if -- I don't have a picture of it, but if there are two rows of meters and you have two meters that are right next, are there --

A. The top meter.

Q. The top, all right.

A. The meter closest to the regulator is normally the number 1

or the number A meter. When we would set meter racks up, then it would be, you know, A, B, C, D, E, and so and so liked that. So it looked -- believe it or not, we like things to look uniform, and we -- normally our racks are put in well before the plumber is there or maybe the plumber has his pipes. So as we put these meter bars in and these racks in, you would label them, you know, A, B, C and then the plumber would come in and everything, you know, when you're all said and done, and you come in there, and it's -- it's pretty to more people than a pipe man, and that's what we like.

Q. These are pretty yellow.

A. They are bright yellow. I walked every one of them buildings that day up there. That was the closest I ever came to heat stroke. It was hot.

BY MR. PRICE:

Q. Bobby, I'm not -- Steve Price, Washington Gas. I'm not sure you know the answer to this but on a multimeter rack where there is no procedural requirement to do a vent line pump test or do anything with the regulator --

A. Right.

Q. -- and that technician were to check the vent clearance on the outside as you described.

A. Yeah, to make sure the vent is clear.

Q. Correct.

A. Right.

Q. How would that be reflected or would it be reflected in the old CAD?
A. So in the old CAD, it's going to say -- I think it's -- I don't want to get it wrong. I'm not -- I think it says vent clear or vent check.
Q. Okay.
A. It says one of the two, and it might say both.
Q. Okay.
A. In the old CAD. It was a screen. It was a mandatory screen. So like odorant, vapor test was on there, and then it would -- the vent line was right below that. That was the three major things on there, but there's other things on there that were required, that they would not be able to complete that thing, the order, and their CAD or their new tablet, until the required screens were filled out, kind of like when you go online and you want to buy something and they keep asking that right there, and you've got to -- it's the same exact thing like that.
Q. Okay. So whether they did a pump check or just check the screen, that's the field they would just check yes.
A. Yes, sir. Um-hum.
LT. OLIN: Bill Olin again.
BY LT. OLIN:
Q. Do you recall if the mercury regulator would have been a required field on that?
A. That was later in the game. So the --

Q. A checkbox on there.
A. Yeah. They changed that in the CAD -- let's see. We've been at the new building how long now? Five years. Five. So, let's see. That would be 4, 5 -- it had to be 10, 12, 14 years ago where it was made mandatory on the CAD for -- a check block was added, if there was a mercury regulator at the home or the multifamily, wherever they were.
Q. Just to identify that --
A. Just to identify that there was a mercury regulator there, yes, sir. Um-hum.
Q. And that would have been required --
A. I'll tell you who would know that would be Karen maybe.
Q. And that would have been a required field to continue to submit the report?
A. Yes.
Q. Okay.
A. Um-hum.
BY UNIDENTIFIED SPEAKER:
Q. And then -- so then one more thing, like thinking about putting that field in there, tracking mercury regulators, other than the issue with mercury and contamination of mercury. In your experience, would there be any other reason that you would want to replace -- proactively replace the mercury regulators that we would identify in the track of --
A. Yeah, I would like to replace them with customers and close

them. So in other words, when a customer rehabs their basement, right, they put a new washer and dryer in, and then they put some drywall up and this and that, and everything like that. So, you know, the next thing you know, now we've got our meter covered and you can just see a little thing, and sometimes they'll put a little door in. They open the little door. Well, you can get to your meter. Well, no our regulator is back behind here. So, you know --

Q. I mean for mercury regulators, is there any reason that you would see that we would want to proactively replace mercury regulators other than the mercury problem?

A. Well, listen, for me, it would be for updating the system for the customer, but more importantly -- well, just as important, in my humble opinion, for Washington Gas, we have to -- we have to operate or qualify certain individuals to be able to change these mercury regulators. We purchase Jerome meters for 6 to $8,000 apiece. We have special procedures to change mercury regulators. If it's a mercury regulator on the weekend or Sunday, Saturday night, you know, you only have specific crews on. So now we're going to call somebody out. For me, for us to go out there and proactively change these mercury regulators to get them out of our system and go to our updated spring loaded regulator, for us, I think the front end money that would be spent for however many year plan that we would have would be a little substantial but I think for the long run, in the end, 20, 15, 10 years, whatever it

is for us, I think it's absolutely cost saving for us.

Q. I guess my question, you know, is for the operator.

A. Did I take it off path there?

Q. If there was water in here instead of mercury, if it was a water sealed regulator, would there be a reason to replace these given that they're not going to freeze and all that stuff and evaporate?

MR. CHHATRE: Even if it was Freon, we would.

MR. LAND: No, there's not.

UNIDENTIFIED SPEAKER: Right.

MR. LAND: Because it's a fantastic regulator. I can tell you, and I just -- and I -- it can wait until we turn the recorder off and I'll tell you a little story about Lowe's. I went to Lowe's last night and bought two new thermostats because my two at home are mercury and my heat anticipator on them I think is gone, and I went to Lowe's and I was a little disappointed to buy the Honeywell thermostat and they're battery and springs, and I'm like, yeah. The T67 turned into a T87, and I'm a little disappointed that my thermostat doesn't have mercury, but that's -- it's a great, great regulator. I mean no regulator would sit out there. How long would it sit out there for that long and just continually work? It just does it. It just keeps giving, you know. It's like any other piece of equipment, you know.

MR. CHHATRE: This is Ravi, NTSB.

BY MR. CHHATRE:

Q. Can you do one more time, you said for first meter, you will do something with the regulator that is (indiscernible) or pressure test or -- will you be -- I'm not quite clear I understand that.

A. Right, right. So in our operations and maintenance manual on a multimeter rack, for -- if you're turning gas on to a meter, any time we turn gas on to a meter, we always check the regulator except in an outage. So if we have an outage where we lose 100 homes, 3,000 homes, if the gas has been off for less than 24 hours, we're not required to check the regulator.

For a multifamily unit, if the gas has been off for over 24 hours, and it was turned off because the old tenant moved out, the new tenant moves in, now we've got a 121 turn on supply order. The first meter off is usually meter number 1, 101, number A, what have you like that. So we put -- we drop that meter down, we put our gauge up on there, our manometer, and we check that regulator setting. The only setting you can check is the -- well, it's going to be low load or high load, either one. You're not able to check static because the other meters are on. So you do that just to see what your regulator --

Q. Is putting out.

A. Exactly.

Q. Okay.

A. Exactly, and then you do your vent test.

Q. And then at that time you do the vent test?

A. At that time you do your vent test.
Q. That's the time --
A. Any time you're checking your regulator like that, you're supposed to be doing your vent test.
Q. That is when you're going to view the coupling and put your line through and pressure through the --
A. The pump test.
Q. The pump test.
A. The pump test, yes. Um-hum.
Q. But you have to disconnect the coupling?
A. You have to disconnect the union because you have to get the -- you have to get the rubber cork in there with the -- it's a brass T on there. You'd have to see it.
Q. If you're replacing or reconnecting let us say meter number 4, and --
A. No need to check the regulator or do the vent line test.
Q. Only if you're doing with number 1, then you have to do all this?
A. Yes, sir.
Q. Gotcha.
A. Right, but if you're doing meter number 4, you've got to check that screen L outside for mud daubers --
Q. Right, right.
A. -- or anything else.
Q. You have to clean the vent line at that time on the

regulator, correct?
A. Yes, sir. Um-hum.
Q. Great. Thank you.
UNIDENTIFIED SPEAKER: Just one more thing. I'm sorry, Kelly. We you going?
MR. EMEABA: Yes.
BY MR. EMEABA:
Q. I just wanted to continue with Ravi's question and maybe -- I didn't ask you to draw the schematic, but I drew something that may be of help to me. For instance, in this multi-dwelling --
A. Um-hum.
Q. -- you have -- I know Lt. Olin was trying to describe it.
A. Yeah.
Q. If the pipe is done this way because it annunciate -- if it split here, then the pipe goes this way and from the construction.
A. Um-hum.
Q. Now you have this meter, this meter, this meter.
A. Meter.
Q. So the one on top --
A. Yes, sir.
Q. -- is the meter I want.
A. Yes, sir.
Q. Okay. That just what he was puzzled and I myself wanted to say in a case like this, how do you know which one is meter 1.
A. Um-hum.

Q. Okay. This top meter, that is meter 1?
A. Yes.
Q. So this one does not count. Even though they're also equally closer, because one would have said which one is closest to these regulators?
A. Right here.
Q. Okay.
A. The top meter.
Q. Okay. Thank you so much. That answers my question. I appreciate it.
A. Nice drawing by the way. You did good.
BY UNIDENTIFIED SPEAKER:
Q. So here's just a -- I've probably driven the bomb squad truck half a dozen times today. We all know that's not the case because I've been here, but it satisfies the need to check a box on the report. Do you think in you all's reporting writing that there would be people out there that would just check a box to make that report go away on your -- is that a possibility?
A. Well, I can't -- I can't surmise on that situation. I mean, you know, there could be.
Q. Right.
A. The Metro guys got fired and they said they filled the reports out properly --
Q. Yeah.
A. -- you know. So the only thing I can say to that is that we

go through extensive training for our service technicians, all the way up from when they start as service assistant. All -- we have very good training facilities for our people. We train fire departments and all kind of different people come over for different type of refresher training and everything, and we take a lot of pride in that. So you would hope that once they've been an assistant service technician for a period of time, and then they move up to service technician, the whole time they're being supervised and trained, and requalified and operator qualified, you can't be out there every last single minute watching every last single person, right, as a supervisor. So you're relying on the training that they've had, the operator qualifications that they've had and with all that said and done, they should be doing the right thing, is what they should be doing.

Q. I think I remember seeing a service report that said -- it was checked that there was no mercury regulator and, in fact --

MR. CHHATRE: That's when we were documenting --

BY UNIDENTIFIED SPEAKER:

Q. -- the mercury regulator had actually -- was removed at the time of the accident and this report was -- so that's why I was just sort of going down -- I just -- I mean --

A. And that wouldn't surprise me that possibly that technician that was there was not certain if that was a mercury regulator or not. We have a lot, a lot of different regulators in the field, and do we need to retrain some people? Yes, absolutely sometimes

we do, and we do things of that nature like that. So, you know, what was he looking at when he checked the box? Was he looking at anything? I can't speak for that technician. If I got to talk to him I could.

Q. Okay.

MR. CHHATRE: If not, thank you very much for the help and staying quite late for us. I appreciate your help in this investigation.

MR. LAND: Okay.

MR. CHHATRE: Off the record.

(Whereupon, the interview was concluded.)

CERTIFICATE

This is to certify that the attached proceeding before the

NATIONAL TRANSPORTATION SAFETY BOARD

IN THE MATTER OF: THE EXPLOSION OF APARTMENT BUILDING 8701 OF FLOWER BRANCH APARTMENTS IN SILVER SPRING, MARYLAND ON AUGUST 10, 2016
Interview of Robert Land

ACCIDENT NUMBER: DCA16FP003

PLACE: Washington, D.C.

DATE: January 31, 2017

was held according to the record, and that this is the original, complete, true and accurate transcript which has been transcribed to the best of my skill and ability.

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Kathryn A. Mirfin
Transcriber