UNITED STATES OF AMERICA

NATIONAL TRANSPORTATION SAFETY BOARD

Investigation of:	*	
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ENBRIDGE - LINE 6B RUPTURE IN MARSHALL, MICHIGAN	*	Docket No.: DCA-10-MP-007
	*	

Interview of: RAYMOND PHILIPENKO

Crowne Plaza Hotel
Edmonton, Alberta
Canada

Wednesday,
November 16, 2011

The above-captioned matter convened, pursuant to notice.

BEFORE: MATTHEW NICHOLSON
Investigator-in-Charge

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I N T E R V I E W

MR. NICHOLSON: Okay, this is NTSB pipeline case DCA-10-MP-007, Enbridge Energy July 2010 crude oil release in Marshall, Michigan. These are the Human Factors Group interviews being conducted at the Crowne Plaza Hotel in Edmonton, Alberta, Canada. Today is Wednesday, November 16, 2011.

This interview is being recorded for transcription at a later date. Copies of the transcripts will be provided to the parties and the witness for review once completed. For the record, Ray, please state your full name with spelling, employer name, and job title.

MR. PHILIPENKO: Raymond Philipenko, R-a-y-m-o-n-d, last name Philipenko, P-h-i-l-i-p-e-n-k-o, Manager of Leak Detection for Enbridge Pipelines, Inc.

MR. NICHOLSON: Okay, and for the record please provide a contact phone number and e-mail address that you can be reached at.

MR. PHILIPENKO: 780-420-8750. E-mail address: ray.philipenko@enbridge.com.

MR. NICHOLSON: Okay, Ray, you are allowed to have one other person present during this interview. This other person can be an attorney, friend, family member, co-worker, or nobody at all. If you would, please indicate whom you have chosen to be present with you during this interview.

MR. PHILIPENKO: I have declined to have anybody here.

MR. NICHOLSON: Okay. All right, we'll now go around the room and have each person introduce themselves for the record. Please include your name with spelling, your employer's name, and contact phone number and e-mail address. I'll start with myself and we'll progress clockwise from my left. My name is Matthew Nicholson, M-a-t-t-h-e-w, N-i-c-h-o-l-s-o-n. I am with the NTSB. My number is 202-314-6468. And I can be e-mailed at matthew.nicholson@ntsb.gov.

MR. PIERZINA: Hi, I am Brian Pierzina, B-r-i-a-n, P-i-e-r-z-i-n-a. I'm with the PHMSA Central Region out of Kansas City. And my e-mail is brian.pierzina@dot.gov, and my phone number is 816-329-3827.

MR. JOHNSON: Jay Johnson, Enbridge Pipelines, jay.johnson@enbridge.com, cell 218-390-4711.

MS. BUTLER: Karen Butler, karen.butler -- and the e-mail is karen.butler@dot.gov. The phone number is 816-329-3835. I'm with PHMSA out in the Kansas City Region Office.

MR. STRAUCH: I'm Barry Strauch with the NTSB, B-a-r-r-y, S-t-r-a-u-c-h. And my e-mail is straucb@ntsb.gov, and my phone number is 202-314-6503.

INTERVIEW OF RAYMOND PHILIPENKO

BY MR. NICHOLSON:

Q. Okay, Ray, just to begin with, I think it would be helpful for us if you would just describe maybe your duties at Enbridge, who you report to, who reports to you, what kind of --

what a typical day is like and what kind projects you work on.

A. Okay, I manage the leak detection department. That department is part of a greater overall department called pipeline control systems and leak detection. I report to Barry Callele. Our accountability is to do modeling of the pipeline and indicate whether there's anomalies in mass balance and alarm on that. That service is provided to the control center. And we then in turn do -- when an alarm is generated, we do a root cause analysis on the alarm.

So I manage three teams. One is an assessment and support team, and that's the team of individuals that are in the control center doing alarm analysis when those alarms are generated. There's another team of modeling engineers focused on maintenance of our leak detection models, our material balance models. And then we have a third team with a mandate of helping out with testing and performance of our models and doing research of new complimentary technologies that will ultimately enhance our ability to identify leaks.

Q. Okay. Can you give us some background now and just kind of walk us through your history? Maybe start with your educational background and how you -- other jobs you've held, how you came about working for Enbridge, and positions you've held within Enbridge.

A. Okay. I'm an electrical engineer with a computer science degree. I've got two degrees from the University of

Saskatchewan. I've been in industry for 20 years, primarily focused in areas of instrumentation, control systems, supervisory control, and data acquisition, telecommunications. I am not a expert, subject matter expert in leak detection, but I do have exposure to leak detection through the various positions I've had through the years.

I've been at Enbridge Pipelines for 11 years. Prior to that I was with TransCanada Pipelines, and prior to that I was with a refinery. So my positions have been control systems engineer at the refinery, SCADA specialist at TransCanada Pipelines. I've worked in the international department at Enbridge as a project manager. I've managed a SCADA R2 telecommunication project at Enbridge. I've worked in this -- the department I current manage as a project manager for about a year. I've also worked within our major projects group in terms of cost engineering and developing estimates and project execution requirements for our major pipeline projects. And I've -- I accepted this position as of January 2011. I've been manager of this department since then.

Q. And who was managing this department prior to that?

A. This -- the position of manager is actually new to -- the group was formerly called pipeline modeling. It used to -- prior to the reorganization of pipeline control systems and leak detection that that is a new group as of late last year, post-Marshall. And there was no manager at the -- pre-Marshall, of

course, and with the reorganization they -- senior manager identified a need for management oversight for this team and also a dedicated for manager for pipeline control systems team. So we've -- there's two -- there's actually several managers in the group, but the two managers in terms of the technology, pipeline control systems is one manager and I'm the other manager for leak detection. The group was supervised by Lorna Harron, you know, prior -- pre-Marshall, sorry. And it existed in the IT group, and I'd have to be -- we have to confirm, Jay, but I think it was reporting to Rob Casavant, but I'm not --

MR. JOHNSON: I don't know for sure.

MR. PHILIPENKO: Yeah, I think it was Rob Casavant.

MR. JOHNSON: You have the org. charts from that time peeriod?

MR. STRAUCH: Yeah, we can look that up.

MR. PHILIPENKO: Yeah. Yeah.

MR. PHILIPENKO: So Lorna reported up through that, that chain of command.

BY MR. NICHOLSON:

Q. Okay.

A. So it's been restructured. I now report to Barry Callele, who then in turn reports to Art Meyer, who's an executive vice president of pipeline integrity and engineering.

Q. And I didn't catch, when did you start at Enbridge?

A. At Enbridge in year 2000.

Q. Okay. And prior to becoming a manager you were working as a project manager in this group?

A. I was -- no, no. Prior to that I worked in a group called business development engineering. I was a manager there for -- I was in the group for 4 years. I supervised the pipeline hydraulics team that did the pipeline designs for any one of our projects that were in the planning phase. And then I was promoted to manager of that group and several other groups. So I managed -- for 2 years I managed the pipeline hydraulics design group and a cost engineering group that was responsible for cost estimating and risk management. And also a QA/QC team, which was responsible for process and procedures of things within that area, so --

Q. So the pipeline hydraulics design group, I'm sorry, was that -- that's not part of the same as MBS?

A. No, no.

Q. Okay.

A. No, that's on our -- that pipeline hydraulics team is accountable for -- well, on our major projects side, which is new pipeline projects. So working with our BD group, our business development group, understanding customer requirements and then proposing appropriate pipeline diameter sizes, pump station design, batch systems, automatic pig bypass, all of those things associated with pipeline design --

Q. Okay.

A. -- in the planning phase. Then those designs would then

go on to execution.

Q. Okay. Can you talk a little bit about what has changed since Marshall in the MBS role, mass balance system and leak detection?

A. Yes, a number of changes have been made post-Marshall, although of course even before I got there senior management identified the need to focus on the two areas I described on pipeline control systems and leak detection. So my boss was hired as the director of that area, and he in turn hired -- you know, developed an organizational structure of four managers: as I mentioned, pipeline control systems manager, leak detection manager, and we also have a project support group that's managed by Alan Yakiwchuk, and a QA/QC and compliance group that's supervised by Mei Li (ph.). So there's been organizational change.

Beyond that I'll just comment on the people and structure changes within the team since I came on board. At the beginning of the year, kind of consistent with senior management's desire for greater focus in the area, I had done an assessment of where I thought the gaps were for people resources and where we were trying to get things done but maybe not with enough resources. So I proposed this three-person team which was -- previously we only had one leader in the team. We now have introduced two new leaders and developed separate teams to provide focus and try and expedite a few of the initiatives that have been

on the plate for -- you know, since last year or even longer.

So my organizational proposal was three separate team leaders in the area. I think I've described those already. And in addition to that we've almost doubled the size of the department. So we had, I believe, it's 14 FTEs in the department, and we're now approaching -- the proposal, if my mind serves me correctly, is 27. We've added 8 FTEs and 5 contract positions to help develop a number of our initiatives.

Q. Well, can you -- what's an FTE? I'm not --

A. Sorry, that's a full-time equivalent. So that's a full-time resource Enbridge employee as opposed to a contract resource.

Q. And these -- specifically the FTEs are what? Are we talking analysts, modelers, or --

A. Right. So like they're spread -- so just to recap, I'll go team by team. So the leak detection analysts -- so, as I mentioned, Lorna was in place as supervisor of 13 individuals. As I mentioned, I wanted to introduce more leadership and accountability of the team so that we had better ability to focus. So for our leak detection analysts -- that's called the assessment and support team -- we now have a team leader who is not working on shift. That team leader, of course, is managing the group of analysts that work in our control center 24 by 7. So she manages the analysts.

In addition to that, I've also introduced two daytime staff onto that team. One is focused on procedures and training

to support the function of a leak detection analyst, and the other is a technical expert in terms of instrumentation maintenance. So that -- where I had seen that we were -- there was room for improvement was the field maintenance of our instrumentation, especially the critical devices that feed our model. So I wanted greater focus on managing the maintenance of those and bringing maintenance to completion. So that's an example of adding a team lead and adding a full-time resource, which is our training guy, and a contract resource, which is the subject matter expert I referred to.

On the second team, which is the maintenance and integration team, that's the group of engineers responsible for the model maintenance, tuning, performance, building of new models for projects. And that team has been -- we've hired on two full-time staff and two contract staff onto that team. Three of them are subject matter experts to help the -- to help in terms of workload management.

We have 28 MBS systems running and a number of -- you know, those systems are assigned to what we call a line custodian or the modeling engineer. And so I wanted to decrease the workload for each one of the engineers so that we could focus and -- once again our goal is to provide the greatest level of leak detect-ability and sensitivity to the control center. That's a service we provide, so --

We've also -- I also introduced some project management

-- a project manager on that team so that I didn't have subject matter experts trying to do project management. I want the subject matter experts to be focused on doing, you know, their area of expertise, which is model tuning, building, performance enhancements.

And then the third team, the testing and research team, they're focused on building offline models, offline pipeline models which we can then use to create leak signature data, create scenarios, create a leak at whatever location and use that data to feed it back to the maintenance integration team I referred to. They can use that data and test the performance of our models.

So I think these are things that had been talked about previously but we hadn't had the opportunity to bring it to completion, so we've got focused resources on that. That testing and research team also helps with our fluid withdrawal program and doing actual fluid withdrawal testing on our pipelines and making sure we have dedicated resources to manage that.

And then the final component of that testing and research team is, of course, research. So we're looking at a number of -- not so much to replace our current technology because I -- you know, I believe our technology is, you know, one of the state of the art real-time transient model systems, but to complement that technology, whether it be a sensor-based system or pressure wave system, et cetera. But we want to have dedicated resources of looking at those technologies to see how it can be

layered on to what we have already. So the resources, the 13 resources that we've added this year have been dispersed through the 3 teams to try and offload the existing staff and bring initiatives to completion, which has been a challenge.

MR. NICHOLSON: Okay, I'll hand it off to Barry at this point. I'll let him ask some questions.

BY MR. STRAUCH:

Q. Yeah, I just have a few questions, Ray. Have there been any changes to the procedures as well?

A. Yes, there have been. In terms of formal rolled out procedures, we worked with the control center in terms of their control room management plan to make sure roles and responsibilities were clearly defined. So that's been one component of role clarity that's been signed off.

We've also -- for our analysts, we've introduced a shift change procedure so that analysts log things, significant events throughout the day that they believe the next shift should be aware of and make sure that that doesn't get lost in any kind of changing of staff during the shifts. That's a formal procedure that they follow.

And in addition to that, we have a formalized escalation procedure. So whenever there is an alarm that comes up that they're not able to find a root cause on or explain -- obviously the control center is involved, but it's also -- there's an escalation up to myself and the director so that everybody's aware

of a potential issue on the pipeline.

Q. Okay.

A. In addition to that, we have a procedures review where we've taken our procedures pre-Marshall and we're enhancing those. We've identified 70 new procedures for the analysts. All of them have been drafted. They're all going under -- through a technical writer and technical review, and by the end of the year we hope to have all of those complete and then roll out in training into the new year.

Q. Beyond what you've already said, can you like sum up what these -- what the new 70 procedures will accomplish, that were not in place at the time of the Marshall incident?

A. Well, the procedures, they're building on the ones we had. One of the -- probably one of the primary ones we've been working with the control center that we're about to roll out in the next few weeks is to ensure there is clear communications between the analysts and the operator in terms of what we say and what they understand, and the roles and responsibilities between the two so that there's no -- you know, minimizing the opportunity for error with regards to communication.

So in addition to that, it also lays out specific steps for every type of alarm that we receive and what the analyst should be doing, to ensure that every analyst does the same thing. So we've taken the existing procedure and we're just building on that and making sure there's buy-in on the control center side so

that the two parties are communicating effectively.

Q. And what are the plans that you have to review the procedures on a systematic basis once they're implemented to make sure that they are addressing the shortcomings that were identified in the Marshall accident?

A. Right. So our -- well, the first step of course is doing the procedure review and then the next step is to ensure we've got a formalized process in place. And as I mentioned there is a QA/QC group within pipeline control systems and leak detection that will help contribute to managing it. But, doing a procedure review. We haven't determined whether it's going to be annual or two times a year or whatever, but ensuring that we're -- there's a continuous improvement loop with regards to the procedures.

Q. Okay.

A. Yeah.

Q. Okay. And how will the procedures be monitored to make sure once they're implemented that they're being followed?

A. So one thing that we've identified as an area for improvement is analyst re-certification. So currently our analysts when they come on board they have -- they go through a training process, 3 months or longer if required, but, you know, from everything from understanding the current procedures to job shadowing to on-the-job training and then finally a certification at the end of a 3-month period. So we will be instituting a re-

certification process, I'll say annually right now, but frequency probably requires some discussion as to -- you know, if we think it's more appropriate to do it more frequently, then we'll do that. But it's probably an annual re-certification of the analysts.

Q. And it's through that re-certification that you'll determine whether the procedures are being followed?

A. Well, I think that's one method to ensure that the analysts are doing what they should be doing, yes. I guess in addition to that -- yeah. Yeah, that's one method. There's probably other things we could be doing in terms of spot checks throughout the year.

Q. What would they include?

A. Well, I mean -- and this is -- I think this is kind of the benefit of having a focused team lead on these analysts. That's something that wasn't there before.

Q. Okay.

A. So I'm going to have somebody that's not on shift, somebody that's managing these people, their performance, their adherence to process, procedure and tools, identifying gaps. That will be -- that is Tina Chikowski's (ph.) accountably, so -- yeah.

Q. You said at one point you have made yourself available and expect to be called in certain situations as analysts go up the chain. When did that occur when you were -- when you became available and informed your subordinates that you would be called

or should be called in certain situations? When did that occur?

A. The procedure, the exact date I don't know. However, we established the procedure prior to Lorna departing, which was in June. So I want to say it was around the end of Q1 2011, which would have been about, you know 2 to 3 months after I was in place. So somewhere around that time frame.

Q. And how many times have been called since then?

A. The exact number I don't know, but, I mean, recently on the weekend several times. Several times just on the weekend.

Q. Okay. So the procedure is the analysts calls his superior and then his superior would call you?

A. Yeah.

Q. Okay.

A. And if they're not able to find one -- you know if they can't find their superior, they would call me. And if they can't find me, they would call the director --

Q. Okay.

A. -- and it would escalate.

Q. Are you informed the next day when the leader has been called the night before?

A. I'm informed, yes. Yeah. Yeah, I mean we have e-mail. We have a post-analysis report. We have e-mail communications of incidents in the event that, you know for whatever reason I wasn't available. There's post-analysis reports so that we can do continuous improvement on an incident.

Q. Have there been occasions when a supervisor has not been called when the analyst should have called him?

A. Well, the analyst -- the protocol is for the analyst first to determine -- they do an assessment of whether they need help and the first step is to call back-up support. So if in that process, as I said, they're not able to determine a cause, then that's when it's triggered to call the supervisor and then myself, et cetera. So I'm not aware at this point of, you know, of shortcomings of the procedure, but -- yeah.

Q. Okay.

A. Yeah.

Q. Could you kind of walk us through the Marshall incident from the MBS analyst point of view and tell us what would be different today than occurred then from the time the analyst was informed of the MBS alarm?

A. Sorry, could you repeat the last part you said?

Q. Okay. In the Marshall incident the MBS analyst was informed that there had been an MBS alarm.

A. Yeah.

Q. And he did certain things. Given the new procedures and the new structure, what would he do differently today that he actually did do during the Marshall incident?

A. So, I mean, I can't talk to all the details just because I wasn't around at that time. What I do know is -- you know, the procedures that we've discussed already today is the shift change

log is new. So a formal procedure whereby at shift change one analyst would formally communicate the following analyst of the events of the day, the alarms, any kind of anomalies, et cetera, that the following analyst should know about to ensure we have a consistent sort of knowledge of the state of the pipeline.

And we talked about the -- right, so the escalation procedure we just finished talking about that, being able to escalate the information to -- whether it be to the back-up support person, which is a group of engineers, their team lead, the analyst team lead, or obviously senior management.

And just in general, there's a lot of sensitivity around what happened at Marshall, so --

MR. JOHNSON: Is there clear direction in your procedures of what he communicates to the operator? I think -- well, I'll let you answer that.

MR. PHILIPENKO: Yeah.

MR. JOHNSON: And that's if you're aware of that part of the procedure. I don't if -- maybe you recall.

MR. PHILIPENKO: Yeah, yeah. Well, what I can say is there's the existing procedure and we have a new procedure that's going to address that and it's -- we're about to roll that out in the next 2 weeks to ensure that there is clear communication, so --

MR. STRAUCH: Okay.

MS. BUTLER: That was operator or shift lead or both? I

just want to make sure I get it right.

MR. PHILIPENKO: So the -- in terms of the new procedure, it would identify the role and responsibility between the analyst -- the role, responsibility, communications -- it's called the alarm analysis and communications protocol procedure, so on our side the alarm analysis, what the operator -- what we're telling the operator and when to engage a shift lead or not.

MS. BUTLER: Thank you.

MR. STRAUCH: Okay.

MR. PIERZINA: Is that something we could make an IR for and I'll say delay it, so it you get the roll-out version?

MR. STRAUCH: Of the new procedures?

MR. PIERZINA: Yes. Is that reasonable that we would get that procedure, I mean, after you roll it out?

MR. PHILIPENKO: Yeah, absolutely.

MR. PIERZINA: All right. And what would you call that again?

MR. PHILIPENKO: It's the alarm analysis and communications protocol procedure.

MR. NICHOLSON: And that's not a CCO procedure; that's a --

MR. PIERZINA: MBS.

MR. NICHOLSON: MBS.

MR. PIERZINA: Yeah.

MR. NICHOLSON: Okay. Just to be sure.

BY MR. STRAUCH:

Q. So let's take a look, if you would, at a Marshall-like incident when you have an MBS alarm and there's some ambiguity as to whether it's a leak or a column separation. In the ideal situation that, you know, given the changes that have been implemented, what should happen? Can you kind of walk us through the steps from the operator -- the operator first detects the alarm and just kind of walk us through both from the MBS analyst, the operator, the shift lead supervisor, and anyone else involved.

A. In terms of -- so you'd like me to answer that in terms of the new procedure ideally how we want to address that?

Q. Yes.

MR. PIERZINA: I think we're going to want him to answer MBS. We can't -- I don't think we can ask him what the operator and shift lead would do.

MR. PHILIPENKO: Right. Because they have their own procedures.

BY MR. STRAUCH:

Q. Okay.

A. But ours will play into theirs.

Q. Well, as best as you can --

A. Yeah.

Q. -- can you describe both? I would be interested in hearing the interaction also with the operator and the shift lead supervisor, and I'm sure your procedures would include that as

well.

A. Okay. Well, knowing that our procedure's not -- it's not formally rolled out, I will comment conceptually on what the idea is. But when an alarm is generated, the operator would call the leak detection analyst. The leak detection analyst would perform root cause analysis on that alarm to determine if it's a valid or invalid alarm; invalid being is it being caused by instrumentation failure or some other cause that would explain why it's causing them all to create an alarm. And so then there's a communication back and forth with the operator.

If we cannot determine that root cause within the 10-minute rule of the control center -- I can't talk to their procedure, but you know the 10-minute rule is to shut down the pipeline. And if we need to dispatch foot patrol, aerial patrol, wait to the next day, then that is done.

So in the event that they can definitively identify the root cause -- I'll just use the instrumentation failure. Again, then they would work collaboratively with the operator and, you know, the alarm would be, you know -- whatever the actions are of the scenario, so --

Q. Okay.

A. Within that, the shift lead I do know is involved. I can't -- I don't recall the steps of the procedure, but decisions whether the pipeline should keep running or not, you know, they're engaged with that.

Q. Who makes that decision?
A. A shift lead.
Q. What would happen in a situation where the decision is made to keep the pipeline running and the leak detection analyst disagrees with that decision?
A. There would be, there would be escalation.
Q. Okay.
A. Yeah.
Q. Could you kind of walk us through the escalation process?
A. Yeah. Well, I mean, if one of my team members believes that, you know, we have a potential leak or release and the control center, for whatever reason, decides to do something, I mean, that would need to be escalated up through their team lead and me and my director, and it would ultimately go to senior management.
Q. Okay. Now, suppose the leak detection analyst determines that the alarm is invalid. That's means it's due, I guess, to instrumentation. What happens then? What's expected of the operator?
A. It's a collaborative. They have to come to joint agreement on that assessment. So the operator needs to agree that it is indeed an instrumentation failure or can be an instrumentation failure. So the reasoning behind that is a joint collaborative decision between the two. And in the event that

they can definitively agree to that, then the alarm would be declared invalid and they would probably dispatch field personnel to rectify the issue because critical equipment such as instrumentation is a high priority for maintenance that would need to be addressed right away.

Q. Okay. And when you say collaborative decision, you're referring to the operator and the analyst?

A. Yes.

Q. Okay. Who makes the call to send someone out to verify whether there's a leak or not?

A. The control center.

Q. Okay. So what's the difference really in terms of letting the pipe continue to be operating or shutting it down, whether it's a valid alarm or an invalid alarm?

A. What's the difference?

Q. Well, you're still not really sure whether it's a valid alarm or an invalid alarm, whether it's a leak or something else, as I understand it.

A. Well, if they cannot definitely identify that the root cause of the alarm, we have -- there's 10 minutes and the pipeline is shut down and then automatically they dispatch staff.

Q. Okay, regardless of whether it's considered a valid alarm or invalid alarm?

A. Right, yeah.

Q. Okay. I see.

MR. STRAUCH: I don't have any more questions at this point.

MR. JOHNSON: Maybe I'll just follow up on that a little bit. I wasn't quite clear, and I see Brian kind of flinched a little too.

MR. PHILIPENKO: Uh-hum.

MR. JOHNSON: If it's stated that it's an invalid alarm --

MR. PHILIPENKO: Well, we're -- if the 10-minute rule -- like we haven't stated anything right now and the 10-minute rule goes by and we're not able to state whether -- like we'll say the diagnosis is not complete and we'll shut the pipeline down.

MR. JOHNSON: Okay. Then I -- does that answers yours a little better, Brian? Maybe I was the only one with the questions.

MR. PHILIPENKO: No, no. That's fair. Yeah. So, yeah, I mean the 10-minute rule it's shut down regardless.

MR. JOHNSON: Okay.

MR. PHILIPENKO: And then the -- yeah. And so if the analyst can complete it with certainty in terms of what, you know, whether it's an invalid or valid alarm; if they cannot -- and we just had that example on the weekend. If they cannot, then they'll dispatch staff.

MR. JOHNSON: All right, thank you.

BY MR. NICHOLSON:

Q. I don't hear any difference between this procedure and the one that was in place in 2010. Where is the difference? What's new about this procedure; the collaborative process or what's changed? I don't -- you know, I don't hear it. What if the line is shut down and there's been an alarm that cleared; has that been addressed?

A. Can you reword your question? I'm not --

Q. So I heard about -- and, I mean, we didn't really specify whether the -- in this what-if analysis whether the line was running or not, but what I heard on this procedure was -- it sounds like the old procedure where the MBS analyst tells the operator it's either a valid or invalid alarm, and if the operator can't make a decision or the analyst can't get to a decision within 10 minutes the line's shut down.

A. Um-hum.

Q. Well, that was the previous procedure. So I'm just trying to figure out what's different about this procedure now post-Marshall. Has anything been changed or --

A. Well, I think the communications interaction between the two individuals is -- the things the analyst can say versus --

Q. Oh, okay.

A. -- right, will be specifically laid out in terms of MBS alarm valid or invalid so there's no misunderstanding about the root cause of the alarm, right. I mean, if we can't find a root cause and it's just a valid alarm, we're not going to say whether

it's a leak. We're not going to say whether it's a column sep. We're just going to say it's a valid alarm and the control center procedures will then kick in.

Q. So if he starts that analysis and the alarm clears while he's doing his analysis, the MBS analyst, what is he to do then?

A. If the alarm clears?

Q. Uh-huh.

A. Yeah, I mean, I don't -- I don't know. I don't -- generally the alarms -- they just clear.

Q. An MBS alarm, it will clear on a shutdown, right?

A. I mean, I think it -- I don't know. I mean, I think it probably depends on a number of factors. So, I mean, every scenario's different, so I mean --

MR. STRAUCH: Could I ask a follow-up?

MR. NICHOLSON: Yeah, I'm sorry. I interjected, so why don't you ask yours --

MR. STRAUCH: Okay.

MR. NICHOLSON: -- and we'll get back on track.

MR. STRAUCH: Okay.

BY MR. STRAUCH:

Q. As I understand it, an alarm could clear for any number of reasons. The operator could acknowledge it or if the line is shut down, then the alarm will clear. But suppose you have a situation where there's a leak, the pipeline is shut as per the 10-minute rule, and the alarm clears because there's no longer a

situation that -- a pressure differential causing the alarm. What's to stop the MBS analyst from interpreting the cleared alarm as the situation has resolved itself and there is no longer an MBS problem, versus there may still be a problem and I haven't defined it yet? Because there may still be a leak that the system is not detecting only because the pipeline is shut down.

A. Yeah, I think -- just one second here. The root cause analysis happens all the time. So it's not like the operator calls at minute 1 and says I have an alarm and then 5 minutes later he says, oh, forget about analyzing that alarm; it's just cleared. So the root cause analysis has to happen every time.

Q. Um-hum.

A. So the explanation of whether the alarm is there and then clears or -- once the alarm is generated, we have to take the analysis to the end.

Q. Okay. And how would the analyst do that in this hypothetical scenario where there's a leak but the pipeline is shut down? How would the analyst conduct the root cause analysis to its final step and determine that it's a leak in this hypothetical situation?

A. Yeah, okay. So can we just -- let's describe this scenario again because I think we're -- can we just go through this scenario again?

MR. STRAUCH: Did I describe it accurately?

MR. NICHOLSON: Yeah, what I heard sounded accurate.

MR. STRAUCH: Okay.
MR. NICHOLSON: You're saying --
MS. BUTLER: Can I clarify something --
MR. NICHOLSON: Yeah.
MS. BUTLER: -- that I think is happening?
MR. NICHOLSON: Go ahead.
MS. BUTLER: When the alarm indication goes off, that indicator is still in the leak detection model, regardless of what the controller does or doesn't do because they're two separate systems, right? So if I have this right, and you clarify me if I'm wrong --
MR. PHILIPENKO: Um-hum, um-hum.
MS. BUTLER: When the indicator goes off, the information is sent from the leak detection software to the SCADA system software, all right. So when we say the alarm cleared, you have to be specific about whether you're talking -- because a controller acknowledging it is not going to clear his alarm, all right. An MBS alarm stays there.
MR. NICHOLSON: No, yeah. We're not talking about an acknowledgment.
MS. BUTLER: Right, so --
MR. NICHOLSON: We were talking about the MBS system clearing itself.
MS. BUTLER: So just be clear as to whether you're talking about what's going on in a leak detection model --

MR. NICHOLSON: Right.

MS. BUTLER: -- when you ask him questions versus what the --

MR. NICHOLSON: Sure.

MS. BUTLER: -- is going on, on the SCADA controller.

MR. NICHOLSON: I missed that. That's what -- yeah.

MS. BUTLER: Okay.

MR. NICHOLSON: No, we are -- we're talking about --

MS. BUTLER: It will be easier for him.

MR. NICHOLSON: -- the MBS model actually clearing itself. Right.

MR. PHILIPENKO: But we don't acknowledge -- well, I mean the -- we still would have to do -- once the alarm -- I think it's very simply in my mind. Once the alarm is generated and the operator engages the analyst to do root cause analysis, we have to do root cause analysis.

MR. STRAUCH: Okay.

MR. PIERZINA: Regardless if --

MR. PHILIPENKO: Yeah.

MR. PIERZINA: -- the MBS alarm clears itself?

MR. PHILIPENKO: Oh, yeah. Yeah, yeah.

BY MR. STRAUCH:

Q. So the question is could you kind of walk us through the steps that the analyst would take in conducting the root cause analysis? Because the leak is there but the pipeline has been

shut down.

A. Uh-hum.

Q. So how does the analyst then -- what information would he use; what analytical steps would he take to determine that it's a leak? So that the pipeline is not started -- re-started while the --

A. Right.

Q. -- while the leak is still set and it's in place?

A. Okay. So, well, my first comment is, I mean, I don't do alarm analysis. So there's a number of diagnostic steps they do to determine what could -- what the potential alarm could be caused by. So I -- yeah, I don't -- I mean, in terms of -- and I think that's part of this procedure we're going to be sharing with you guys, you know, over the next few weeks that I think will outline each one of those steps. Because I think whether it's instrumentation failure, whether there's a potential issue with the model, or a number of other scenarios we've encountered over time, each one of those has a different analysis. And I, myself, am not a modeler so I wouldn't be able to answer that question.

Q. Okay. I guess that's all.

MR. NICHOLSON: Brian, why don't you --

MR. PIERZINA: Sure.

BY MR. PIERZINA:

Q. So you mentioned you have 70 new procedures --

A. Yeah.
Q. -- that are due to be rolled out within the next few weeks?
A. We're targeting to have the procedures drafted -- well, they're all drafted. They're going through internal review with a technical writer, subject matter review, and we're targeting by the end of the year.
Q. Okay.
A. But the communication -- alarm analysis, communication, protocol procedure, we've -- we're looking to have that finalized and rolled out in the next few weeks.
Q. Okay.
A. Yeah. So the roll-out of the remainder of the procedures will carry on into Q1.
Q. Right. So there's -- I guess what I'm wondering is, so they can be implemented in a piecemeal approach? Are there -- or are there procedures that have to be implemented at the same time, you know, so you don't have conflicting procedures?
A. Right. Piecemeal in terms of what I just described, right, that's one procedure we want to get out complete right away.
Q. Okay.
A. The remainder I can't comment on, but --
Q. All right. In general, is it the idea that they're going to be implemented as a group, the other 69, or can they all

follow their -- can each of the 69 follow their own path?

A. I think that's strategy for roll-out and training will have to address in terms of what the best approach is.

Q. Okay, you said the strategy?

A. Like, well, like for roll-out and training, whether it's a group or whether it's 6 groups of, you know 11, or whatever that works out to, or 12. I think we need to talk about that internally.

Q. Okay.

A. Yeah.

Q. Fair enough.

MR. JOHNSON: So of those 70, so are they all new or are a large portion of them that were revised as in new?

MR. PHILIPENKO: I think some of them build upon what we had and some are --

MR. JOHNSON: Okay.

MR. PHILIPENKO: -- institutionalizing things we did that weren't formally procedures.

MR. JOHNSON: That's fair enough.

MR. NICHOLSON: How will we know when see a procedure if it's new or -- just there will be a revision block on the cover sheet?

MR. PHILIPENKO: Absolutely, yeah. Yeah. Yeah, I -- yeah.

BY MR. PIERZINA:

Q. Okay. So you're the manager of the leak detection group?

A. Yes.

Q. The pipeline control system, who's that manager?

A. That's Dion Dube.

Q. Okay. And that is -- what's the distinguishment between the pipeline control system and control center operations?

A. Pipeline control system would manage the technology in terms of the delivery of the technology.

Q. Okay.

A. The maintenance of the technology. Control center operations would define the requirements, what they need to --

Q. All right.

A. -- for pipeline operations.

Q. That helps. You mentioned being called several times on the weekend. Can you hum a few bars about the nature of the calls that you've gotten and tell us what you needed to do as a result?

A. Well, in the one example there was a delivery flowmeter was reading low.

Q. Okay.

A. And so we had an injection flowmeter, delivery flowmeter.

Q. Okay. So and if I can interject, so you had a delivery flowmeter that's reading low?

A. Yeah.

Q. So that generates an imbalance alarm?
A. Yeah.
Q. All right. And so your MBS analyst gets notification from the shift lead that there's an MBS alarm?
A. From the operator.
Q. Oh, from the operator --
A. From the operator.
Q. -- directly?
A. From the operator that there's an alarm. Usually initially engaged by the operator.
Q. Okay.
A. Yeah, because the alarms show up on the operator's screen.
Q. All right.
A. Yeah.
Q. And so the MBS analyst reviews this alarm, and so then tell me what did he determine as a part of his analysis?
A. Sure. Well, in that particular case he went through his analysis steps, right. I mean, as I said, I'm not an alarm analysis person. But he went through his analysis steps and came to the conclusion that there's a flowmeter that's reading low, so it's one of two issues: It's an issue with the flowmeter or there's a leak somewhere.
Q. Okay. So do you happen to recall was this a 2-hour MBS alarm or a 20-minute or a 5-minute?

A. I don't know.

Q. I'm just guessing it may have been the 2-hour type because it might have been -- or was it a sudden problem with the meter or --

A. Yeah, I don't know. I don't know.

Q. Okay.

A. But -- yeah. Regardless, I mean they determined it was reading low, so it would have triggered probably one of the alarms. Or it did trigger one of the alarms; I just don't know which one it was.

Q. Okay. So are you familiar with how they would have determined that it was not a leak and that it was due to a, you know, a meter reading low?

A. Well, if there's nothing within our system that can explain why the meter would be reading low, for example -- well, I don't know. If there's nothing in our system that can say the meter's reading low for the following reason in terms of making it an invalid alarm, then they obviously went back to the operator. In that case, the 10-minute rule, the line was shut down. They actually -- in that particular case the line stayed shut down because we wanted to fly the line the following day in daylight. And they actually didn't fly the line; they sent an ATV over the line in that particular case. And then maintenance personnel looked at the meter.

Q. Okay. Do you happen to recall which line?

A. It was Line 36.
Q. Okay.
A. Which is one of our -- I believe it's one of our laterals in Alberta.
Q. Okay. So, yeah, I'm just thinking that sometimes between injection and delivery you might have a lot of miles, and so an ATV --
A. Oh. Oh, yeah, yeah.
Q. And you really wouldn't -- would you have any indication as to where the imbalance is? I think I've heard them referred to as diagnostic flows. Would you have any indication where that would be along the pipeline?
A. Well, in this particular -- I mean, I guess, you know, in the analysis, yeah, if we talk -- spoke about this particular scenario, I don't know. But I mean, if you see some pressure anomalies on your pipeline, then you'd probably want to zero in on a particular section if you've got a pressure reading showing lower than others, for example.
Q. Right.
A. Right.
Q. And I'm guessing in this situation there probably weren't pressure anomalies?
A. I don't know off the top of my head. But it was a shorter line. Regional management would have decided to send an ATV in. In other scenarios with a longer line, we'd be flying the

line.

Q. Okay. So in the call that you received, is that just a notification, or --

A. It's a notification --

Q. -- are you asked, are you asked to --

A. -- it's a notification of what's going on.

Q. Okay.

A. It's a notification of what's being done, and then I notify my director, and obviously we have the opportunity to chime in as to whether we're comfortable with whatever's being done. In this case, the line was down. They weren't going to be turning on the line until field personnel were dispatched, so --

Q. Okay. So does that mean in this circumstance that it was determined to be a valid alarm?

A. Yes.

Q. Okay. So then you implement your -- or the control center implements their suspected leak procedure?

A. Right.

Q. Okay. And you're just informed that it's going on?

A. Yeah.

Q. Okay. Can you give me a totally separate example of a call that you received over the weekend?

A. Well, we -- the other one was on Line 6B, and there was a report. I believe it was a third party. I can't confirm because I haven't seen the post-analysis report. But there was a

report of oil in the ground, so we shut the pipeline down. And we were notified of what was going on; field personnel had been dispatched. And they found out it was goose droppings reported by -- well, so they erred on the side of caution.

Q. Yeah, that's -- all right. When I've looked at the existing procedures, and it hadn't always seemed to me to be clear that the analysis of an MBS alarm needs to be done from the status of the line at the time the alarm occurred. So I just wonder is it clear that the analysis of an MBS alarm needs to be on the status at the time the alarm occurred? So in the instance of an MBS alarm on a shutdown, the way I read the procedure, the analysis could be, you know, on the line not being, you know, under full conditions. Is it --

A. Do you mean that they're doing analysis on a stopped pipeline?

Q. Correct.

A. Well, we do -- we can run historical data through our models to see -- to recreate the situation when it was running, if that's necessary.

Q. To your knowledge, would that have been done in the Marshall accident?

A. I don't know.

Q. Okay. You talked about the escalation procedure.

A. Yeah.

Q. So the MBS analyst would go to -- his next step would be

to a modeling engineer?

A. As backup support, yeah.

Q. As a backup support?

A. Yeah.

Q. And I think we talked with Lorna Harron earlier, and she had said that the line custodian reviewed what the MBS analysts had done and said that it was all correct; you know, it was correct, so --

A. Are we -- and when was this done? Are we talking about a specific scenario?

Q. For the Marshall accident.

A. Oh.

Q. Yes.

A. Oh, okay.

Q. And so I'm just curious, you know, if that was the evaluation that was done, you know, as -- after Marshall. Is the escalation procedure intended -- you know, what is the escalation procedure intending to correct that wasn't done properly as far as Marshall?

A. Well, we want to make sure that the -- that there's appropriate management oversight when there are anomalies on the pipeline.

Q. Okay.

A. Because -- you know, a second set of eyes.

Q. Yeah, yeah.

A. Yeah.

Q. I agree.

MR. PIERZINA: I think that it's for me.

BY MS. BUTLER:

Q. Okay. You mentioned, I think, when you started that you had restructured a bit within the team, and that that was in an effort to meet some initiatives. Can you tell me what those initiatives are?

A. Yup.

Q. Okay.

A. Well, I wanted to tackle several areas. So I'll compartmentalize them because it addresses -- transcends different things. So there was -- we'll talk about existing technology. Talk about maintenance, process, procedures, and standards, new technology.

So with existing technology, you know, as a manager of the team I want to ensure that -- I wanted to ensure and I still want to ensure that we are optimizing the capability of our current technology. And although I think, you know, we've done -- there's always room for improvement and we've done a good job, but in terms of our current MBS models to ensure that in terms of industry best practice and tuning efforts -- now, before we start investing a whole bunch of money, and that's a whole separate thing, I just want to make sure what we have is running the way it is -- it should, sorry, in an optimal fashion. So I wanted to

make sure that there were resources in place to address that. That's something we should be able to do right away. So that was one reason to add resources, subject matter experts to the maintenance and integration team and have our line custodians focused on fewer things. Okay.

Q. So just to speak to that one point a minute --

A. Uh-hum, yeah.

Q. When we want to make sure that it's running the way it should and we're going to be optimizing what we -- the asset that we have.

A. Yeah.

Q. Give me an idea of some things that immediately come to mind that had room for improvement.

A. Right. Well, I mean, from -- once again, as we're getting into technical details beyond my -- I'm not a subject matter expert. But one example might be an updated elevation profile.

Q. Okay.

A. Update fluid properties. Those kinds of things. Even just -- you know, modelers do tuning things. They have best practices, and I can't speak to that. But reducing thresholds of our alarms while not increasing more false alarms. So that is an initiative we had this past year where we've -- we have reduced leak detection thresholds on a number of models, but at the same time done the due diligence in testing to ensure that we're not

creating a bunch of false alarms for --

Q. Okay.

A. -- the operators. So that's one thing with existing technology.

And the same thing with the existing technology is to -- we're working very hard to understand what our limitations are of the technology and understanding the performance of leak detectability. We do that through testing and we're doing it through API 1149 calculations for theoretical detectability. And then proposing a cap of instrumentation so that the model can respond to smaller leaks.

Q. So you are proposing instrumentation improvements?

A. Yes. Yes, yes, yeah. Yeah, we have a -- we're working with senior management. A number of approvals have already gone through, but -- you know, the identification scope, the costing, presentation to senior management, and getting approval for funding to proceed with that. We've got a 3-year program to tackle the 28 MBS systems in order of priority. And priority's determined by our operational risk management group. So they've weighed in, in terms of identifying our highest risk pipelines for HCA density, et cetera.

Q. Okay. So stepping to back to two key points.

A. Uh-hmm.

Q. Proposing instrumentation changes, do they mean proposed changes occur on Line 6B console that you're aware of?

A. We're currently working on that. We're in the -- I guess we'll call it the class 3 estimate/detail engineering for 6B. It's one of many --

Q. Okay.

A. -- that will be going to construction in 2012.

Q. Do you know if the problem that surfaced during the Marshall event where we had a bypass station do the pigging and the transmitter reading pressure was inside of the block valve bypassing the station, so it wasn't reading dynamic pressure; it was reading static pressure.

A. Uh-hum.

Q. Do you know if that was fixed yet?

A. I don't know, but --

Q. Can you find out for me?

A. We can find out, yeah.

Q. That'd be great. That's an IR.

A. Okay, very well.

Q. And --

MR. JOHNSON: Can you just define that IR for me just so I know, Karen?

MS. BUTLER: Say that -- determine whether or not Line 6B pressure transmitters that would be reading static pressure during a bypass situation has been resolved. So that may hit Niles, that may hit LaPorte, that may hit multiple locations.

MR. JOHNSON: To determine whether or not Line 6B

pressure transmitter's reading on a static line?

MS. BUTLER: Reading static pressures when stations are bypassed has been corrected.

BY MS. BUTLER:

Q. Because it was my understanding from the transcripts that we had, Ray, that the leak detection analyst had declared some of the second set of MBS alarms to be false because they were in a bypass mode and the pressure transmitter was not actually reading what was going on, on the pipeline.

A. Uh-hum.

Q. And so they had forced some work-arounds in.

A. Okay.

Q. Because apparently they had the capability to be able to force an element into the model --

A. Right.

Q. -- through their diagnostics. And so --

A. Okay.

Q. -- it's just to make sure that that portion got cleaned up.

A. Right.

Q. Okay.

A. Yeah.

Q. So I think that would go along with your existing technology optimizing capability --

A. Yeah.

Q. -- and performance.
A. Uh-hum.
Q. Okay, then the other one that I want to understand a little bit more about, I think, is these 70 procedures. They are unique to the leak detection department and not both the control room, is that --
A. We would own those procedures, yes.
Q. So they're specifically for your people?
A. Yes.
Q. Okay. And they may or may not have additional impacts that the control room would be working to merge --
A. Right, yeah.
Q. -- (indiscernible)?
A. Yeah.
Q. Okay.
A. Yeah, just like I discussed on the first one procedure.
Q. Okay.
A. We're going to have to collaborate and get stakeholder input from the control center to ensure they're in agreement.
Q. Okay. So have you also looked at the weaknesses of your current leak detection software version?
A. So we are -- well, with GL Noble Denton, who's the owner of this, it's a --
Q. Can you say that slowly?
A. It's GL.

Q. Uh-huh.

A. And then the second word is Noble, so N-o-b-l-e.

Q. That's what I -- okay.

A. Denton.

Q. Okay.

A. So I think Stoner Pipeline Simulator -- that went from SPS to Advantica to GL Noble Denton.

Q. Okay.

A. I think that was --

Q. Yeah.

A. -- kind of how it went.

Q. Okay.

A. So we are currently going through a migration of our current software from version 9.3 to 9.8. And of course there's always enhancements if you go to a newer version, so we're working through that right now.

In addition to that, we are -- you know, to your question, even though I believe we have a state-of-the-art real-time transient model, we are doing a vendor assessment of other CPM-based technologies just -- and I'm not talking about alternatives or sensor-based things; I'm just talking CPM technologies. And we're going through that process right now, just to get some awareness as to maybe what another vendor has to offer that ours does not have in terms of a feature.

Q. Okay.

A. So we're going through that process right now. Does that answer your question?

Q. Partially.

A. Uh-hum.

Q. So I'm going to follow up with the part I want to clarify.

A. Okay.

Q. And that is that as we've done this migration to this newer version, two questions: One would be, did that impact any of these 70 new procedures? Like was the new version capable of doing some things that the old version wasn't and so thereby that's part of a new procedure creation?

A. Well, because we haven't migrated to 9.8 yet, it's a project that's going --

Q. Okay.

A. -- going on. But the procedures are focused on what we have today.

Q. Okay.

A. And it could very be what you're saying and we probably need to re-look at those to make sure they're valid with the new version.

Q. Okay. So when you say it's a project going on, does that mean that you're testing behind the scenes but you're not using?

A. Right.

Q. Okay. Does that mean that you have purchased it or you're just testing as to whether they've given you some type of deal where you can test it on a loner basis and then decide?

A. No, we're more than likely going to be migrating --

Q. Okay.

A. -- to 9.8. Yeah.

Q. So there may be revisions of procedures down the road from that?

A. Yes. Yeah.

Q. Okay. Are there -- because they will have given you some insight as to the advantages of that new software, is there anything that they've indicated to you that it will take away that's a problem with your existing software?

A. No.

Q. Okay.

A. Absolutely not. No.

Q. Okay. On the elevation profiles -- we're back -- I'm shifting back to the existing technology that you said you were going to work to optimize, and one of the ways you mentioned was we're going to go through and make sure we've looked at our elevation profiles and updated that information. Do you know was there any elevation updating that's occurred already on Line 6B's model?

A. I don't know.

Q. IR: Any elevation updating occurring on Line 6B leak

detection model?

Is there anything that you viewed in your initiative list that was designed to enhance the ability of detecting leaks in a downed pipeline situation?

A. Well, certainly I talked about the testing and research team having a mandate of researching alternative technology, so we are doing that. Whether the -- whatever technology it may be and, you know, I won't go into the various ones that are available. Each one's -- each one has strengths and weaknesses. But some of those would certainly be able to complement our existing system in terms of a shutdown pipeline and sensing a leak. So we're looking at technologies, yes.

Q. So is there anything right now that independent of flow moving and just looking at pressures along your pipeline --

A. Right.

Q. -- versus elevation profiles, versus your CMT tracking, is there anything anybody's just considering building themselves with those components?

A. And when you say building themselves, what do you mean?

Q. Meaning you look at a pressure, and you know from your own hydraulic models what you believe is filling the line based off of pressures.

A. Right.

Q. You could look at that on a --

A. Yeah.

Q. -- down basis --
A. Yeah.
Q. -- and then look to see if that fill, based on pressure profile, looks different from a shutdown with a similar pressure profile.
A. If that fill looks similar? You lost me there. I'm sorry.
Q. Okay, so you're -- if you have a leak?
A. Yes.
Q. The line balance is going to be moving?
A. Right.
Q. Even in a downed pipeline, right?
A. Uh-hum.
Q. You may not see flow through a meter?
A. No.
Q. But you will see changes in a pressure?
A. Absolutely.
Q. So there could be a mechanism put in place that takes that value and does something with it, that information and does something with it. It may not be an MBS alarm. It may be an indication of an imbalance in a down pipeline --
A. Right.
Q. -- condition that doesn't make sense with these pressures.
A. Right. So my comment would be when you say it may not

be an MBS alarm, I would say, well, that's actually how our MBS system is designed to operate.

Q. So it will operate off of pressures only?

A. It will -- our MBS system is designed to monitor mass flow in the pipeline.

Q. Right.

A. And so as you get temperature or pressure fluctuations, it's always continuously doing that calculation of mass/balance.

Q. Okay.

A. So in a down pipeline situation, it -- if it's within the leak detectability and the performance of the model, it will alarm on --

Q. Okay.

A. -- on a down pipeline.

Q. And it should accurately alarm?

A. Yes.

Q. Correct.

A. Yeah.

Q. Okay. So you consider your leak detection system to be functional at all times?

A. Yes.

Q. No matter what the pipeline's doing?

A. That's correct.

Q. Okay. Thanks for that clarification.

A. Uh-hum.

Q. All right. So have you gone through the leak detection system specifically to Line 6B consoles? Because obviously there's more than one pipeline on that console.

A. Yeah.

Q. And verified that the instrumentation is valid for pressures on those pipelines?

A. And when you say valid, what are you asking?

Q. Meaning that it actually in a shutdown situation would show you a correct pressure for a point on the pipeline?

A. I don't know. We can make that --

Q. Okay.

A. -- an IR.

Q. Okay.

MR. JOHNSON: Maybe I don't understand the question, Karen, to write an IR.

MS. BUTLER: Well, my previous IR was geared around the facts that you have -- we have a known issue that surfaced on Line 6B, right --

MR. JOHNSON: Uh-hum.

MS. BUTLER: -- where we were preparing to run a pig. We run pigs on lots of lines at Enbridge, right? And so what I was wondering is have we actually done an inventory -- pressures are so critical to mass balance. Have we actually done a review of all of our pressure instrumentation on all of our pipelines to make sure that when the pipeline's down that pressure is actually

reading line pressure and not behind some blocked valve? Make sense now?

MR. JOHNSON: So -- and we have redundant transmitters. We have them on the main line and we have them in the station in, like in the case of Griffith. We had one in the station that we were reading as main line. So that's the verification you're wondering if it was done?

MS. BUTLER: It was my understanding that in some cases what we view as main line pressure is actually behind or located towards --

MR. JOHNSON: That would be on station piping.

MS. BUTLER: -- the unit side of station piping. So what I --

MR. JOHNSON: So we've done that, but I'll get the verification for that.

MS. BUTLER: Okay. That's great. I'm --

MR. NICHOLSON: Is that all you got?

MS. BUTLER: That's it.

MR. NICHOLSON: I know it's very tempting to go operations (indiscernible).

MS. BUTLER: No, because this -- well, this is the only thing on leak detection -- this speaks to accuracy.

MR. NICHOLSON: No, that's --

MS. BUTLER: That's it.

MR. NICHOLSON: Okay. Well, then, do you have anything

else, Brian?

BY MR. PIERZINA:

Q. Just real quickly. You talked about the instrumentation improvements, and I was real curious what the nature of those instrumentation improvements are.

A. Okay. Well, primarily additional flowmeters and pressure transmitters and temperature transmitters.

Q. Okay, so mid-line flowmeters?

A. Yeah. And we have those already, but depending on the scenario, we may want to replace a legacy piece of technology in terms of our ultrasonics or we -- you know, if it's -- yeah. Or if there's not one there, kind of decreasing the amount of mass in between the flowmeters and decreasing like cumulative error then for the MBS system.

Q. Okay. So did I hear you say replacing existing flowmeters as well as installing new flowmeters at new locations?

A. Yes. Yeah, well, we'll be -- it'll be a combination of both. I mean, we've got 28 pipelines that we've looked at, so each one is a little bit different.

Q. And did you say additional pressure transmitters?

A. Right, yeah.

Q. Okay. And are we talking mid-line pressure transmitters or something different to that?

A. Yes. Yeah, yeah.

Q. Right.

A. So, for example, a scenario might be there's a sectionalizing valve that's remotely controlled but there's no pressure transmitter. So we'd want -- everything's there, so we'd want to add a pressure transmitter. That's very low hanging fruit or, you know, an opportunity for us to gain better monitoring information.

Q. Right. Right, because you've already got other instrumentation there. You've got signals; you've got SCADA communications; you've got --

A. Right. Then there are other -- there are other cases where we may have to retrofit it with other devices if it's not remotely controlled, as you probably know, yeah.

Q. Yeah. We already have a tab --

MR. NICHOLSON: Okay. Barry, you got any follow-ups?

MR. STRAUCH: None for me.

MR. NICHOLSON: Okay. Jay, anything you want to --

MR. JOHNSON: No.

MR. NICHOLSON: -- get in? Okay. All right, thanks, Ray. I think we're going to go ahead and conclude this part of the interview.

MS. BUTLER: Jay --

MR. NICHOLSON: And we'll go off the record.

MR. PHILIPENKO: Yes?

MS. BUTLER: -- I do want one more IR.

MR. JOHNSON: No, sorry, the interview is concluded --

MS. BUTLER: No, I can --

(Whereupon, the interview was concluded.)

CERTIFICATE

This is to certify that the attached proceeding before the

NATIONAL TRANSPORTATION SAFETY BOARD

IN THE MATTER OF:	ENBRIDGE - LINE 6B RUPTURE IN MARSHALL, MICHIGAN Interview of Raymond Philipenko
DOCKET NUMBER:	DCA-10-MP-007
PLACE:	Edmonton, Alberta, Canada
DATE:	November 16, 2011

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

_____
Kimberly Hawkins
Transcriber