UNITED STATES OF AMERICA

NATIONAL TRANSPORTATION SAFETY BOARD

Investigation of:	*	
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ENBRIDGE OIL SPILL	*	Docket No.: DCA-10-MP-007
MARSHALL, MICHIGAN	*	
	*	

Interview of: ROBERT KITCHEN and
GORDY WALGREN

Conference Room
Holiday Inn Express
630 East Chicago Street
Coldwater, Michigan

Friday,
July 30, 2010

The above-captioned matter convened, pursuant to notice, at 11:38 a.m.

BEFORE: KARL GUNTHER
Accident Investigator

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I N D E X

I N T E R V I E W

(11:38 a.m.)

MR. GUNTHER: I'm Karl Gunther from National Transportation Safety Board. We are investigating an oil spill that occurred on July 26, 2010 in Marshall, Michigan. I'd like you to each give your name, address, and phone number for the record.

MR. KITCHEN: My name is Robert Kitchen. My work address is 119 North 25th Street East in Superior, Wisconsin, 54880. Phone number is (715) 394-1510.

MR. JOHNSON: Gordy?

MR. WALGREN: Okay. Gordy Walgren. My work address is 119 North 25th Street East, Superior, Wisconsin 54880. Phone number is (715) 394-1489.

MR. JOHNSON: And you're both with Enbridge Energy?

MR. WALGREN: That is correct.

INTERVIEW OF ROBERT KITCHEN AND GORDY WALGREN

MR. GUNTHER: I'd like each of you to give me your job title.

MR. KITCHEN: For myself, Rob, I'm a control systems engineer.

MR. WALGREN: And for me, Gordy, I am a senior control systems tech.

MR. GUNTHER: What I'd like you to do is go through the actions that you took during the time of the oil spill. So you

just start and what happened. Just give me a narrative.

MR. KITCHEN: For Gordy it's probably -- go ahead, Gordy, you can start.

MR. WALGREN: Yeah. I've been out of the office since prior to the incident, and have just caught little bits and pieces on the news.

MR. JOHNSON: Okay, Gordy. And Rob?

MR. KITCHEN: For me, I wasn't involved with any immediate response to the incident. After the fact, I obtained chart recorder data and provided that to our control center and compliance department. That's really been about the extent of my involvement at this point.

MR. GUNTHER: Okay. Could you give me your formal training?

MR. KITCHEN: Well, I'm an electrical engineer by degree. I've been a control systems engineer for nine years in industry, and then have taken various training courses through Enbridge that are pipeline specific maybe of note, process control and, you know, various safety and operational courses.

MR. JOHNSON: And how many years have you been with Enbridge, Rob?

MR. KITCHEN: Just short of four years.

MR. JOHNSON: Okay.

MR. GUNTHER: Gordy?

MR. JOHNSON: Gordy?

MR. WALGREN: I have a bachelor of science and math of computer science technician. I've been a control systems tech since 2003. I've been with Enbridge for 27 years.

MR. GUNTHER: Okay.

MR. JOHNSON: Okay. Now, basically, the basics are behind us.

And Brian is going to come on now and he's looking right now at which chart?

MR. PIERZINA: Rob, I've pulled up a screenshot of Menden station, 7-26-10_1.png (ph.). It looks it's a -- so it's got a display of suction case and discharge pressures from July 26 from 00:50 hours to 02:30 hours.

Do you have that file up and available, both you and Gordy?

MR. KITCHEN: Yes, we do. Gordy does not have these files available where he's at.

MR. PIERZINA: Okay.

MR. KITCHEN: But, yes, I do have that. I'm looking at it now.

MR. PIERZINA: So we have a red, green, and blue charts on the graph or on this screenshot.

Can you describe what the significance of the colors on the chart is?

MR. KITCHEN: Gordy, correct me if I'm wrong here. But I believe red is discharge pressure, green is suction pressure,

and blue is case pressure.

MR. PIERZINA: Yeah. And I have Vince Kolbuck right by my side looking at the same chart that I'm looking at.

So, Vince, step in and maybe --

MR. KOLBUCK: Okay. To help understand the working, this is typical of all of our stations. So incoming into the station -- louder? Okay. The strategy of pressure control at all of our stations is typical, in fact, standardized. There's incoming pressure, which is suction.

MR. PIERZINA: That's the --

MR. KOLBUCK: What the intent of that is, is so that you don't starve the pump units. It's looking for minimum suction pressures. It also has other safety features built into the suction pressure, and I can let the, you know, Rob speak to more of that, but the working of it is to monitor suction pressure into the station.

MR. PIERZINA: Right. Okay.

MR. KOLBUCK: The next step as it flows through the station -- oh, I have to explain one other element.

Every station has a control valve, and the control valve throttles the station so that the line is balanced for however hundred miles the pipeline is long. So in sequence, the oil comes in at a suction pressure. It goes through the pumps, and the control valve then throttles the flow to match the line rate. So suction, mainline pump, I mean, case means what pressure do the

pumps see internally? We can't overpressure those, and then this pressure is taken just downstream of the control valve.

MR. PIERZINA: Okay, so --

MR. KOLBUCK: So its basic operation, suction, what does the pump see, and after the control valve.

MR. PIERZINA: Okay. And so the green line is the suction pressure, the blue line is the case pressure, and the red line is the discharge pressure?

MR. KOLBUCK: Correct. And one other thing, just -- I'm sure you guys are somewhat aware with liquid hydraulics. Basically, a pump station elevates the pressure to some point, and then it literally drops off, and then at some point you've got to re-boost it.

MR. PIERZINA: Exactly.

MR. KOLBUCK: So that's why the suction's always dramatically lower than the discharge.

MR. PIERZINA: Yep. Yeah, we understand that. So there's friction, pressure losses due to friction along the pipe due to flow, and the pressure gradually drops until it gets to the next pump station where it's boosted up and so on until it gets to its path.

So we're looking at this screenshot for Menden station for shortly after midnight, pipeline time, which is three hours earlier than local time. So we're essentially looking at a chart that would start from 3:50 in the morning local time on July 26th,

and we're seeing a discharge pressure that is about 100 PSIG up until about 1:00 in the morning.

And, Vince, help me out, I believe this would be a static line pressure? Is that what I'm seeing?

MR. KOLBUCK: Absolutely. According to control center the pipeline shutdown at this point.

MR. PIERZINA: And as we move on shortly after 1:00 a.m. pipeline time, we're seeing a slight fluctuation that discharge pressure, but, you know, it looks like just maybe 10 to 20 PSIG plus or minus. And then at shortly after 1:10 a.m., pipeline time, we're seeing an increase in discharge pressure to just under 200 PSIG.

Can you explain what's happening in this ten-minute period here?

MR. KOLBUCK: Imagine that the startup is not instantaneous.

MR. PIERZINA: Okay.

MR. KOLBUCK: Powers, this command is sent to the station to begin opening valves and going through its sequencing. And subsequently I'd imagine right at this point somewhere here at 1:10 -- so this would be the valves in transit type scenario, and at this point, I imagine power is sent to the pumps.

MR. PIERZINA: All right. So the pumps are starting, or a pump maybe at Menden is starting just after 1:10 a.m., and the pressure's boosting up approximately 100 PSIG.

MR. KOLBUCK: And we would have to confirm, it's likely that so that they don't shock the system, this might mean -- and this is something I can't clarify, I'd have to ask control center -- is that one unit started and then possibly a second here; that would make a lot of sense. They bring it on in a gradual fashion.

There's four units at these stations typically, and so they bring one on, it stabilizes. They bring on the next --

MR. PIERZINA: All right. So we're seeing something kind of like an EKG where one unit starts and then we're gradually, we're having the discharge pressure is boosting up to, you know, 200, maybe 250 PSIG, and we have the specific values on a different spreadsheet. And we have a fairly abrupt drop in pressure at, and it's tagged with a line, but it looks like about 1:26 a.m., pipeline time, where it dropped about 100 PSIG.

MR. KOLBUCK: And I would surmise that when they brought on the second unit in a very short duration, as the unit's starting, there is a fluctuation in pressure. As that big unit's putting, trying to startup and induce pressure, it's probably related to the startup of that unit.

MR. PIERZINA: Okay. And now we're at --

MR. KOLBUCK: So unit one, unit two --

MR. PIERZINA: We dropped and raised back up over a two-minute period, and then we have a gradual drop off. We have a tag at about 1:36 a.m., where the discharge pressure is sitting at about 225, just guessing visually on a scale.

Do we know why that line is there?

MR. KOLBUCK: Why, what they're doing in this period of time is the pipeline; they're trying to balance the entire system of pumps for the -- I guess this is a 300 mile segment? Something to that magnitude. So this is the period of time when they're systematically, and I believe this is true, manually tweaking each station so that they become in balance with each other. So the operator is having to just -- it's generally on, this station's being balanced with its partners on either side, so they're trying to find the natural balance for this given flow rate.

MR. PIERZINA: Right. Which is, correct me if I'm wrong, it's pretty much the function of the pressure control valve is throttling that --

MR. KOLBUCK: Yes.

MR. PIERZINA: -- to the level that the system wants to function.

MR. KOLBUCK: Right. These are not automated. To my knowledge, the line operator has to have the ability to manually manipulate that. So I understand, and this would be a point to check I guess, is that the operator is -- the line operator is manually manipulating that position.

And I don't know, Rob, can you tell by code or logic if that's true? I don't believe the control valve setting is an automated process. It may have limits, but I think the line operator sets it.

MR. KITCHEN: That's correct. The line operator has the ability to manipulate both a suction pressure set point and discharge pressure set point. I don't have any historical data to align the operator commands with the data we're looking at.

MR. KOLBUCK: So what they do for --

MR. JOHNSON: So maybe, so basically, and I think Brian will know this also, they drive with the set points. They change the set points and then the pressure control valve goes to the set points.

MR. KITCHEN: Correct.

MR. PIERZINA: So the control center inputs a value that they want the discharge pressure to be. The system manipulates the pressure control valve to maintain that set point, right?

MR. JOHNSON: Yes.

MR. PIERZINA: All right. So -- and then we're proceeding along at approximately 250 PSIG over a period of about 30 minutes say, more or less. And we get to a point at maybe 2:03 a.m., pipeline time, where we see a drop in the discharge pressure down to about that 80, 90, well -- 100 PSIG. It looks like it levels out a little, and we can check the actual values on the spreadsheet that we have. It looks like it's leveled out maybe 125 PSIG --

MR. KITCHEN: Excuse me, Brian, but you guys are cutting in and out a bit there.

MR. PIERZINA: Sorry, about that.

THE COURT REPORTER: Who was speaking then?
MR. JOHNSON: Rob.
MR. PIERZINA: That was Rob Kitchen. And I was thinking while I'm talking, and I usually get quieter when I do that.
MR. KITCHEN: That's fine.
MR. PIERZINA: All right. So we're seeing -- and essentially, Vince, correct me if I'm wrong, we're seeing perhaps a shutdown of the units at the Menden station from 2:03 a.m. to the end of the chart?
MR. KOLBUCK: Right. So what I surmise is they saw this radical drop in both suction and discharge and case pressures. It all went sort of instantaneously down. So the assumption is that's where they recognized the problem and shut it off. And when I say "shut it off," they would have cascade shutdown the entire pipeline system, not just that one station.
MR. PIERZINA: Okay. And would that have been a human command or a automated command by the system?
MR. KOLBUCK: Rob might correct me, but my knowledge is that they recognize and there's a button on the screen, so they have the simplicity of a single button stroke to shut it off.
MR. JOHNSON: I'm not sure that's correct, Vince.
MR. KOLBUCK: I am saying --
MR. PIERZINA: And we don't want to speculate very much, although we do want to try and get the best understanding --
MR. JOHNSON: Yeah, I think that. And I'm sure that

question was asked of the control center.

MR. PIERZINA: Yes, that's true.

MR. JOHNSON: My understanding, which we can go on, is they have to bring the line down gently. You can't just shut a station because it will cause a pressure wave, so they're bringing it all the way down. So, I mean, I don't think it's the one button. I think -- Rob or Gordy, I think we can do a cascade shutdown of a station from the control center with a button, but then within the PLC it brings them down. Rob, maybe --

MR. KITCHEN: Yeah, there's a couple of different scenarios that are possible for what we're looking at here, and a stop line command is possible, although rarely used.

More typical is stopping individual units. And like you mentioned, that's usually done in a cascading function where you stop units at a station, bring it, you know, slowing the line down piece-by-piece; and, also, there are cascade pressure shutdowns which can occur when high or low pressures are present.

THE COURT REPORTER: High what?

MR. PIERZINA: High or low pressures.

MR. KITCHEN: If it'd be high discharge or low suction would initiate a cascade shutdown for an individual station.

MR. PIERZINA: Okay, thanks. So -- and just for the record, you know, we're still looking at the Menden chart. And it was about 2:03 a.m., pipeline time, or 5:03 a.m., local time, that we see this event of a drop in suction case and discharge

pressures.

MR. JOHNSON: Pipeline time is Mountain Standard Time. Local time is Eastern Daylight Time. Three hours separate.

MR. PIERZINA: Three hours difference.

Okay, guys. I'm going to pull up another screenshot, and we can back to what we saw here, but it may help to pull up a Marshall screenshot for the same -- do I have one for the same time period, Rob?

MR. KITCHEN: For Marshall?

MR. PIERZINA: Correct.

MR. KITCHEN: There's one for Marshall that shows about a three-day span.

MR. PIERZINA: Okay.

MR. KITCHEN: And then there's another one. No, we don't have the same window of time for Marshall on a screenshot.

MR. PIERZINA: Okay.

MR. KITCHEN: It can be viewed on --

MR. PIERZINA: All right. I think I've -- okay.

So, Rob, I've pulled up the Marshall last three days file. So I've got, you know, Marshall suction case and discharge pressures on a broader scale going from July 23rd to July 26. So I think the equivalent area that we're, you know, in time that we're looking at is at the far right of that chart.

MR. KITCHEN: Right.

MR. PIERZINA: And I'm going to do my best to zoom in on

that part of it. So we've got, you know, three days of data that we can see with, you know, indicating functions along the line. I think we may want to get back to if anyone can explain some of the things that are going on prior to that, but we're going to zoom in to that same portion that we discussed at -- the phone's going to beep for a while but it will stop at some point. So we're --

MR. JOHNSON: While Brian's doing that, Rob, and/or Gordy, if we went to the station tomorrow, Marshall station I'm speaking to, would you be able to essentially walk us through this? We could go out with Brian Whittaker or Darrell Carter or someone and walk us through the charts onsite?

MR. KITCHEN: Yeah, there are, yeah, we can. If you're on the -- there's a PC at the station which has the software which has this data recorded, and we could pull up the charts at the site. And, yeah, I could potentially be available tomorrow if you just let me know what timeframe you'd be needing me. And I don’t know, Gordy, if you have any availability tomorrow, but I should be able to make myself available for you guys if you guys give me a little bit of notice.

MR. JOHNSON: And I guess for Gordy's standpoint, Gordy, if you and Rob are comfortable that Rob can do it on his own and, we're okay with that Gordy. I just don't -- I just -- I dialed you in today because of what you've done for us in the past.

MR. WALGREN: Yeah. Tomorrow is a travel day for me, so I will be driving most of the day.

MR. JOHNSON: Okay.

MR. WALGREN: So I would not be available.

MR. JOHNSON: So -- and actually, Brian, maybe why don't -- we can -- I find it hard to believe you're not going to want to do that tomorrow?

MR. PIERZINA: I'd like to say off the record I wasn't paying attention.

MR. JOHNSON: Rob says he can walk us through.

MR. PIERZINA: Okay.

MR. JOHNSON: At the station, or you can go on the station computer tomorrow and do this at Marshall.

MR. PIERZINA: Okay, yeah. I think, yeah, I think we want to do that. It may not be made --

Did we lose you guys?

MR. KITCHEN: Did you lose Gordy?

MR. JOHNSON: We lost Gordy.

MR. PIERZINA: We probably lost Gordy.

MR. JOHNSON: And you can cut Gordy off. I think at this point, Rob, you're doing a fine job, seriously.

MR. PIERZINA: Yeah, if you can make him go away.

MR. KITCHEN: He might try and call us back.

MR. JOHNSON: Just cut him off.

MR. PIERZINA: Rob, we're going to call you back if we need you, okay?

MR. KITCHEN: Yep. Okay, thanks.

MR. PIERZINA: Yep.
MR. GUNTHER: I think we can do fine with what we got here.
MR. PIERZINA: I know it'd be valuable maybe from your guys' perspective to have him interpret stuff, but let's --
MR. JOHNSON: Did we determine if the times -- did we ask him that? Remember, I said that --
MR. PIERZINA: It may not be exact. Maybe Vince said --
MR. KOLBUCK: All MST.
MR. JOHNSON: So they are now all dialed in? So at one time --
MR. PIERZINA: Wait, wait, wait, wait.
MR. JOHNSON: -- the Yokogawa times --
MR. PIERZINA: Are they synchronized --
MR. JOHNSON: Are they synchronized?
MR. KOLBUCK: They're all MST.
MR. JOHNSON: Synchronized? I'll call Rob and ask him, and --
MR. KOLBUCK: When you say synchronized, all I can say is they're all MST.
MR. JOHNSON: Keep doing this. I'll just do a walk-out and ask Rob.
MR. KOLBUCK: It doesn't matter where your system, if you're east, west, or different.
MR. PIERZINA: Yeah, you're always talking MST.

MR. KOLBUCK: Yeah.

MR. PIERZINA: And we're still on. Amy?

THE COURT REPORTER: Yes.

MR. KOLBUCK: And I want to explain in concept what I think I'm seeing here.

MR. PIERZINA: All right. That'd be good. We're -- all right, you guys.

MR. KOLBUCK: In concept, while you see, this is continuous line operation. It may look kind of --

MR. GUNTHER: This is the heart of it today right here.

MR. KOLBUCK: It may seem like it's kind of bouncing, but the logic I see here is we have power requirements. And our power demand, our power is cheaper at night, so we run at higher pressures and energy use at night.

So I think what you're seeing here is during the daytime lower flow rates, lower pressures, lower energy use, ramping up at night, throttling back down for daytime use. That would, I believe this represents daytime. This might mean that they needed to get a little bit more flow to the customer for a while but still not break their power demands. So I think that just in concept, low flow in the day, high flow at night to keep the power demands in check.

MR. PIERZINA: Right. And that's just an optimization function that --

MR. KOLBUCK: Yeah.

MR. PIERZINA: -- that control center and shipping people, you know --

MR. KOLBUCK: Our customers need so much oil. We deliver them what they need with an attempt to not use too much power.

MR. PIERZINA: Okay.

MR. GUNTHER: Let me ask you a question. Would this be typical of a planned shutdown?

MR. KOLBUCK: Yeah, this one here --

MR. GUNTHER: Where it drops low and then, you know.

MR. KOLBUCK: Very good question. I would actually have to defer, but this to me looks like that is a brief shutdown of some sort.

MR. GUNTHER: Yeah, for a shutdown.

MR. KOLBUCK: I don’t know why, but it sure does look like that.

MR. PIERZINA: And just for the record, we are looking at a screenshot of the Marshall pumping station on July 24th from maybe between 12:00 to 16:00 hours, Mountain Standard Time, where we see a drop in suction pressure.

MR. KOLBUCK: That's discharge.

MR. PIERZINA: Or I'm sorry. Discharge pressure. Actually in a couple of different stages, and at 16:00, MST, the discharge pressure at the Marshall station increases back up, and the line is apparently operating again.

MR. KOLBUCK: And, again, for awareness, and I can't speak to the specific thing that happened, but perhaps this gentle curvature of these lines at this time would probably be a planned event.

If you look back just a little bit this way, Brian, perhaps like here it looks like they were running this, this time is what is that? 7:24, 6:00-ish. Maybe there was a little power surge somewhere. This would be some kind of upset condition, not too serious, but something caused a little pressure variation.

MR. PIERZINA: All right. So --

MR. KOLBUCK: So, again, this would be a rather typical operation for us.

MR. PIERZINA: And I think our purpose here is representative to some degree of what screen shots and pressure charts can tell us. There's a lot of analysis that can go into what it means in particular if it's integrated with control center commands and operations and set points and planned actions and unplanned actions and all that, right?

MR. KOLBUCK: One more awareness item, if I could just put it out there for you guys, this is pressure data. There are also material balance systems when flowing is also telling them a critical piece of information about whether or not they have an emergency or a problem. So at the time of whatever, they're looking at in and out.

So in this case, this line starts at Griffith, Indiana,

with the flow rates, and it's ending -- and I can't speak to the operation at the time, but I think this was being delivered to Marysville, Michigan, approximate distance 300 miles, volume measured in, volume measured out. So the pressures combine with the knowledge of in and out is fed into the computer algorithm that predicts a leak. So there is computer based modeling for leak.

MR. PIERZINA: Right. And all we are looking at is a piece of that information --

MR. KOLBUCK: Yes.

MR. PIERZINA: -- at a particular point along the pipeline. And there are numerous points along the pipeline that take all of that information and evaluate it and operate the system?

MR. KOLBUCK: Yeah.

MR. PIERZINA: And there's somebody sitting on a screen watching the whole thing as well?

MR. KOLBUCK: Right.

MR. WALGREN: Right. Okay.

MR. KOLBUCK: One other sort of awareness, when the line is off, the material balance system does not work in an off situation. What I'm saying is, when the line was shut off here, there's no flow to measure.

MR. PIERZINA: Right. Okay.

And we're still -- we're zeroing in at that point where

we discussed, where we were discussing the Menden station, and that -- we're kind of zooming in on that same point in time at the Marshall station. And that would be around an area of time at the lower right corner of the chart that we have for Marshall, and we're seeing relatively low suction case and discharge pressures and probably less than 5 PSIG, correct?

MR. KOLBUCK: What that would indicate to me is that they didn't turn the station on. We have the opportunity, you know, to leave stations off hydraulically to meet a flow rate. So at the time of what would be their first startup at 1:11, MST, I guess, right there?

MR. PIERZINA: Right here, where --

MR. KOLBUCK: This is where they started the line at first. And the Marshall station was not on.

MR. PIERZINA: Right. So this is -- we are looking at a slight increase in pressures at Marshall station, but it is due to --

MR. KOLBUCK: The startup of the subsequent station.

MR. PIERZINA: -- the startup of the line upstream, right?

MR. KOLBUCK: That's right. No. Downstream. If you think about it, the downstream station started and it's pulling away volume, you know what I'm saying? It's probably -- well, I shouldn't --

MR. PIERZINA: Well, I --

MR. KOLBUCK: Yeah, I may have my --
MR. PIERZINA: When we see the influence of --
MR. KOLBUCK: It's also, I think we can say it's the startup of a line.
MR. PIERZINA: Okay. All right.
MR. KOLBUCK: It all influences --
MR. PIERZINA: So we see pressure fluctuations due to the startup of the line, but -- and we see that stop and go steady for a period of time?
MR. KOLBUCK: That's where they had their first alarm condition where they shutdown the line. So according to my -- and subsequently what they gave me for their timeline, the control center said 1:11 on the 26th, the date of our incident, they started up the line.
At 2:02, they shut it down because of suspicious pressures and column separation condition is what I was told. And I've also got their log here. "Column was unable to be filled between Menden and Marshall. The line was shutdown to investigate."
MR. PIERZINA: Okay. And that's -- all right. So we have that information that we'll pull into this whole deal. I don't know what makes the most sense as far as process. I think I want to back up. Before we did that, I would probably want to back up on this pressure chart that we're looking at for Marshall to a point at or on July 25th at just prior to 16:00, MST. Let's

see if that's --

MR. KOLBUCK: According to them that shutdown was 14:58.

MR. PIERZINA: Right, and I was going to guess 15 -- so were looking at point 15:00, MST, where we see an abrupt drop in suction case and discharge pressures from, the discharge pressure looks like it's dropping from, we got to scroll back, so about 400, maybe 425 PSIG. If you have a specific value, let me know, but.

MR. KOLBUCK: I don't.

MR. PIERZINA: Okay. So we'll say that for now. We have that available to us. It drops from approximately 425 PSIG abruptly down to near zero at 1500, MST.

Do we have an explanation for that drop?

MR. KOLBUCK: According to them, line 6B was shutdown as scheduled per pump orders.

MR. PIERZINA: As scheduled per pump orders.

So in your experience, Vince, does that look like a normal shutdown during pipeline operations?

MR. KOLBUCK: I'm going to have to defer. I believe so, but I'd have to --

MR. JOHNSON: Should we just call up Rob?

MR. PIERZINA: All right. We're going to call Rob back up.

MR. JOHNSON: 1510.

MR. KOLBUCK: It really does, but --

MR. JOHNSON: He can --
MR. PIERZINA: We don't want to speculate or guess.
MR. GUNTHER: No.
MR. JOHNSON: And then you can also say could you --
MR. KOLBUCK: Maybe they could give us --
MR. JOHNSON: -- give me a screenshot of one?
MR. KOLBUCK: Of another typical, yes.
MR. JOHNSON: And we talked about this already, Vince.
MR. GUNTHER: Right.
MR. JOHNSON: Coming in a little late, but --
MR. PIERZINA: All right, Rob, Brian Pierzina again. We're putting you on speaker phone.
MR. GUNTHER: Have one question about the one and --
MR. PIERZINA: All right. Rob, we've got you on speaker phone, and we've still got the screenshot for Marshall last three days.
MR. KITCHEN: Yep.
MR. PIERZINA: And we're looking at that point in time about 15:00, MST, on July 25th where the pressure drops abruptly from approximately 425 PSIG down to near zero.
MR. KITCHEN: Right. And this can be more accurately seen in the spreadsheet data I sent you.
MR. PIERZINA: Sure.
MR. KITCHEN: The time of that pressure change is actually at approximately 14:58.

MR. PIERZINA: Okay. Right.

MR. KITCHEN: It's about an hour before that, and that 16:00 mark on the graph.

MR. PIERZINA: Okay. And do we know why the pressure dropped abruptly at that point in time?

MR. KITCHEN: No, I do not know that.

MR. KOLBUCK: And, secondly --

MR. PIERZINA: Hold on. Hold on.

MR. KOLBUCK: I'm sorry.

MR. PIERZINA: How would we find out why the pressure dropped abruptly at that point in time?

MR. KITCHEN: Boy, I don’t have a way to know.

MR. KOLBUCK: Can I paraphrase?

MR. PIERZINA: Go ahead.

MR. KOLBUCK: Is it typical to see an almost vertical drop in pressures? Can we demonstrate on another scheduled shutdown that it's basically just a vertical drop in pressures? I guess the point is, can we pull some data at another scheduled shutdown to just show this is normal? I believe this is normal; if we can find another point in time several days earlier or something that shows a scheduled shutdown line --

MR. KITCHEN: To be honest, that’s really a question for the control center because there's a lot of variables on how the pressure responds to various scenarios. Elevations play a huge role in that.

Also, you know, the unit start/stop commands that are initiated, you know, have obviously a large role in the pressure changes at a particular point in time. So there are several variables and really that's going to have to be directed at the control center to deduce, you know, what the elevations are, and you know, if you want something that's typical, it'd have to be typical for that specific facility.

MR. PIERZINA: Right. All right, Rob, thanks. And that helps a lot and we, you know, we'll certainly get to that. I don't think that's really the focus of the interview that we're doing right now.

You know, we've got some specific information at around the time that the accident occurred and was discovered. And you know, I think just for the record it's understood that you can't look at one small piece of information on a system and say definitively what's happening on the system.

MR. KITCHEN: That's correct, yeah.

MR. JOHNSON: As long as we've got Rob on the line, and you know, I called Rob back on a couple issues, but during that conversation I asked Rob if the Yokogawas now were synchronized so to speak, unlike in years gone by.

And, Rob, correct me if I'm wrong here, he says that the times are very close, they may be off a minute or two, but not hours like they had been in the past, so when we look at the charts here, for all intents and purposes it's the same time as

the control center time or our time? Is that a fair statement, Rob?

MR. KITCHEN: I believe so. As far as I can tell with the information I have, these times appear to be accurate. One additional piece of data I have here just on a printout is the alarm history of the local HMI, the Marshall station. And that information shows some correlation from the timestamps of the PLC to the timestamps of the chart recorder, so they appear to be accurate at least at the local level.

MR. JOHNSON: All right. Thanks, Rob.

MR. PIERZINA: Okay. And, Rob, and what you're looking at, you know, at that timestamp, is it a cascade shutdown?

MR. KITCHEN: Yeah, there is a timestamp, you know, from the alarm history here that shows -- and I'll point to this 14:50 timeframe where the pressure dropped off. At that time, we saw a few items that would indicate the pressure changing like that, and one was a low suction pressure alarm, which means the suction pressure got below the minimum set point level.

MR. PIERZINA: Okay.

MR. KITCHEN: And that initiated a station cascade pressure shutdown. But also within 19 seconds of that alarm the unit stop command was also sent.

MR. PIERZINA: I'm sorry. Could you repeat that, Rob?

MR. KITCHEN: Yes. At 14:58 and 10 seconds, the low suction alarm occurred, so that indicates that our suction

pressure dropped. All right? And that would have then initiated a station cascade pressure shutdown, which would --

MR. PIERZINA: I'm sorry. Would that have been automatically by the system?

MR. KITCHEN: Yeah, that's a PLC control function, which turns one unit off at a time until the suction pressure is satisfied.

MR. PIERZINA: Okay. So that is being controlled by computers?

MR. KITCHEN: That's correct.

MR. JOHNSON: That's the station computer doing that, not the control center computer.

MR. PIERZINA: Got you.

MR. KITCHEN: Yep, that's the local control.

MR. PIERZINA: Okay. And then you said 19, I'm sorry?

MR. KITCHEN: Nineteen seconds later the running unit, Unit 2, was actually stopped, and that was stopped via a control center command.

MR. PIERZINA: By a human being?

MR. KITCHEN: Correct.

MR. PIERZINA: Thank you. Okay. And what else are you seeing as far as any alarm stamps in that time period?

MR. KITCHEN: One item to note, the actual -- the low suction pressure alarm popped in twice, one at 14:58 and 10 seconds and one at 14:58 and 23 seconds. That'd indicate that the

suction pressure dropped to a level below the minimum, was about the minimum for a fraction of a second or more, and then dropped below the minimum again.

MR. PIERZINA: And I think we see that on the screenshot that we're looking at where the suction pressure goes up and then comes down, right?

MR. KITCHEN: You know, I can't really --

MR. PIERZINA: I'm zoomed in quite a bit and --

MR. KITCHEN: Okay. Yeah.

MR. PIERZINA: -- and I think that's what we see. So --

MR. KITCHEN: Actually the other Marshall screenshot you can see that a little bit better. The other Marshall picture I sent you there.

MR. PIERZINA: Okay. I had a -- okay. And so backing up, we had that alarm or a stamp of a cascade shutdown at 14:58, right?

MR. KITCHEN: And 10 seconds, correct.

MR. PIERZINA: Can you explain, is a cascade shutdown, is that a manual command or a computer command? Is it from the station computer or the control center computer?

MR. KITCHEN: Yeah, the station computer monitors the pressure and generates the cascade pressure shutdown locally. It's a computer generated control function.

MR. KOLBUCK: And can I comment? Cascade meaning a sequencing of things that happens in a certain order.

MR. KITCHEN: Right, right. So if you had multiple units running, it would turn off say unit three then unit two then unit one.

MR. KOLBUCK: Right.

MR. PIERZINA: Can a cascade shutdown also be a shutdown of the system from say one pumping station to another pumping station to another pumping station?

MR. KITCHEN: That would be a control center function.

MR. PIERZINA: Okay.

MR. KITCHEN: And I can't comment for sure on any of their cascade logic or their control functions for their system as a whole. I only truly understand the local control of each station.

MR. PIERZINA: And I guess that's kind of important. So you are the person responsible for station control logic, right? Computer --

MR. KITCHEN: Correct.

MR. PIERZINA: Do --

MR. KITCHEN: Not necessarily just station but individual system control.

MR. PIERZINA: Okay. Individual system control. All right. It’s a lot of information I think for us at the table here to look at and try to understand and digest, Rob.

I do want to ask though, and I think we touched on it before, but the -- and I think, you know, we'll be trying to look

for examples of situations where the pressure drops abruptly down to zero or near zero at a station and what that means. And I guess we've discussed already that that may properly represent a planned shutdown; is that right?

MR. KITCHEN: (No verbal response.)

THE COURT REPORTER: I didn't hear that answer.

MR. PIERZINA: Yes.

MR. JOHNSON: Yes.

THE COURT REPORTER: Thank you.

MR. PIERZINA: Is there, Rob, in your experience is there anything else that that would represent or could represent?

MR. KITCHEN: I don't want to speak on the control center on behalf of that. Obviously, like I said, it's very dependent on elevations and other control center functions.

MR. PIERZINA: And this is not a question specifically to you, Rob, but you or Vince or anyone else, could this line be indicative of a pipeline rupture just downstream of the Marshall station?

MR. KITCHEN: You're breaking up again there, Brian. Could you repeat that?

MR. PIERZINA: Yeah. And it's as to you or Vince or anyone, this event that we're seeing at 14:58, the question is could this represent the rupture of the mainline just downstream of the Marshall pumping station?

MR. JOHNSON: That's -- I guess I wouldn't want them to

answer, you know, because it's speculation.

MR. KITCHEN: Yeah, that'd be speculation on my part for sure.

MR. PIERZINA: Okay. Well, we'll get there I think.

MR. KOLBUCK: Can I comment? Oh, go ahead. Just a comment --

MR. JOHNSON: I want to throw something out there just so you're aware, Vince. I don’t mean to step on you. I talked to Rob. I said, you know, I think for the benefit of Brian and everyone here, and Rob has graciously volunteered to dial in, we could have a meeting tomorrow at Marshall station at 10:00 a.m. local time. I would get Darrell Carter, Brian Whittaker the station chief with us, and we can walk through the Yokogawa on the station computer at Marshall, and if, I think to your, this has to be NTSB, PHMSA, and maybe at that time you could have someone, you know, maybe Karen Butler could dial in, and we could start timing some of this stuff with what they found from the control center.

MR. KOLBUCK: Just a comment. We're getting all local feedback. I think when you have that meeting you should really pull in your control center lead.

MR. JOHNSON: Yeah. The problem -- and that’s why I said that, you know. If you can get Karen Butler, because Karen Butler and an NTSB person, Steve I think, will interview them, and we're kind of two different pages.

MR. KOLBUCK: Can I explain fundamentally why just so

you guys know?

MR. PIERZINA: Sure.

MR. KOLBUCK: Like Rob was saying, the station has programmed control logic and it does what it does. All the feed goes into SCADA so the master control, you asked about cascade shutdown of the entire line, I believe that's in SCADA. So the local cascade of the local station is in the local computer. The master cascade and all the other shutdown features of pipeline operation are in SCADA. So looking at the station in isolation does not give you the full picture of if this could be a leak --

MR. PIERZINA: All right, and thanks. Thanks for that, Vince.

And, Jay, to answer your question, I think, yes, this investigation team will want and need to do that, whether it includes me. But, you know, it will include -- I think it's a good idea, Karl, if you agree.

MR. GUNTHER: It will be somebody, yeah.

MR. PIERZINA: It will include members of the team, and it will be of value to see what's happening. I think it's important that the entire system, you know, system be integrated as far as the available information from operations and control center commands and schedules. You know, all that stuff has to be integrated and evaluated, and that's beyond the scope certainly of this interview.

MR. JOHNSON: Yeah.

MR. PIERZINA: And, you know --

MR. JOHNSON: Maybe, let me ask a question, Rob, and it certainly wouldn't be tomorrow, and maybe I'm jumping the gun with tomorrow. I just know we have X amount of time here, Brian does, and hopefully all of us.

If we were sitting in the control center looking at their logs via, and say you were sitting with us in the control center, Rob, while were looking at their logs, you would have remote access and we could literally be looking at the same thing from Marshall or Menden station?

MR. PIERZINA: Yep.

MR. JOHNSON: Is that a true statement, Rob?

MR. KITCHEN: What are you're referring to as their logs?

MR. JOHNSON: Well, I --

MR. KOLBUCK: Well, what I'm saying is that they could have a series of pressures, commands, alarms. If they populated this master list, if you guys need to, we can pull local data to see that it correlates with the master list from control. That can easily be done.

MR. KITCHEN: Actually, what you have -- what you can where what SCADA has and what the control center would likely have is PI data. PI is a data historian, and the local information from each facility is sent to SCADA to PI for data collection. It would be pulling the PI data for to view the same kind of data

that we're looking at now at the local level.

MR. KOLBUCK: And to get rid of the terminology so it's more simplistic, all the major functioning components, so all these stations that are lined up front to back, to get the line picture, it will pull all of this stuff in increments of seconds; station, by station, by station, by station. So then you've got the complete picture of what happened.

MR. PIERZINA: Right. Yep. That's also important. I know we can do one thing, you know, and then another, and then ultimately, you know, I think, you know, it's clear that the information is available. There's a lot of information, and it needs to be evaluated and discussed.

MR. JOHNSON: So maybe to cut Rob loose, and certainly thank you so much Rob.

MR. KITCHEN: Yep.

MR. JOHNSON: Are we comfortable with what we've got from Rob? And his charts are also dumped in more accurately into the spreadsheets, which now you have. So we're good there?

MR. PIERZINA: Yes.

MR. GUNTHER: Yeah.

MR. JOHNSON: And I don't want to cut you off, Brian, but, I mean, are we there for now?

MR. PIERZINA: I think so, in particular for Rob, we know that Vince has this timeline available which we, you know, probably want to discuss. You know, in this forum, I don't know

if we need Rob for that.

MR. JOHNSON: No, we don't.

MR. PIERZINA: Okay. Then we could --

MR. JOHNSON: Some of the questions -- excuse me, as I interrupt. Some of the questions you're going to ask Vince happened before Vince had knowledge. There we may be going to Rob and someone from the control center to fill in those gaps prior to when Vince got brought in. So I just wanted to say that because when you're like, "Vince, what happened here?", Vince isn't going to know. Rob can go in and say, "This is what I see at the station." A lot is going to come from what they got at the control center.

MR. PIERZINA: Right. And we have people working that end as well, so --

MR. GUNTHER: Yeah.

MR. PIERZINA: So I think, you know, for the record I think we will conclude the interview with Rob Kitchen and maybe go off line for a five minute break and start up again.

(Whereupon, at 12:18 p.m., the interview was concluded.)

CERTIFICATE

This is to certify that the attached proceeding before the

NATIONAL TRANSPORTATION SAFETY BOARD

IN THE MATTER OF:	ENBRIDGE OIL SPILL MARSHALL, MICHIGAN Interviews of Gordy Walgren & Rob Kitchen
DOCKET NUMBER:	DCA-10-MP-007
PLACE:	Coldwater, Michigan
DATE:	July 30, 2010

was held according to the record, and that this is the original, complete, true and accurate transcript which has been compared to the recording accomplished at the hearing.

_____
Amy Shankleton-Novess
Certified Electronic Reporter

_____
Kristen Shankleton
Transcriber