0UNITED STATES OF AMERICA

NATIONAL TRANSPORTATION SAFETY BOARD

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Investigation of: *
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MERRIMACK VALLEY RESIDENTIAL GAS *
FIRES AND EXPLOSIONS * Accident No.: PLD18MR003
SEPTEMBER 13, 2018 *
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Interview of: JEFFERY CROKE

Northern Essex Community College
Lawrence, Massachusetts

Tuesday,
September 18, 2018

APPEARANCES:

ROGER EVANS, Investigator in Charge
National Transportation Safety Board

JAMES SOUTHWORTH, Investigator
National Transportation Safety Board

DARREN LEMMERMAN, Investigator
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ANGELA MOTLEY
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DAVE NELSON, Operators Manager
Columbia Gas

THOMAS TOBIN, Esq.
Wilson Elser Law Firm

I N D E X

I N T E R V I E W

(12:00 p.m.)

MR. EVANS: Good morning. It's September 18, 2018, and it is now 12 noon. My name is Roger Evans and I'm an investigator with the National Transportation Safety Board out of Washington, D.C. We're at the Northern Essex Community College in Lawrence, Massachusetts.

This interview is being conducted as part of the investigation of a multi-resident gas explosion that occurred in Lawrence/Andover, Mass. on September 13th. This case number is DCA -- excuse me -- this case number is PLD18MR003.

This interview is being recorded and may be transcribed at a later date and a copy of the transcript will be provided to the interviewee for review prior to being entered into the public docket.

Mr. Croke, can you please -- you are permitted to have one other person present during the interview. This is a person of your choice -- supervisor, friend, family member, or nobody at all. Please state for the record the spelling of your name and the person you have selected to have with you during this interview.

MR. CROKE: J-E-F-F-E-R-Y, C-R-O-K-E, and I'm with Tom Turin.

MR. TOBIN: Tobin.

MR. CROKE: Oh, I'm sorry, Tobin. Sorry, Tom.

MR. EVANS: It's the wrong name, just who you --

Mr. Tobin, please introduce yourself and your affiliation.

MR. TOBIN: My name is Tom Tobin. I'm an attorney with the Wilson Elser law firm.

MR. EVANS: I'd like to go around the room now and have everyone introduce themselves with name, spelling of the name, job title, and affiliation.

MR. WALLACE: Richard, R-I-C-H-A-R-D, Wallace, W-A-L-L-A-C-E. I'm the Director of the Pipeline Safety Division with the Massachusetts Department of Public Utilities.

MR. LEMMERMAN: Darren, D-A-R-R-E-N, Lemmerman, L-E-M-M-E-R-M-A-N, PHMSA Accident Investigation Division.

MR. SOUTHWORTH: Jim, J-I-M, Southworth, S-O-U-T-H-W-O-R-T-H. I'm an accident investigator with the Railroad, Pipeline and Hazardous Materials Division of the National Transportation Safety Board, and I'm out of Washington, D.C.

MS. MOTLEY: Angela Motley, with the Department of Public Utilities; A-N-G-E-L-A, M-O-T-L-E-Y.

MS. HALLIDAY: And I'm Julie, J-U-L-I-E, Halliday, H-A-L-L-I-D-A-Y. I'm with the U.S. Department of Transportation, Office of Pipeline Safety, and I'm a senior accident investigator.

MR. NELSON: Dave Nelson; D-A-V -- D-A-V-E, N-E-L-S-O-N, Columbia Gas, Operations Manager.

INTERVIEW OF JEFFERY CROKE

BY MR. EVANS:

Q. Well, thank you, Jeff, for agreeing to speak with us today.

I think before we begin the actual questioning, we like to get a little bit about your background, including your current position and job title, company you work for, and how long you've been in that current position. And let's just go like 10 years back in your career. Give us the jobs and titles, and then your education background as well.

A. All right. I started at Columbia Gas in July of '84, so I've got 34 years with the company. I was a plant operator for about 7 years of that. I was a service technician and lead service technician taking care of commercial accounts and regulators, and heating and air conditioning for quite a few years.

I was a M&R technician for 5 years, and I've been in the current position for 2 years. My education was high school and classes here and there, but --

Q. Okay. And do you have -- who do you report to?

A. Maggie Cousineau.

Q. And how do you spell that, please?

A. How do I spell it?

Q. Yeah.

A. M-A-G-G-I-E, C-O-U-S-I-N-E-A-U.

Q. Okay. And do you have any reports, people that report to you?

A. I have 11 M&R technicians across the state: 4 in Springfield, 4 in Brockton, 2 in Lawrence, and 1 in Northampton.

Q. Okay. And we're talking exclusively Mass, not the other

regions, okay?
A. Right.
Q. Right. Okay. And the person that -- do you have a person that covers this specific area for you?
A. Right.
Q. What's his name?
A. Steve McGinnity and Tom Lafoe. M-C, capital G.
Q. And Tom Lafoe?
A. L-A-F-O-E.
Q. So they are -- how do you, how do you, term -- I mean, what's the designation you give for their area? What is that area called?
A. We just call it Lawrence, the Lawrence service area, Lawrence.
Q. Okay. So the Lawrence service area techs. If we spoke to either one of those, would they be quite familiar with all of the --
A. Yeah. They've both been around for 20-plus years.
Q. Okay.
A. In the position.
Q. Okay.
A. They're very squared away.
Q. Okay. So you would have nine other reports kind of similar to these guys --
A. Correct.

Q. -- that are doing the day-to-day work in the regulator business, correct?
A. That's correct.
Q. Okay. So for this particular interview, I would like to actually go through your day and tell us what happened, what you heard, where you were at, who you talked to. Just kind of like get a recap of when you heard there was an incident.
A. I don't know the exact time, it was somewhere probably, Dave -- I was at a training, Step Up To Leadership training in Shrewsbury, Massachusetts, and I had just pulled out of there. I was probably 4 miles, 5 miles from that center, when Dave Nelson called me and told me there was a potential -- well, actually there was an overpressurization going. They thought they were seeing 30-something inches in the pipe. I think there was a couple houses burning at the time. That doesn't sit real well with an M&R person. That's -- you know, when you hear something like that.
Q. Um-hum. So when you heard about the accident, did you go on scene at all?
A. I drove right up there, but -- well, I called gas control and asked them to send me a trend of the area on the telemeters, and I saw straight up, instantly -- well, it took maybe under 10 minutes for it to go from 10 inches to 37 inches at the time I got it.
So I kind of mentioned it to him that it really wasn't normal. It didn't look like a regulator. Regulators usually go

like this diagonally. So I got up there as fast as I could. It took quite a bit of time.

Q. Do you know what time that was?

A. About 5:50, and I got the call -- about 4:50, I'm sorry. And I drove up -- I didn't get up here until, I don't know, it took well over an hour to get here. You know what I mean, the road was just stopped, you know, fire trucks and emergency vehicles going up. I wasn't that far away there in Shrewsbury, probably 40 miles, 45 miles.

Q. Um-hum. So you're saying you left at 4:50, got there like an hour later?

A. Yeah.

Q. Okay. And what did you, what did you do when you got there?

A. I immediately started going around checking the lockup at all the stations, just before they gave the order to shut everything down.

Q. And when you say lockup at the stations, are you talking about the 14 stations in the area --

A. Right. We were making sure every regulator locked up bubble tight, and --

Q. Okay. So --

A. The guys were all running around looking for the station that was the culprit but nothing was really flowing. There was one station where they gave me the data later, one station that looked really suspicious. I went into engineering later in the evening

and asked him what happened, because we lost 25 pounds on the inlet, and then went down to 1.2 inches on the outlet, and that was the station where the problem was. So --

Q. You kind of knew that --

A. Oh, I knew, I knew it wasn't normal. I never -- well, I think that's it would be because --

Q. Right.

A. -- kind of a very --

Q. Had you in your career, all these years you have been around this environment like this, have you ever heard of anything like this happening in journals, articles --

A. No. No, because control lines are generally placed where a backhoe can't take two in one scoop because they're buried. [redacted] I knew something happened to a regulator station, but I never thought about them having one main getting chopped off with the regs hooked up to the other main. So I knew but I didn't know.

Q. Right. Okay. Part of -- and by the way you've been -- I didn't get the -- you've been in this position since --

A. Christmas day of 2016.

Q. Since 2016 and when you started in this area, had you -- and in other times, have you done any part of the risk assessment for --

A. I've been doing a risk assessment since 2012. I sit on every risk assessment. When I was in M&R, we -- I was called the lead

regulator maintenance mechanic. You know, when I had Springfield, I had 100 and --

Q. Right.

A. -- at the time 156 regulator stations I took care of. I sat in every year and I did the full regulator risk assessment with engineering. I identified -- you know, prioritized the stations where we wanted to work at, upgrade or whatever.

Q. Right. So can we go through a typical risk assessment of, you know, what you would do in a risk assessment for a regulator?

A. We have a spreadsheet that covers probably 40 topics, from traffic, flooding, telemeter. It's very comprehensive. And we rate everything, you know, whether you have water issues, whether you have pedestrian issues, traffic issues, old style settings that don't meet new company standards. You know, you go right through the whole thing, and then your program assigns a number to it and that's how projects are developed each year.

Q. So are the risk calculation numbers, they are assigned based on HCA or if it's near a school or --

A. I don't -- no, I don't think so. Number of customers definitely.

Q. Number of --

A. There's a hospital or a, you know, nursing home or something. I don't remember schools coming into play though.

Q. Okay. So the spreadsheet, though, does that get fed into a -- is that the lead-in document that you feed into a program?

A. We actually sit down, so it's a live Lotus -- not Lotus -- Excel spreadsheet, and it calculates as we go. So they feed all the data in and when they're done they pretty much have their numbers and the calculations done.

Q. Okay.

A. And it's all -- I mean, engineering does all that. We provide the information. Since I've taken this position, each area I go to, because my guys in the field are the -- when I was in the field I was a true expert and I could tell you anything about any one of my stations.

My guys are bringing -- we've got regulator risk assessments coming up this month. It'll probably be canceled right now till next month or whenever. But each area I bring the techs in. So here I'd bring two of Springfield, four in Brockton, four in Northampton. Northampton, I always bring Bob down because he's -- we cover for him when he's on vacation and stuff and that used to be my area, too. So I bring him in, you know, and let him talk about Northampton and what he needs.

Q. And who would Bob be?

A. Bob Carmel. He's my Northampton guy. But what we do, the guys in the field are the guys that know the day-to-day, what systems are giving them trouble, what regulators they would like to replace, where they have flooding, traffic, you know, whatever. Whatever's changed -- sidewalks change, you know, and if it gets flooded that never did. So they're the value -- you know, we

bring them in because of their value.
Q. Let's go back to the spreadsheet. So the spreadsheet is -- it's kind of a manual process then?
A. Yeah, it's -- Springfield's every bit of 8 hours, sometimes 12 hours. We'll come back the next day and finish it.
Q. Okay.
A. Every station, every line; next station, every line. It gets very redundant, some of it, because a lot doesn't change year to year, but we still have to cover every bit of it.
Q. So you go down the columns, and each column is a different scenario, correct?
A. The columns are across the top, stations are down the side. So we go right across the top.
Q. Right. But it would have water, traffic, all the --
A. Right, right. They have it listed under, you know, like health hazards, you know, just --
Q. Right.
A. -- different things. Capacity, you know, maxed out, almost maxed out. Station has no load on it really anymore so it can almost be combined with another one or eliminate it.
Q. If we wanted to see the risk assessment that was done for that area there --
A. That was done last March, so they would have that readily available, engineering.
MR. EVANS: Mr. Attorney, we would definitely like to have

that.

MR. TOBIN: For all 14 regulators or just the one regulator at issue?

MR. EVANS: Probably the whole thing. Just say for the risk assessment spreadsheet for Lawrence service area. We can get it, right?

MR. CROKE: Yeah, I won't get it. Engineering will have to get that for you.

MR. TOBIN: Is it one spreadsheet or 14 separate?

MR. CROKE: No, it's one spreadsheet. It's just a massive spreadsheet.

BY MR. EVANS:

Q. Okay. So as you're going through the risk assessment and you come up with urgent --

A. Yeah.

Q. -- (indiscernible) and you have --

A. We have a station with like up in Lawrence -- I took Lawrence 4 months ago. Springfield, when I had Springfield, I had a lot -- the afforded me a lot of money so I made a lot of upgrades and we got rid of all the old stuff, really upgraded the whole low pressure system on the regulator side of it. So modern type entry regulators or FlowMaxes on a low differential system.

Up here they still have a lot of 1098s, axial flows, Grove 83s, model 83s, which we are in the process now of -- I've got regs on the shelf, the guys who are doing the compliance issue

started changing regs out. I got permission from system planning and engineering because it wasn't a capital expenditure, we had new regulators. So starting in May I actually started having the power to direct people to start making changes.

Q. So, for instance, if we were to -- if we were looking at the regulator that gave us the issue here, right?

A. Um-hum.

Q. We would see a line item in your spreadsheet that says what you looked at for that specific --

A. Exactly.

Q. Okay.

A. That was modern 12900 T's with Mooney series all low -- or, you know, low pressure regulators in it, series 20 low pressure.

Q. Okay.

A. So, I mean, the station, it's a single run but it's squared away as far as -- you know, it doesn't meet our new standards, but -- with two runs, multi-run.

Q. Right. Okay.

A. In a situation like this, multi-run wouldn't make a difference anyway, because one runs going wide open.

Q. So once you have a, you know, an item that you're going to -- a line item comes up and you say, well, I've got to fix this; this is high risk, we can't go with that so we have to do something, do those become work orders?

A. No. The risk is not -- like if something's at risk, I fix it

immediately. I -- if something is a safety issue, a compliance issue, or just something we don't, you know, deem right, it's fixed immediately. And I told -- there's people will tell you I spend a lot of money that they don't want me to spend. I'm very passionate at what I do and I -- if something's not right, it's fixed.

Q. So saying that then, if you and I are doing a risk assessment of the regulators and we find something, do you get on the phone and say, hey, we just noticed this in a risk assessment, fix it?

A. Say -- rephrase that one, please.

Q. Let's just say that we're -- you and I are doing a risk assessment --

A. Yeah.

Q. -- of this neighborhood and we find something on a regulator that needs to be fixed, you know, it's bad, it's a high risk item.

A. I'll send my guys out to fix it.

Q. Right then and there?

A. Um-hum. On a -- yeah, safety issue, complaints issue or just a operational issue, yes. What regulator risk assessment is, we've got four compliance basis still Lawrence. That would be on my list starting this year when I can -- I sat in last year, but Bart still had the say. This year the four compliance basis would be my very high priority to get rid of them. We shouldn't be going on a compliance basis anymore in this day and age.

You base it on, they go through the building, the structure,

the regulators, the piping, corrosion, hazard -- like all the way down to lead, mercury, which we don't have any mercury. No, I mean, it's very comprehensive. They assign -- if it's not any immediate threat, they assign a value. If it's something bad, I fix it regardless.

Q. Okay. When the work gets completed would there be a reference tied back to the -- that that work was done for a risk assessment?

A. I'm not sure, because I'm -- what comes out of engineering is generally capital, so -- it's based on risk assessment so I think it would be, but I don't want to answer that for them.

Q. Okay.

A. I'd be -- could be out of line on that one. When we make a repair in the field, it's a job order and we change something out for a reason. We just got done changing all the pilots in Springfield. We got rid of all the old, 12 pilots, we were starting to have issues with them. So I spent a lot of money, pulled out all the pilots, all the old Becker style, which were made back (indiscernible) also, we replaced all of those.

Brockton, I just finished replacing every pilot there this year, the old style, because we're just having trouble, you know, the reactivity wasn't good. They were losing accuracy.

And Lawrence, the guys have replaced about half the pilots up here this year with --

Q. Right.

A. -- enough on the shelf to replace the rest of them. So, I mean, if you see -- if I see a problem we take care of it.
Q. Okay. Sounds good. No problem.
The world of PHMSA -- we have a few of those people around here today -- there's a regulation called 192.195(a)?
A. 192?
Q. 192 --
A. Yeah.
Q. -- .195(a) --
A. Correct.
Q. -- .199, .201. These -- this standard relates to overpressure protection in a regulator.
A. Okay.
Q. Okay. And it basically says -- Darren, do you have it in front of you?
MR. LEMMERMAN: Two seconds.
MR. EVANS: I'm just going to ask you about this.
MR. CROKE: That's fine.
MR. LEMMERMAN: Do you want to read it?
MR. EVANS: Yeah, I'll read it.
BY MR. EVANS:
Q. It's a very simple, it's not -- there's not a whole lot to it, but it says: Protection against accidental overpressuring. Except as provided in blah, blah, blah, each pipeline that is connected to a gas source or a -- excuse me -- a gas source so

that the maximum allowable operating pressure could be exceeded as the result of a pressure control failure or of some other type of failure, must have pressure-relieving or pressure-limiting devices that meet the requirements of .199 and .201.

A. We -- when I first started with the M&R in 2011 or 2012, Springfield was predominantly a slam shut system, low pressure. We had a lot of issues. You know, when the weather would warm up in March suddenly and all slam shut shut, and when the next cold day comes you find you got seven regulators shut.

We swapped over to monitor control 2012, 2013, and a little bit in 2014 we changed out every, pulled every slam shut system, monitor control with pilots. We got rid of all the self-operated regulators except on the medium pressure, the 627 stations.

The statute, as you read that, doesn't say relief valves. It says you have to have a secondary device, which is our monitor regulator. A monitor regulator -- what happened, like I said, I've been -- I'm good at what I do. I study what I do. I read everything I can get my hands on. I'm on committees. I go to -- you know what I mean?

Q. Oh, yeah.

A. And I could not pick out that the -- you know, what happened is just so rare, maybe -- I don't know what -- we abide by the standards and the statutes very much so. So I do believe we had overpressure protection proper and --

Q. Okay. I just wanted to get that on the record that the

person in this department believes that you meet the standard. That's -- so, that's all I -- that's the only reason for bringing that up.

A. Okay.

Q. Okay.

A. So I do spend a lot of time -- I'm an SM -- an SMR now, so that became a responsibility for me to really study my standards. Plus I'm doing nonstop training with my guys in the field. I spend a lot -- I spend probably 80 percent of my time in the field on jobs, making sure the jobs are done the way we want them done. So the last thing I want to do is have false information, so I spend a lot of time studying.

Q. Okay. So, you know, when you look at -- just being a devil's advocate. And I know what happened here. I mean, I -- we're very familiar with it.

A. (Indiscernible) I can talk to you about it.

Q. Pardon me?

A. No, no, I'm so used to not talking, and letting everybody know what happened, but --

Q. Yeah.

A. That was just such a freak thing.

MR. TOBIN: Wait for a question.

MR. CROKE: Right.

BY MR. EVANS:

Q. And so, anyway, we're very familiar with what happened,

right. And it's not so much that -- I mean it's obvious when you look at the standard and where you have this -- it's a worker regulator and monitor doing its thing for you, it's set up well. I guess what I'm wondering is, in a million years, would you have ever had that in your spreadsheet, that someone would actually cut the line, that the line would be --

A. I don't think it would ever occur to anybody.

Q. It wouldn't occur to anybody, right?

A. No.

Q. It's such an off the mark kind of occurrence that it's, in your mind kind of like -- since it's not on your spreadsheet as a consequence, as a typical -- excuse me -- as a typical scenario -- and I wouldn't find it on there, right? I wouldn't find any column that points to this --

A. No.

Q. -- type of a --

A. No. Because any station that you did that to, would do the same thing. A regulator has no brains.

Q. Right.

A. It does what it's set to do, and it's going to maintain that pressure regardless.

Q. Okay. So just for the record, if we were looking at your spreadsheet and we're looking at all the scenarios that you have come up with to look at risk, someone cut in a line that has the sensor on it leaving this regulator open wide, would not be on

that spreadsheet?
A. I don't -- I'll say I don't believe so, but I'm not going to say positively.
Q. Yeah. So, and just, this is a -- you know, I'm going to say off the record for this question. I'm just going to ask you --
A. There's nothing off the record on my job.
UNIDENTIFIED SPEAKER: Okay. Good.
(Off the record.)
(On the record.)
MR. TOBIN: The tape was running the entire time.
MR. EVANS: But it won't get typed up, so no -- it won't make it to the public.
MR. CROKE: Okay.
MR. EVANS: That's what we're saying.
BY MR. EVANS:
Q. Okay. So did you have scenarios in your mind whenever this happened like, well, how could this happen? I know I have this, I know I have that, we've done risk assessments, we have the spreadsheet, we have all these items, the scenarios we looked at, and this happened. What did you -- what was your first thought?
A. When it happened or after?
Q. When it happened.
A. When it happened, my first thought was that -- we don't drive on the phone, but after it got going I did. I pulled over on the side of the road and I got a spreadsheet sent to me though, and I

knew right away it wasn't my guys. I knew that, but I didn't know exactly what. But a lot went through my mind. I was -- M&R is black and white as far as I'm concerned. My guys are the same way. Special people do M&R because there's a lot of responsibility. There is no gray. You know, you do it one way and that's it. When I got that, when Dave called me, that was, that was my -- that's the worst nightmare for --

Q. In your career probably. Yeah, okay. I was just curious so -- but you didn't think, you didn't think that at the time that there was something like this that was causing it?

A. No. No, I actually called Dana and I said, Dana, it's not a regulator, you got a valve, somebody opened a valve. They told me there was some construction going on around the town.

Q. Right.

A. I said, somebody just opened a bypass. They were feeding, you know, the 99 pound into a low pressure.

Q. Right.

A. That went so fast -- the trend I had only ended there because they -- I saw the full trend. I saw where the relief valve blew it, and that's where they felt the bypass blew off, about 30 percent drop in the flow and then -- I've learned electronic data is way better than paper data. Paper data, people can throw it away if they made a mistake.

Q. Right.

A. The electronic, we keep -- keeps me honest, keeps my guys

honest, and keeps everybody in the system honest.
Q. Okay. So you just made a statement that's interesting. The drop in -- let me ask the question. The graph that was given to us shows a peak, goes for a little bit of time, and then shows a drop.
A. That was the bypass blowing off.
Q. Yeah. So --
A. I've got it here in my phone.
Q. Yeah. So the bypass blowing off is, in your opinion, is --
A. Yup. A 30 percent drop, and then it came right back when they capped off the bypass.
Q. Okay. And have you looked at this from a time standpoint to make sure that the timing of the bypass coming off is consistent with the SCADA data?
A. No, I haven't. No. But it had to be a big hole in the pipe to get rid of that much gas.
Q. To get that.
A. Yeah.
Q. Because you got to get rid of a lot --
A. Right.
Q. -- of volume --
A. Right.
Q. -- in order for this to drop like this. Okay.
A. That's why I grabbed -- the first one I got only comes up, because I got it right after it happened. It happened at I

believe 4:06. So the time I got it was probably to 4:15. My first thought when Dave called was I had to see. I called the gas control and send me what you got; I need to see what happened up there.

Q. Okay. So this next section we're going to talk about -- I don't want you to take offense to it, please don't. We just discovered something and I want to know your opinion about it.

A. Um-hum.

Q. We know that the sensor data does not get included in the work order. The work order that these guys are doing, which Louie did, and I looked at the work order, I looked at the -- we talked to the people that did the work. We don't have any issues with any of that, the way that was -- I mean, specifically, I don't. I don't know about my peers, but I thought the system worked. You had a great way to manage these work orders. You have paint by number set kind of work order, where it says this is number one, this is number one on the list. This is number two, this is number two on the list. Very nicely done. Safety precautions throughout, written up, well done, I thought.

The part that we discovered was that the sensor data, the sensor line data --

A. You're talking transducer, the ERXs?

Q. Right.

A. Okay.

Q. That information is not part of that package when they built

that. So the crew doing the work had no idea that this was going to cause this issue. I mean, it was obvious, right? So had they had that in their work package that said if this gets cut here it's going to cause this -- and so what I was wondering, in your career here -- and we were talking about this with the last witness. The people, new people come in, they don't want to do the same things the guy before him did as far as exactly how a work package gets put together. But in your career do you know whether or not sensor data has ever been included on work orders?

A. No. And it really wouldn't be applicable. To send -- to give a guy, the street crew or whatever, the data, it's just going to tell them there's a telemeter site or a ERX somewhere near the site. It's going to tell you what the pressure was or whatever, and that's what you're talking about, the data from that, to give it to them?

Q. Yeah. But --

MR. TOBIN: Are you talking about the control lines?

MR. EVANS: The control lines, yeah.

MR. CROKE: Oh, the control lines.

BY MR. EVANS:

Q. The control lines.

A. Yeah, these control lines were a half mile from where they were.

Q. Right. But the fact that these guys were working in this system and the control -- the knowledge of the control lines were

not in the work package, that that --
A. The control line should have been moved to the other main when they moved all the services over.
MS. HALLIDAY: It's that job packet that it should have been in.
MR. CROKE: Right or wrong, me saying it, that's what should have happened.
BY MR. EVANS:
Q. Okay. But I don't understand why there wouldn't be some sort of a briefing or some sort of a analysis done on a job to make sure that the sensing lines --
A. Can I speak to my lawyer for a minute? I want to ask him a question?
Q. Okay. You can go outside.
A. Thank you.
(Off the record.)
(On the record.)
BY MR. EVANS:
Q. So one of the things that -- you know, and I read this piece here, right, and we talk about that we want to prevent accidents like this happening --
A. I understand.
Q. -- from other places. It's not to --
A. I understand.
Q. It's not that we are trying to pinpoint you folks. We hope

we walk away from here and that we can tell the United States that we found something here, that this could happen in your company, we need you to be aware of this. That's the kind of thing that we're trying to get across, and we're not trying to focus on any company when we kind of come up with these questions because we're always, we're -- we are always thinking about is there another company that may have this?

A. That's what we think about, or I think about.

Q. Yeah. And that's where we're at right now. So I guess the question is, is there some sort of a way that you see with the way you do your work packages, are there modifications you could make to keep this from happening?

A. Do I have a thought on a modification we could make to keep this from happening?

Q. Yes.

A. That's the question?

Q. Yes.

A. Yeah. Yeah, putting another person at the stations located in the vicinity of the work when they're doing the cut or they're doing the upright or they're doing the tie-over. Put a gauge in the station, put a curb key in the critical valve. Phone conversation, radio in the old days, we're about the make the cut, we're cutting it; oh crap, run over shut the valve, done. Plain and simple.

Q. Thank you.

A. That's what -- okay, just so --
Q. That's --
A. I've been around a long, long time, you know.
Q. Yeah. That's perfect. Thank you. Thank you, I appreciate that. Okay. That's all my questions for now.
A. Okay.
MR. WALLACE: Richard Wallace speaking, and I don't have any questions.
BY MR. LEMMERMAN:
Q. Darren Lemmerman. I just -- I think it's a simple one question but we'll see what happens. You were out there on site and you seen how far these control lines are from the valve box. Is that a standard practice to be that far away or are you familiar with more similar to that?
A. The control line from the pit?
Q. Yeah. These were like 34 to 38 feet away.
A. I'm a stickler. The control line should be on the biggest pipe. Put the control line -- if you got a 4-inch feed coming out of a pit, you put a control line on a 4-inch feed, you're going to read a much higher pressure than what's really going in the main. On the coldest days of the year, you're going to starve your main and try to figure out what's going on here. We got a 12-inch main, we can't get the gas into it. Your control line should always be on the biggest pipe on the system, which means sometimes you have to go 20 feet out of a station into the -- you know, for

the control line.

So -- and that's, I've been -- I've built a lot of stations with the company. I'm involved in all the constructions of new stations and I argue wholeheartedly to have full 2-inch control lines brought into every station off the main instead of putting them on the leg dropping into the ground, which might be one or two sizes smaller, so -- yeah, definitely they sometimes have to be a little farther way, 20 feet, 25 feet.

MR. LEMMERMAN: Okay, thanks. Only question I had.

BY MS. MOTLEY:

Q. Angela Motley. I'd like to stay with the subject around construction.

A. All right. I'm a little hard of hearing, so --

Q. Regarding construction. When someone calls in a Dig Safe ticket and it indicates that they would be digging near your facilities, what do you do?

A. I don't get involved in Dig Safe tickets.

Q. So at your regulator stations, do you have a yellow decal on --

A. Yes.

Q. -- which states --

A. Yes. I have a -- it wasn't mandated, but this year, I mean, I just -- I lucked out. It made me look really good. I had a yellow stencil --

Q. (Indiscernible)

A. I had a yellow stencil about this big made, and I gave them -- not one. I had stencils made for all the areas, aluminum stencils. And then the second stencil that they cut out of that first one to make the circle, it's got the 800-number, call Columbia Gas if digging within 25 feet of the station, and that's painted on the door of every single station in Massachusetts right now.

Three months later, the compliance people came and said we want to start marking the stations. I said, we're well underway and we'll be done by the end of the compliance season this year; and it's all done. Every station in the state is -- it's got a yellow circle this big on every hatch lid; every pole regulator's got a yellow long decal put on it. So everything is well marked. You must have noticed that when you were out there.

Q. I did (indiscernible), yeah.

A. I appreciate that. Critical valves, I had stencils made for the critical valves. We do a yellow slash on the curb, you know, probably a foot wide. And then there's a black CV on the side of the curb, top of the curb, and we mark them on the box itself instead of -- you know how the streets are all marked up now, Dig Safe? Ours are very distinct. They stand out so a crew coming out spots CV, pop a cover, there's a tube in there with a number, and they know they're on the right valve right away. And also also dig around, do a lot of valves. We did that this year, too. And that's every critical valve in the state. Every critical

valve we control. There's a few in Brockton -- Springfield where the street department controls them.

Q. Can you tell us when someone is digging within 25 feet of the regulator station, what do you do, or what is your --

A. When they call us, we have somebody stand by until the excavation's done. We have to be there until the excavation is done and then, you know, we're free to go.

The city is our worst culprits. Most contractors now when they see, you know, the tags we have on there, they call us. Our crews in the area, if they're driving by and they see the city working there, they call us; we send somebody out right away. So, I mean, we do respond but we can't -- not everybody calls when they dig, you know.

Q. So you would have a crew standing by --

A. I always send a guy out right there. He's got a curb key on the critical valve and he stays there while the excavation's going on. That way if something happens he just turns it, you know.

Q. Okay. So in the case of the main installation in 2016 around the regulator station area --

A. That was 2015.

Q. '15. So that's prior to your --

A. 2015, the control lines were put on those -- clamped on the cast iron main. The plastic main itself, I don't know the exact date of that, so -- but 2015 was the control lines were moved.

Q. So during the work for the installation of the plastic, new

plastic main, you would not have had someone present during --
A. When they were going underneath the control lines we would have. A mile away, no, when they're laying main with no gas in it. But when they were going near the station, yes, definitely would have somebody there.
Q. Do you know if that actually happened?
A. No, no. Definitely -- it definitely did not happen, and you can bring my guys in and they'll you it didn't happen. I've got a couple very passionate guys who work up here. I heard, I heard all about it really loudly, you know, if it's happened.
Q. During the development of the work packet does your group have any involvement in --
A. Frequently no. Is that a good one?
Q. (Indiscernible).
UNIDENTIFIED SPEAKER: I got to remember that one.
MR. CROKE: It was just the opposite.
No -- if there's a big project going, yes. If there's -- a lot of the construction now, no, as best I can say.
BY MS. MOTLEY:
Q. Okay. This question is just regarding the shut down of the, or the isolation of the low pressure area. I was told that crews were sent out to the regulator station to shut the valves.
A. No --
Q. Were any of your --
A. No, they didn't even tell us. They just -- we were out

verifying lock up of regs, and all of a sudden the system was dead. You know, we didn't, and honestly, we're the M&R people.
Q. So can you tell me which regulator stations M&R crews actually went to -- you said you were shutting --
A. We went to all four teams the night of the incident, verified lock up of all regulators and made sure all -- after the critical valves were already all shut.
Q. Okay. This is after?
A. Right. And we verified -- before that, they were running around to the stations trying to find out what station was causing the problem, then all the -- it just stopped. You know, that's when everything was going to be -- being shut off or was shut off.
Q. We recently went to visit, on Friday, I -- you, I accompanied you --
A. Right.
Q. -- and the state fire marshal to 14 regulator stations. Can you first describe to me what your interpretation of those visits were about? Or the reason for those visits?
A. Say it --
Q. Why we were going to those sites. What were we doing at the sites?
A. You were documenting what you saw. You were photographing all the tags, monitor set points, regulator set points, paperwork for the stations, worksheets. We have worksheets, we have inventory cards, we have critical valve cards, and isometric

drawings in every station. So, I mean, realistically if you need information you get it right there for the surrounding area. But that's what -- I figured you were there just documenting everything.

Q. Okay.

A. Because we didn't do any lockups while you were there.

Q. Can you -- during our visit, you discussed some changes that are taking place at the regulator stations regarding springs, transducers --

A. Springs, yeah.

Q. Can you tell us a little bit about --

A. All right.

Q. -- the changes that are being made at the stations and when they started?

A. If you read the Columbia Gas standard 1750-010, I've always been a stickler for not exceeding MAOP. Everything is set slightly under MAOP to the point of being a pain in the butt.

Over the past year where our standard has changed as of January, I think it was 18th of 2018 -- I might be off by a day or two on that -- the new standard took effect and no regulator in the state of Massachusetts will be set above 14 inches water column, monitor or control.

That was put on me -- Frank Davis asked me to make the decision because I was the M&R leader for the state, and I wasn't comfortable with it because I didn't have any way to protect me

anymore, but I stuck to my guns on it and the state of Massachusetts is now -- all of our monitors and low pressure stations are 14 inches or less.

They're all actually everywhere but Lawrence. Lawrence isn't quite done with the standards or their compliance for the year. At the end of the compliance year, Lawrence will all be 13 inches maximum on their monitor. That gives them room for little dead man bouncing so we'll never exceed our MAOP, our 60-pound stations are 59; our 275s are 273; and our 500 pounders are 495.

I'm getting off track, aren't I?

Q. So currently you have --

A. Oh, okay, so the springs -- right.

Q. Can you just say, currently, you do have regulators set at the MAOP? Currently at --

A. Yes. Half of Lawrence is still set at 14 inches.

Q. Yes.

A. At the end of next month they'll be done with the compliance year, they'll be at 13.

Q. Okay.

A. But the other thing, the question with the springs was, when I took the job in Springfield as a lead M&R or regulator maintenance mechanic, and then I carried this over when I took the leadership for the state, I took every spring in western Massachusetts and I pulled them out. I put -- a white spring is 5 to 15 inches, a brown spring is 4 to 40 inches; 4 to 40 inches

can get you in a lot of trouble in a wrong situation when your MAOP is 14 inches. So I changed every spring out in my jurisdiction back then to white springs.

Brockton, when I took it, I changed every spring up there. And it was a lot education for the guys because they thought I was making a big mistake. And we came to terms on it. They did as I requested and they understand it now. We had some education, you know and some -- Lawrence, when I came here, it was the same thing. They did brown for so long they thought I might be making a mistake. And Lawrence is now probably 80 percent changed over. At the end of this compliance season, they will all be white springs. As they do a station, they pull out the brown and put the white in, so --

Q. Can you talk about the transducers, the changes you're making there?

A. Well, the transducers I can't -- I started making changes on transducer and I don't know if that'll go. The problem with a 28-inch transducer -- is it okay to continue with the question? Okay, the 28-inch transducer, 28-inch transducer is easily ruined and they're $1200 if you have to replace the circuit board in the transducer. When you're using your Druck or your hand pump, you can over extend it very easy. So I made the decision to start looking at 6-pound transducers because it gives you the accuracy on the inches water column range, but there's no chance of accidently damaging them.

So I've got 16 brand new ones sitting in the cellar in Lawrence waiting to go in with 6-pound transducers, which we just lost all of our 28-inch, you know, when this instance happened, so -- I was just looking at ways to make it so we would not have bad data or -- is that okay?

Q. That's fine. Thank you.

Can you talk about some of the changes you are making with the schematics that are actually or the isometrics that are at the plant?

A. Well the schematics --

Q. -- at the regulator station.

A. You're talking the isometric drawings and whatnot?

Q. And also the critical --

A. Right, well one thing that you identified and I've identified it also is there's no data on a drawing, on a lot of them. So we don't know when, you know, how current they were. We were lacking in an internal audit. We have stick drawings or, you know, regular standard schematics in the stations but our company standard calls for isometrics and we have isometrics for every station in the state now. They just got done reworking them all.

The critical valves, which ones are you talking about exactly? The isometrics or the critical valve?

Q. Both.

A. Both.

Q. You're making changes to both.

A. Say it again.
Q. There's the critical valve --
A. Right.
Q. -- and then there was the regulator station.
A. Correct.
Q. So there was two. So you're updating both?
A. We're updating all of them plus the inventory cards. WMS is our work management system. The guys in the field use Vantex for their day-to-day work but that ties over to WMS for our date. You know, our comments on the job, it's everything, you know the inventory cards we put in stations is what I'm working on now, I've been working on it.

We had an internal audit last year in Brockton. We corrected all the deficiencies in the cards there. Lawrence, I thought, was squared away but I didn't have any say up here. So when we went through the audit it was kind of painful for me. A lot of data was missing on the audit sheets.

So for the past 3 months we've been, 1 or 2 days a week I've been in Brockton with Gail Rooslet updating all the inventory cards. My guys take them out in the field, get me all the numbers and information and we go and put it in the computer, go through it again and make sure and it's a very tedious process because every time you look at it you find one more piece of data missing. So --
Q. What type of data is missing?

A. Huh? Well, the last one was the MOP, MAOP on low pressure. System planning or I think it was system planning, they didn't put the data in because they thought low pressure there's no MAOP. It's kind of like in the industry, some people say low pressure, there's no MAOP really on it. But we're a 14-inch system so the MOP should say 14-inch on top and the MAOP should say 14-inch.

All we had listed on the low pressure was 7-inch for the minimum pressure for the system. So that was identified in the (indiscernible) audit, which is an internal audit. We have -- they go around and I mean they fine-tooth comb everything.

So I sat down 2 weeks ago with engineering and we actually found the reason why that wasn't in there and the numbers. We had to into the spreadsheet, activate the numbers for every system in the state, and now the numbers are there.

So the new inventory cards are, they're picking them up today and bringing them back, they're ready to go into the stations, so.

Q. Can you speak about the critical valve drawings and diagrams that we, that there were a couple that had some, that were incorrect.

A. Right. And like I said, well, not to pass the buck but Lawrence, I just really took a handle on. What they had was a couple of the streets were in Vernon. So they would have measurements with the wrong street name. Most streets, the measurements were wrong, so. And that's what I'm saying, I mean that's where those markings come in handy that we put on, so, you

know, the drawings are being corrected.
Q. Can you also talk about, when we were out there we talked about the measurements to the control lines and identification of the control lines. Can you talk about --
A. The measurements of the control lines?
Q. In identification of them, where that information is contained or lack thereof.
A. Okay. Where we keep the information where the control lines are?
Q. Um-hum.
A. Except for the newest stations, there's no, there is no, there is no drawings of control lines. We frequently get asked to come out and help, you know, locators mark control lines. We can't really help them because we don't know where they are. Well, I mean a lot of the stations go back to the '50s and '60s. The new stations, we have the field engineers come out and draw them for us.
Q. Going back to the critical valve drawings, do you capture or does Columbia Gas capture the number of turns required to --
A. In Springfield, I believe, Springfield almost all of them. I won't say all because I can't see them all in my head right now. Brockton, I believe a good number do, I won't say all because I don't, I can't say 100 percent for sure. But Lawrence, I know they do not have the number of turns. And they will have the number of turns in the future. That's very important if you have

a broken stop on a ball valve. You could be spinning it on and off, on and off, on and off. You have no clue what you're doing and broke stops on ball valves before. You got to put a new pin in.

Q. When we visited the stations there were, I think there were three stations that actually had bypasses. And one, I guess my question is, one station the bypass valve was locked and there was another station where it didn't, it wasn't locked. Can you talk about Columbia Gas's policy regarding bypass valves and the security of those valves?

A. Bypass valves at our stations, we don't have any, the only place I can of in the whole state there's a bypass valve by the stations is on Springfield Street in Wolverhampton across from, or next to the Town Hall. That's got 275s, the 60 was a double blocking valve.

Other than that, the bypass valves out there were from one regulator station around or feeding into the -- you could bypass the regulator station by feeding to one regulator station or you could bypass it, and the monitor regulator station by feeding out of it right to the low pressure main. But there was not a connection going from medium pressure to low pressure. You would have been regulated either way. It was a four-valve cluster.

Q. So is there a policy regarding the locking of those bypass --

A. No.

Q. Okay. Is there a policy for, for the critical valves when

you take the top off the box, there's actually identifier.
A. Yeah, we have tubes with numbers.
Q. Right. Do you have that same identified --
A. On the bypass --
Q. -- on the bypass.
A. No. We have drawings for the bypass. We have drawings for the bypass.
Q. You have drawings for the bypasses, all of the, at the four, I think there were like three or four, at the --
A. There's usually a four-valve cluster. There's four valves with a T between it so you can flow up over or you can flow up over.
Q. So I believe when I went out there, the new, I think you called it isometrics --
A. Yeah.
Q. -- of the station did not show the bypass.
A. Right, and that's --
Q. And the --
A. That's a, that's a deficiency on the engineers, as far as, not the engineers but maybe it was, some of it wasn't clear enough when they explained to them what they wanted drawn. They should, to me they should have every valve in our premise or, our premise.
Q. What I can say about that, because when we, we were looking at all of the documents that were available. So Tom brought out a binder --

A. Right.
Q. -- which contained older schematics of the regulator station.
A. Yep, I had one.
Q. Which was good to have. I'm not sure, you know, how things have changed since then but when we looked at those documents we actually did see the bypass on those --
A. Well --
Q. -- drawings but not on the newer ones.
A. The old books, we call them our bibles. Mine I passed on to a guy who's got my truck now. There's two ways of looking at it. One, is I think they say we're not supposed to have them any more because they may not be current but when I was in the field I found sometimes they were more current than the new drawings, so --
Q. Well, that (indiscernible) --
A. We never threw them away, we kept them. You know, so if the drawing wasn't, didn't look right that you had, you could go to the book and compare it. Yeah, that's all --
Q. Yeah, because I just wanted to bring this up when we were out there, I asked, because it had the five-valve cluster, I believe, and I wanted the --
A. It's actually a four-valve cluster for the bypass and one is just so you can isolate one pit from the other.
Q. And I think in some cases a fifth valve was, the critical valve was nearby that cluster.

A. That's just on a couple of the confine spaces, yep.
Q. Right. So I wasn't sure, there was a label on the curbing that said CV that pointed but there were a lot of valve boxes in that particular area, so --
A. Right, but what they --
Q. I asked --
A. What they do --
Q. I asked and they were able to, they didn't see it on the new isometric of the plant but they, of the regulator station, but they were able to go to the bible --
A. Right.
Q. -- and they were able to identify --
A. Yeah. The CVs, if you go around Lawrence and look at CVs, CVs all have, in Springfield they, on top of the valve box they paint a black CV. Up here they were doing on the asphalt a yellow CV, yellow CV, yellow CV, yellow CV, four of them, so no matter which direction you walked in from, you know, there's a yellow CV painted on the street around the box, so.
Q. Can you talk about the, I think the term is ERX?
A. ERX.
Q. Can you, I believe when we went out to the stations there was some stations that did not have the ERX.
A. Right. If you look at 192 when you look at our company standard, I think it's just 192, I don't think we have standard on how many to have, low -- not low pressure, you only need one ERX

per system for a multi-feed.

On a single feed system you do not need an ERX, which to me doesn't make any sense. I would think the single feed system you would want something one and, you know, the multi-feed.

But if you look at 192, we more than saturate the area with ERXs. We had nine ERXs and two telemeters on 14 systems, 14 or something like that.

Q. I believe the ones that didn't have ERX there was something about water penetration.

A. Yeah but that, well, we do have some water in there, almost $3,000 each, so it --

Q. So I was asking basically of the 14 how many you had ERX and how many you didn't --

A. Right, well --

Q. -- and then --

A. By 192 only required one so, I mean, and that's the case, in Springfield I have, Springfield I think we've got 30, 32. Northampton has 11 or 12 for only 22 stations. And Lawrence has got a slew of them. So I mean, Brockton has got one on almost every low pressure station, too.

Q. So do you know how many out of the 14, I believe it was --

A. How many --

Q. ERXs that you have --

A. There's nine ERXs in the 14, nine ERXs and two telemeter stations. So that gives, let see 11.

MR. TOBIN: Listen to the question then answer.
MR. CROKE: Okay.
Q. Thank you. Just, can you talk about the ERX and how that information is downloaded?
A. In the winter, we download weekly. In the summer we download monthly.
Q. Okay.
A. And that's based --
Q. And that's just a laptop?
A. We take a laptop and a cable and download it to the laptop and then we send it off to the server so it's available to anybody at NiSource.
Q. Do you know if anyone reviews that information?
A. I use the information. If anybody else uses it -- I do get calls from engineering on how to access it. So, yes, I would say they do.
Q. So within the Lawrence area, you only have two individuals who perform annual inspections of the --
A. Yeah. There's only 62 stations, yeah.
Q. Two individuals?
A. Correct.
Q. And you're about to lose one of those gentlemen?
A. I'm losing one, and that will be -- another job will be replaced, yeah.
Q. This is my last question. Regarding the annual inspections,

can you tell me what information is captured during those visits?
A. On the visits?
Q. Yeah. What information would Tom capture, Tom's the one that --
A. What we capture on the work order?
Q. Work order --
A. Well, we have a work sheet in the station where he has found has left pressures on it, and what we did. Then on our Vantex, when they fill it out there's three pages there. The first page is comments for the action required. The next page you get into system pressure you found on the inlet, system pressure on the outlet, whether a major was done or a minor inspection was done, greenhouse gas leakage. The next page gets into the individual regulator. It could be a monitor control, and generally it's a monitor first, then a control. Then it has the as-found pressure, as-left pressure. I can't see the rest of it. Generally, we capture pretty much everything that we do while we're there.
Q. Okay.
A. The four regs, there's four more pages, you know, each one has got it's own page after that.
Q. Just one more. Have you had any issues at the 14 stations regarding maybe the monitor found to be operating or anything unusual at the station?
A. When you do your, a call for that or during compliance?
Q. When you visited the station, because I know you visited on

other occasions when that --

A. No, no. If a monitor -- in the winter, if you run a monitor you probably wouldn't see it. You would see at that station when did your download, you would know it for sure.

But in the summer time when the systems packed in, you would see it because gas control will call you and tell you to run it higher than they were, you know, the hour before, the day before, you're on the monitor.

Every year when you do your compliance work you have, occasionally will have one regulator that's going to lock up bubble tight. It will lock up but, you know, you're still letting some gas by, our standard is 100 percent lock up. So we tear it down, do a full internal, replace the tube or the boot or the seat and then lock them bubble tight.

But I can't think of, I don't think I've ever been called where a regulator was failed, you know, where we're having a issue. This is kind of unique for us.

MS. MOTLEY: Okay, thank you. That's it, I'm done.

MS. HALLIDAY: The two techs for the area --

MR. EVANS: Introduce yourself please.

BY MS. HALLIDAY:

Q. Oh, I'm sorry, this is Julie Halliday with PHMSA. So the two techs in the area that Steve and Tom --

A. Yes.

Q. If we went and asked them and said, you know, for this system

how many regulator stations feed it, do you think they could probably list it off their head?
A. Right off the top of their head. I had a 156 and I could tell you what every one did.
Q. Which system are you --
A. I knew more about my stations than pretty much anybody.
Q. Yeah, because they're working systems fighting each other. They're spending the whole winter keeping everything balanced.
A. Right. When you get a call for a low pressure or anything, we know right where to go and we know which station is the closest one to assist that one. We don't just run. It's, we, before you get there, you know exactly what you're doing, where you're going, and how to quickly, you know, give them back their pressure.
Q. Did, as this emergency was going on, did anyone call and say, you know, Tom, Steve, go shut the system -- I mean, they know, right, how to shut --
A. I --
Q. -- the system down like this?
A. I got a call from Dana telling them to shut the state -- the first call came through, shut the whole low pressure down. Well, the whole low pressure is everywhere.
So I called back to get clarification and then Dana said to, trying to think how to phrase it. It was basically rethink shutting the whole thing down. Don't shut off ones that you don't think have anything to do with it because it's kind of a large

request to shut the whole thing down. But before we could react on that, they already shut down, you know, the valley down here.
Q. I guess where in my mind I haven't quite figured out the timing as you guys were going to check lock off.
A. Before they shut down we were checking, to try to find what station was running.
Q. Right. So I guess, I wonder, so there's fires, there's explosions, it seemed like my guess is if I said to Steve or Tom what do you want to do, they'd probably run around and close the port.
A. They were off duty and they both took off in their own personal vehicles. Had Larry Guy (ph.) run back to the shop to get the company truck. And initially all they could do is stop at a station make sure it's not running and check the ERX.
Q. Yeah.
A. But the ERX data, they all said 37 inches down here. You know, they were already over extended. They reacted like, you know, somebody that owns the station would. They took it personal and they ran out, tried to find what station was running, but had a curb key, and Larry came out, brought the truck and then, you know, it was a more organized effort. But then shortly thereafter they shut the whole system down.
Q. So at any point, I guess, did, it sounds like it was Rob and Dana that were, you know, kind of making the decisions of what to go, did they ever call and say, hey, you know, what do you think

we should do?
A. No, no. I talked to Dana a couple times, you know, mostly it was for the shut down. Everybody was on edge. Rob, I never talked to. My phone was ringing off the hook, believe me, but no I didn't talk to Rob.
Q. Okay. At any point --
A. No.
Q. Did you just say, you know, let's just shut it down instead of people going around and checking the regs stations?
A. I can't make that decision. That's got to come above my pay grade, you know, to shut it down.
Q. Yeah. I mean did you --
A. If I went to a station and it was running, I would shut it down at that point because, I figure there's plenty of gas to, you know, support the rest of it. But for me to go out and tell my guys to arbitrarily shut it down, that's not my decision to make.
Q. At any, I mean, at any point when there's these decisions, did you ever just want to say shut the regulator stations down instead of -- it seemed like there was a lot of other things going on that --
A. Yeah. They were trying to stem the flow of gas. We didn't know it was -- the trend certainly didn't look like any regulator station. The trend looked like somebody opened a bypass and there was several construction projects going. That was the first focus, I think, was on what went on with the construction

projects.
Q. And was some of the thought going behind that to try and prevent shutting down the system?
A. No, because Dana's first thought was to tell me to shut the whole system down. And then the second one was, it was outside the area, don't, you know, so -- but before we reacted there was, him sent -- three crews going everywhere just shutting off all the critical valves.
Q. So critical valves, do you also, is the critical valve program under you?
A. Can you repeat that one more time?
Q. Is the critical valve program, is that under you?
A. Yes, in Lawrence, Brockton, Springfield we do only associated with our regulator stations, and Northampton.
Q. So can you describe your program? Do you guys have like a packet for each section with a map?
A. We get a Vantex order, it's annual, so 12 months not to exceed 15. The guys go out, they do the measurements on the valve. We mark the valve. They open it up, clean the box of debris, exercise the valve, quarter turn valve move a little, multi-turn valve you get a couple of swings. Take it out, verify the number of the valve on the tool, well you verify that first. Temperature check for gas before you open the box and when you, before you close the box.
Q. If I wanted to, so I'm looking at this section and I want to

know the extent of this safety section where the critical valves are, how would you do that?
A. To see where all the critical valves are?
Q. Right. You want to look at the system --
A. Yeah. Just call engineering for a map, you know, they've got a map with every critical valve in the city listed on it. So you can look at the streets in the area you're in --
Q. So they already have like jackets with printed version of the map or do they go to the GIS --
A. No. We have critical valve books.
Q. Books.
A. Yeah.
Q. Okay. And do those books have the addresses --
A. That's the book Angela was talking about, that's --
Q. Okay.
A. A critical valve book.
Q. Yeah.
A. It's got all the addresses, all the swing ties, all the valves.
Q. Does it, and does that have a map also that you can see the area?
A. No.
Q. Okay. Does it have all the addresses? Like if I want to get --
A. The book has the addresses, the location of the valves but

the thing --
Q. Not the valves, all the addresses of the residents that are in the map?
A. No. No, absolutely not. That's beyond the scope of M&R.
Q. Okay.
A. We've become very critical, or not critical, very, we know the location of all of our valves. A couple of years doing it, I mean, you still have your sheets, but you just drive to them like, you know, I mean you can have 200 valves, you know right where they are. The first year I did it --
Q. You started working with emergency response, right, that you shut off an area -- how do you identify who's in there? Are there people with --
A. That's engineer --
Q. -- special needs or --
A. That's engineering, that's --
Q. Okay. Engineering.
A. I know nothing about that.
Q. Okay.
A. At that point I just do what I'm told or I direct my guys to do what they're told.
Q. Are you guys involved in the, so any tie-ins, do those construction plans come for you to sign off?
A. No.
Q. No. It's not in the sign-off on, I'm looking at you, no.

A. Can I answer that? Are you asking us?
Q. No, I'm just, okay, that's fine. Do you guys write, we used to call them tie-in routines?
A. Can you say that one more time?
Q. Whenever there's a tie-in --
A. Yeah.
Q. -- being in pressure operations, we used to write tie-in routines, you know, I think what you had, yes. So on those do you have like a schematic where you're showing where the gauges are?
A. I don't get involved in those.
Q. Okay. You don't sign off on those?
A. If it's a project affecting my work, my area, my, you know, my stations. You know, if this work is going on at my station, I sign off, I approve it. I don't sign off a project going on down the street, I didn't know anything about it.
Q. Oh, no, okay.
A. Most projects I don't know much about. When it's directly affecting a station, I'm fully involved.
Q. Okay. So if there's tie-ins within the system, you guys aren't involved in that either.
A. Not generally.
Q. Okay. Even if they have to like control pressure --
A. If we're doing uprights, I'm fully involved. You know, we come out, we take care of the regs for the uprights. For doing a main, is it -- no.

Q. Okay. Do you feel like you have adequate resources in your group to stay in compliance and to do this type of work to --
A. Yeah.
Q. -- bring your --
A. Yeah. This year, compliance wise --
Q. -- system up to standard?
A. -- for M&R, we knocked it off in April and we were fully done by August when I first took it. It used to take, my first year I was shorthanded and it took me from March until January, December 29th, no, New Year's Eve.
Q. Okay.
MR. TOBIN: Wait for the question and answer the question.
MS. HALLIDAY: Thank you. That's all the questions.
MR. NELSON: Dave Nelson, I have no questions.
BY MR. EVANS:
Q. I just have a few follow-ups. Are there some of your low pressure systems -- this is Roger Evans. Are there some of the low pressure systems where you do have relief valves?
A. No.
Q. That's not a method you use in this --
A. No.
Q. -- in your network?
A. No.
Q. Okay. Doc request, I would like to get the isometric for the station that we had the problem with.

A. Winthrop.
Q. Winthrop, yeah. Okay. Is there a standard that says the maximum control wire lengths you can have?
A. Say that again.
Q. Is there a maximum length that you can run in control wire for your system? Or is it called sensing wire, it control --
MR. TOBIN: Pipe or wire.
Q. Control pipe for your --
A. For master control pit?
Q. No. Is there a maximum length --
A. On, not that I know of, no.
Q. Okay.
A. No. As long as full 2-inch, 2-inch, a full tab 2-inch control line is supposed to negate any pressure drop on a static control line, so.
Q. Okay.
A. I may be wrong in that but I don't think so.
Q. Okay. Yesterday we spoke to the SCADA people and we found out that 4:04 they had a problem with high then they had, 4:05 they had a high-high, 4:06 they called, okay. When they called, did you folks already know of the problem?
A. I got a call from Dave so I did not know of the problem. My guys were already off duty. My guys were --
Q. I'm just curious.
MR. TOBIN: My I just interrupt, there was no high, there was

just a high-high.
Q. That's true.
A. Yeah, it went pretty fast.
Q. Well it went from a --
MR. TOBIN: Let's skip the high.
Q. Skip the high, that's right, thank you.
MR. TOBIN: You said it makes a difference, I don't know, but --
Q. No, it doesn't. The high-high is what this --
A. Move fast.
Q. Okay. Did your work today require Optimain? Do you use Optimain?
A. I'm not familiar with it.
MR. EVANS: Okay. That's all I have.
BY MR. WALLACE:
Q. Richard Wallace. I have a couple of short follow-up questions. You had mentioned earlier that the set point standards had changed from one particular set point to a new set point.
A. With the standard you're talking about?
Q. Yeah, I'm talking --
A. Yeah, 1750-010 has got an addendum, not an addendum, it's got a new one took effect January of this year and no regulator on a low pressure system will be set at pressure exceeding 14 inches water column.
Q. Was that because there was some that were set above that at

some point?
A. Not that I know of. No, what happened, okay, ask me the question again so I can answer it properly.
Q. Let me clarify. You had a change in your set points on your district regulator stations.
A. Correct.
Q. And we keep the conversation to the low pressure ones. Am I correct in saying that it was no regulator, and would that include both the worker and the monitor that was not to be set above --
A. The monitor cannot be set above 14 inches water column on a low pressure system. The reason for that is is when I took the job I, a lot of times I was asked in a bad, you know, cold winter, for whatever reason to get the 14 on the control and set the monitor where I have to.

And that meant I had to set regulators, if a control regulator fails, I'm only exceeding the MAOP and I was very passionate about not exceeding the MAOP. A lot of people in the industry think they're allowed to just go 10 percent over. And I don't think you are.
Q. So is it safe to say that you were chasing the demand with your worker and monitor simultaneously?
A. No, no. The monitor is still wide open. With a top entry regulator --
Q. Okay. So you have a little bit of the non-working monitors.
A. Exactly, exactly. Looking at the monitor --

Q. So your monitor, you were raising your monitor pressure, which would allow your worker to go above the MAOP, is that what you're saying?
A. We -- okay, how do I phrase this? In a worst case scenario, cold, cold day, high flow, low inlet, worst scenario to touch a regulator, if you set a monitor, you raise your monitor setting on a situation like that, then you raise your control, and you can get in a lot of trouble the next day when the temperature moderates because you don't know where you're set. So I --
Q. Okay, I understand now. So how did that, on your SCADA system, if you were doing that, would that affect, did you have to raise your high and your high-high when you do that?
A. We would call gas control when they would do that and they would have them give a temporary on the SCADA.
Q. And what was the lag time between you having to raise that and them raising the high-high, or was it the inverse? They raise the high-high and then you raised your monitors?
A. They would raise the high-high.
Q. They would raise the high-high.
A. Right. But, I will say right now, one time in my career I did it.
Q. So when you --
A. On monitor.
Q. When you requested a change to the high-high, how long of a time did that take?

A. Well, that request came from, you know, the engineer in the area. I would call them, they would call gas control, and put the official request in.
Q. And from the official request time to the time that you were able to raise your regulators above the previous high-high, what was the average time on that?
A. No clue. No clue.
Q. So there was some period of time where --
A. Correct.
Q. -- that you would be able to do so, okay.
A. But now no regulator is set above MAOP in the state of Massachusetts.
Q. I understand.
A. Monitor or control.
Q. And that's all high and low pressure, both?
A. Exactly.
Q. Understood. Just a question on your bypass valves.
[Discussion redacted discussion.]
MR. TOBIN: Could we go off the record just a second?
(Off the record.)
(On the record.)
MR. EVANS: We're back on the record. To the transcription person, please redact everything in the transcript from the word -- the first reference of bypass that was stated just before we went off record.

MR. WALLACE: I'm all set, thank you.

BY MR. LEMMERMAN:

Q. Darren Lemmerman. I want to get some, just a little bit of confirmation here. You said there was nine stations that have ERXs.

A. Correct.

Q. Do any of those stations have a 6-pound transducer on it?

A. One, at Essex Street.

Q. One does.

A. Yeah. At Essex in Andover. That's in Andover, in the town.

MR. TOBIN: Oh Essex in Andover.

Q. Moving forward, I know Columbia is making all kinds of new changes in concepts. Are you aware of any use of relief devices for future plans, any systems per discussion?

A. I'm not aware of any, no.

Q. Okay. Let's talk about regulator performance. What was the make and model in Winthrop station?

A. Grove or RED-Q are the same companies, Grove or RED-Q 900TE, 3-inch with Mooney Series 20L pilots, white springs 5 to 15 inches.

Q. Okay. So speaking of regulator performance, what is it set at at the day of the event?

A. I believe, some of, there are stations up here, the day of the event I believe that was a 10-inch there. The day, they're not all standard up here yet.

Q. Okay. So if a, at what pressure would a sensing line have to sense a main at a decreased pressure for the Mooney to start feeding gas?
A. Probably a half inch or less. They're very, very, they are very sensitive.
Q. Right. So 9-1/2 inches, 9-3/4, something around there?
A. Yeah. They did have very, very old deadband; they're very reactive.
Q. At what pressure would it have to be at to be a wide open regulator situation?
A. To be a wide open?
Q. Full (indiscernible).
A. I don't think I've ever seen except for a monitor sitting behind a control. A monitor sitting behind a control has the same pressure as the inlet, except under high-high flow with minimum inlet then you'll see a little difference, a couple of pounds, you know, at the inlet. But the outlet can be wide open, zero.
Q. Okay.
A. Because it's going to try to maintain what it's supposed to maintain.
Q. You know, be a pilot assisted a issue.
A. I've never had to do that, so.
Q. Yeah. I'm just trying to get a feel for how fast they would move to --
A. It's going to, it's going to react as soon as you drop that

half inch or so, it's going to start opening. And the more it drops, the more it's going to open. And it's going to try to maintain 9, 10 inches forever, you know, whatever you set it at it's going to, it doesn't know any better.

Q. Right. So when that main was isolated, it only had to drop down maybe a quarter inch of water column for it to start feeding into the district --

A. As soon as that control line got cut those regs went wide open because there was, no back pressure on the (indiscernible) the diaphragm, so it's just going wide open. The springs are not going to have any effect, diaphragm is just, it's just wide open.

MR. LEMMERMAN: Okay.

BY MS. MOTLEY:

Q. Angela Motley. Just one question. When you heard of the incident, you said that you thought that maybe a bypass was open. Can you just talk about what you meant by that?

A. When I heard about the incident -- not when Dave called me. When Dave called me, my heart was in my mouth and I was full-tail to Lawrence.

As I started driving, we're not supposed to be on the phone but I snuck a phone quick to call the gas control and asked them to please send me a trend as soon as possible, which was sent within a minute. I pulled across the rumble strip, not very safely, bumped to a stop, and I looked at the trend.

The trend happened in under 10 minutes and went from 10

inches to maxed out the transducer. That was miles away. So that was like super fast, with that many miles of pipe, I didn't think it was us. I thought it was a valve, I thought a valve got opened up. So I figured a construction crew worked the valve and something, a crossover valve from one system to another, it was so abrupt, I had never seen anything like that. But I knew it was not the normal function of a regulator.

BY MS. HALLIDAY:

Q. Sorry, it's Julie Halliday. What were the problems you guys had with the slam shuts?

A. Slam shuts are not a good way to keep customers happy. When, if you're, spring changes, if the slam shut, the diaphragm gets --

Q. Have you had instances where they (indiscernible) --

A. They slam shut.

Q. -- and you did lose customers?

A. In March --

MR. TOBIN: Wait for the whole question.

MR. CROKE: Okay.

MR. TOBIN: And then you can give a whole answer to her.

Q. In the low pressure systems, did you have any instances where those slam shuts did end up losing customers?

A. Yeah. March, middle of March we had a day that went to 80 degrees. I was in Columbus, Ohio when we had that day, that was in 2012.

And I came back, the temperature dropped off real fast and

the south side of Longmeadow had an issue with low pressure. And we went there, I went to the closest station and that slam shut was shut. We lost seven slam shuts that day on the 85-degree day.

The charts showed the data, it was a slow drift up, went right off the chart. The charts were a little damp from condensate so when the pin came back around after a slam shut shut it, it turned into a rosebud. So but yeah, I saw seven of them shut at one time, which is not a good way to run a system either.

Q. Um-hum. And maybe you covered this, I was a little confused. On the as-built drawing for the sensing lines of the regulator station that is the culprit, was -- so did field engineering do incorrect field notes or -- and so, would the person in your position have been the one to approve where those sensing lines went? Or is that engineering?

A. I was not here in 2015, in either of these positions -- in this --

Q. Right.

A. -- position or for the whole state. Back when I was an M&R tech in the field, I think I would have, as tech been brought in and told what was going on, would have been fully involved in the project, not being -- stop oh.

MR. TOBIN: Listen to the question and answer the question.

MR. CROKE: That being said, back then I used to get called to a lot of jobs to stand by with a gauge and my curb key in the box.

MS. HALLIDAY: Okay, thank you.
MR. NELSON: Dave Nelson. I have no questions.
BY MR. EVANS:
Q. Okay. My last question --
A. You keep saying that.
Q. Thank you for your patience, by the way.
A. All right.
Q. You know, when we first started talking, I just would like to hear this one more time. When you said, we were talking about ways you could maybe perhaps prevent something like this in the future and you said, well having someone when the valves going to be closed to be at the regulator and seeing what's going on. Did I have, do I have that right?
A. You have it exactly right. If you have, we have the ability to stop things fast.
Q. Okay. So even though when they close this -- now that's, that was my question, but my follow-up to that statement though was, when I say, do I have this right, so even with this, with this had someone been at the regulator and they closed the valve, they would have known instantaneous to take action --
A. If some --
Q. -- to stop that, to stop, to put that valve back in its normal position?
A. If somebody was at the regulator, the problem didn't happened with the valve, the problem happened when they purged the main

valve. They took the pressure off the main, went to zero. If somebody was at the regulator station, they would have seen their gauge and they would have had a curb key in the box. When the problem happened, they would just walk over -- they would yell at the guy on the phone, hey, you just, you know, then they shut it off, it would be done.

Q. But even in this case it would, the timing would have been sufficient for them to do that?

A. Without a doubt.

Q. Okay.

A. It would be almost -- in the past, sometimes, don't know how to phrase it any better, we were involved. We put our gauge, hang it on the door of the pit or hang it on the fence of an above-ground station, we have our curb key in the box and we're in communications with the crew doing the tie-over, the upright, whatever.

If something doesn't happen right, we have the ability to shut it down, that being a multi-feed system, it would just shut it right off, we don't think twice.

Q. Okay. So in the past was that, was that in practice or was that just occasional.

A. Frequently.

Q. Frequently.

A. Frequently. I can't say every job because I wasn't, I wouldn't know if I was not involved occasionally.

Q. Okay. Okay, thanks so much appreciate it.

MR. LEMMERMAN: Darren Lemmerman, no further questions.

MR. WALLACE: Richard Wallace, no further questions.

MS. MOTLEY: Angela Motley, no further questions.

MS. HALLIDAY: Julie Halliday, no further questions.

BY MR. NELSON:

Q. I actually do have a question. Dave Nelson. So when you say, in the past you would shut off, if the pressure went down, would that be the case if the job was a quarter mile, half mile away?

A. We'll bring up 2014, my four guys, I had two street guys, two of my guys, (indiscernible) and myself, there was only two of us. We had four gauges set up on four pits. When they're chopping the high pressure main, if anything went wrong we were shutting everything down.

Q. Is it a, was it a special case?

A. No, no. And like I said, frequently, not, I don't know of every time.

MR. NELSON: Dave Nelson, no further questions.

MR. EVANS: We are finished. Thank you so much --

MR. CROKE: It's been a pleasure.

MR. EVANS: -- for the time.

(Whereupon, the interview was concluded.)

CERTIFICATE

This is to certify that the attached proceeding before the

NATIONAL TRANSPORTATION SAFETY BOARD

IN THE MATTER OF:	MERRIMACK VALLEY RESIDENTIAL GAS FIRES AND EXPLOSIONS SEPTEMBER 13, 2018 Interview of Jeffery Croke
ACCIDENT NUMBER:	PLD18MR003
PLACE:	Lawrence, Massachusetts
DATE:	September 18, 2018

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.

Joni Hodge
Transcriber