UNITED STATES OF AMERICA

NATIONAL TRANSPORTATION SAFETY BOARD

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

Interview of: DAVID SCOTT

Crowne Plaza Hotel
Edmonton, Canada

Tuesday,
December 14, 2010

The above-captioned matter convened, pursuant to notice.

BEFORE: MATTHEW NICHOLSON
Investigator-in-Charge

APPEARANCES:

MATTHEW NICHOLSON, Investigator-in-Charge
National Transportation Safety Board
Office of Railroad, Pipeline, and
Hazardous Materials Investigations
[redacted]

RAVINDA CHHATRE, Accident Investigator
National Transportation Safety Board
Office of Railroad, Pipeline, and
Hazardous Materials Investigations
[redacted]

BRIAN PIERZINA, Engineer
PHMSA
[redacted]

JAY JOHNSON, Senior Compliance Specialist
Enbridge Energy Company, Inc.
[redacted]

KAREN BUTLER, Supervisor
Accident Investigations
PHMSA
[redacted]

CURT GOESON, Control Center Supervisor
Enbridge Oil Company, Inc.
[redacted]

I N D E X

I N T E R V I E W

MR. NICHOLSON: Okay. Good afternoon. Today is Tuesday, December 14th, 2010. My name is Matthew Nicholson. I'm an Investigator with the National Transportation Safety Board in Washington, D.C. We're currently in Edmonton, Canada at the Crown Plaza Hotel. We are meeting in regards to the pipeline spill in Marshall, Michigan that occurred on the 25th of July, 2010. This is case number DCA-10-MP-007.

Before we begin, Dave, I would like you to please state your name and whether we have permission to record you for this interview.

MR. SCOTT: My name is David Scott and yes, you can record this.

MR. NICHOLSON: Okay. Also, if you would like, you're permitted to have one other person present during these interviews. That can be a supervisor, friend, family or nobody at all. So I would just like for you to state on the record, who your choice was to be here with you.

MR. SCOTT: My choice is Curt Goeson.

MR. NICHOLSON: Okay. All right. And we wanted to ask you that without Curt here so you would feel comfortable answering that candidly, okay? So if there's any reservations, feel free to speak up.

I'll go around the room now, I guess, and have each person introduce themselves, the organization they're with, the

spelling of their name and maybe a business e-mail or a business phone number for contact. I'll start.

My name's Matthew Nicholson. That's spelled N-i-c-h-o-l-s-o-n. I'm with the NTSB in Washington, D.C. My contact information is [redacted].

MR. CHHATRE: Ravindra Chhatre. That's R-a-v, Victor, i-n-d-r-a. Last name Chhatre, C, Charlie, H, Harry, H, Harry, A, apple, T, Tom, R, Robert, E, Edwards. I'm with National Transportation Safety Board. I'm Investigator and here assisting ISE Matt Nicholson. My e-mail is [redacted]

MR. PIERZINA: And I'm Brian Pierzina, an Engineer with the PHMSA [redacted] and the last name is P-i-e-r-z-i-n-a and my e-mail is [redacted].

MR. JOHNSON: And I'm Jay Johnson, a Senior Compliance Specialist in the Pipeline Safety Compliance Group [redacted]

MS. BUTLER: Karen Butler and I am PHMSA's Supervisor of Accident Investigation and my e-mail address is [redacted]

MR. SCOTT: My name is David Scott, D-a-v-i-d-e -- or -- S-c-o-t-t. I'm an Employee of Enbridge Pipeline's Control Center.

MR. NICHOLSON: Contact information?

MR. SCOTT: Dave,[redacted]

MR. NICHOLSON: And Curt's not here right now. Curt

will be joining us later.

So for this round, Karen -- excuse me -- I think we'll start with you.

INTERVIEW OF DAVID SCOTT

BY MS. BUTLER:

Q. Yeah. Dave, the reason that we're going to cover some of these first is because we want to make sure that we don't put you in a difficult position as we're asking some questions about your leadership, meaning, not you, personally, but those that would provide leadership to you. And we also want you to definitely know that our goal in any accident investigation is to make sure that we learn the details about it to the point that we can make sure it doesn't happen again, in an effort to totally protect the public.

And sometimes, when we get into that, we have to get into discussions about roles and responsibilities and supervisors and what their technical background is and how they might tell you things. And so, from that, I want to be able to ask you a few questions and just based on your experiences and what you've seen; nothing more than that. So as we go through this, don't jump to any conclusions, okay?

A. Okay.

Q. All right. So as we've gone through the interviews on behalf of several of the controllers, including shift leaves and controllers like yourself, it's kind of come to our attention that

there's some areas where maybe the authority or the responsibility or who is making what call isn't so clear. So we need your help with that.

So when a leak detection alarm comes in, in your opinion, is the leak detection analyst an expert on that?

A. More of an expert than I am.

Q. Okay.

A. I mean, he has training in reading the information.

Q. Okay. So when he or she would look at the leak detection information and say we have this column sep situation, in your view, are you supposed to determine if it's column separation or is the fact that he told you and he's an expert, where that stops and you just go on from there?

A. I would take their word.

Q. Okay.

A. I mean, there's -- the thing is, if I disagreed, then I would say so, but --

Q. Okay.

A. -- they are the experts.

Q. Okay. All right. Now have you always functioned that way in the control room, to your knowledge, just like the ambiance analyst reviews it, makes a call and then passes that on to you or was there a period of time, to your knowledge, where it didn't quite function that way?

A. There was a period of time it did not function that way.

Q. Okay. What do you think made that change?
A. Having the specialists in the room.
Q. Okay. Did they used to be located elsewhere?
A. Yes.
Q. All right.
MR. JOHNSON: Maybe just so I'm clear on that. So it's changed now because the MBS analyst or specialist is in the room with the control folks as opposed to, they used to be someone you would contact via telephone?
MR. SCOTT: Yes.
MR. JOHNSON: Okay.
Q. Okay. And one of the things that really wasn't too clear to us is, it seems like when we have situations and we've got to bring it to the shift lead's attention, that sometimes, the shift leads are involved in that and sometimes they're not, that sometimes, the shift leads may understand what's happening. Sometimes, they may not. What's your take on that?
A. They would understand what's going on.
Q. Okay. And have they always provided you technical information support the way you need it?
A. Yes.
Q. Okay. And so, do you feel that your shift leads, with their current background, is suitable?
A. Yes.
Q. Okay. What about other leadership? Do you have any

concept of the fact that, when you call out in the middle of the night and they make a decision to override the ten minute rule, do you believe that they've got the technical background to make that call?

A. It depends on who -- are you talking about the people in the control room or upper -- people above them?

Q. People above them. I think you previously said it depends. Is that the way you would like to answer that?

A. Yes.

Q. Okay. All right. And one of the things that has seemed a bit awkward to us is that when leadership has been involved in assisting with decisions like ten minute rule, they didn't always ask, necessarily, the right questions. So when you've gone through training in relaying information to leadership in that type of case, do they give you a specific set of information you need to communicate every time or is it totally dependent upon the questions that the leadership asks of you?

A. Depends on the questions that leadership asks. They would ask me for what I saw, the pressures that are there, were there --

Q. Okay.

A. -- which should be all off the historical data.

Q. Okay. Okay. All right. And regarding -- I think that you were one of the ones that, from previous information, we were told, hasn't been in the control room recently. Is that correct?

A. I have not been in -- I was in the control room about three weeks in the last year --
Q. Okay.
A. -- as a trainee operator.
Q. Okay.
A. I have not been in since.
Q. Okay. Since Marshall, have you been in the control room?
A. Not as an operator.
Q. Okay. And since you haven't been in since Marshall happened, did they discuss with you why?
A. Not really.
Q. Okay. What did they --
A. It's a requirement.
Q. What did they say to you?
A. That we're all being pulled off shifts just for the investigation. It would be the same as a policeman.
Q. Okay.
A. You know, being involved in an incident, he's taken off the street.
Q. Okay.
A. So we have been taken out of operations.
Q. Okay. All right. So from your perspective, they did that precautionary until they figure out what's happened?
A. Yes.

Q. Okay. Did they mention anything other -- more specific than that at all to you?

A. No.

Q. Okay. All right. So when we talk about -- I'm just going to talk now for a minute about like, metrics or ways they measure operator performance. Have they discussed with you in the past, specific metrics or types of things that they look for to determine whether an operator's handling things sufficiently or not?

A. Yes.

Q. Okay. So --

A. It's been -- we have -- or we have the metrics before?

Q. Yes.

A. Yes.

Q. Okay. So can you discuss with me, just in general, what some of those might be?

A. Watching you do simulations on the simulator --

Q. Okay.

A. -- seeing how to control a number of different activities.

Q. Okay.

A. You know, it could be your personality --

Q. Okay.

A. -- you know, of handling stress and dealing with people.

Q. Okay.

A. That's about it.

Q. All right. So have you ever had occasion where they talked to you about a specific metric that you needed to improve on?

A. Personally?

Q. Yes.

A. No.

Q. Okay. All right.

A. Well, unless you consider attitude sometimes, but --

Q. That's okay. And then, did -- is there anything specific that comes up through a bonus type of program or anything that is like a reward program for you?

A. As to how good our metrics are?

Q. Or how they would say, monitor your performance or how they would measure your performance ability.

A. Well, we do performance reviews every year.

Q. Okay.

A. We do -- the company does profit sharing, but that has nothing to do with -- that's how good the company does as an overall.

Q. Okay.

MR. JOHNSON: The one facet of it is based on your individual performance, you know, your department metric, the company's metric, if they did good and then one form of your (indiscernible) is based on your performance (indiscernible) --

MR. SCOTT: Small.

MR. JOHNSON: Okay.

MR. SCOTT: Small portion.

Q. Okay. So on that small portion, that's just pretty much tied to your performance review outcome?

A. Yes.

Q. Okay. All right. Okay. And if we were to try and make sure that this particular event didn't happen again and we -- and no other controller was like, put in the situation you were, is there any one specific thing or maybe there's two or three that you would recommend to us be implemented in an effort to help assist with that?

A. Follow the ten minute rule.

Q. Okay. All right. Is there any type of additional alarming that you would request?

A. Not off the top of my head.

Q. Okay. Have you, in the past, recommended enhancements for the control room?

A. Years ago.

Q. Okay. Have you done any recently?

A. No.

Q. Is there a reason why?

A. Well, I haven't been there in the last year.

Q. Okay. So it's just being away?

A. Yes.

Q. That would be fair? There's nothing else that like, discouraged you from recommending enhancements?

A. No.

MS. BUTLER: Okay. All right. I think that that's probably all the questions I really had where we needed, potentially, Curt out of the room. So with that, if you want to bring him back, that's fine.

MR. NICHOLSON: Okay.

MR. JOHNSON: Of course, he went downstairs.

MR. NICHOLSON: Did he go downstairs?

MR. JOHNSON: Well, he doesn't want to -- you know, he doesn't want to be --

MR. NICHOLSON: Yeah.

MR. JOHNSON: -- lurking in the hallway with his ear to the door or give that perception, so --

MS. BUTLER: Well, and Dave, we're glad that you're back and things are going, you know, as well as can be expected, I guess. So just happy when anyone's gone through, you know, a serious period of time that they're back.

MR. SCOTT: Thank you.

MS. BUTLER: We will wait a little bit so that you may feel more comfortable, like we're not asking you to answer questions without your representative.

MR. SCOTT: No. That's fine.

I've had to give up my second career, but --

MS. BUTLER: You had to give up your second career?
MR. SCOTT: Yeah. I no longer can dive.
MS. BUTLER: Really?
MR. SCOTT: Yeah.
MS. BUTLER: And so you were a big scuba diver, huh?
MR. SCOTT: Yes.
MS. BUTLER: And --
MR. NICHOLSON: You know, I'm going to turn these recorders off.
MS. BUTLER: Sorry.
(Off the record.)
(On the record.)
MR. NICHOLSON: We're back with Dave Scott. We've got Curt Goeson. Curt, if you would introduce yourself on the record, please?
MR. GOESON: I'm Curt Goeson, Control Center Supervisor. I work for Enbridge Pipelines. Contact information is Curt, C-u-r-t, .Goeson, G-o-e-s-o-n, @enbridge.com.
MR. NICHOLSON: Okay, Karen.
MS. BUTLER: Are we going back around the room?
MR. NICHOLSON: Yeah. We'll just go ahead and finish up your questioning because I think a lot of what you've got overlaps with what --
BY MS. BUTLER:
Q. I think the only real question, Dave, that I had for you

is, when you were stopping and shutting down the pipeline based on a planned shutdown, had there been specific mechanisms and training as to how to do that?

A. Yes.

Q. Okay. And what does that training include?

A. Running the simulator --

Q. Okay.

A. -- on the simulator.

Q. Okay.

A. Doing a number of scenarios like that.

Q. All right. And did it -- on the simulator, did it step you through a step-by-step process or were you allowed to just interact with it and it would give you some output and then somebody would cover that with you?

A. There was a trainer with you.

Q. Okay.

A. He would let you do it and then he would explain what was right or wrong.

Q. All right.

A. You know.

Q. And so do you remember anything specific out of that training?

A. Yes. You watch --

Q. Okay. What was that?

A. How to watch your pressures.

Q. Okay.

A. And then, you know, stop the units accordingly.

Q. Okay. Have you had a chance to look at the alarm log at all since the event?

A. No.

Q. Okay. All right. Do you remember getting a low suction pressure at Marshall?

A. Yes.

Q. Okay. What did you think that was connected to?

A. Not enough holding pressure at Stockbridge, column separation.

Q. And do you remember getting some LPM invalid pressure alarms?

A. I don't remember.

Q. Okay. Do you remember shutting a unit down, like Unit 2 at Marshall, that maybe there was low suction pressure that came in just before that?

A. No.

Q. Okay.

A. It may have been very close.

Q. Okay. All right. To your knowledge, has there ever been any problems with the system in that, it might show a time stamp, but it's not actually displayed in your alarm log at that same time?

A. Not that I'm aware of.

Q. Okay. Are you familiar with ever seeing something called a system alarm that might say RTAP too busy to process?

A. Yes, I've seen that.

Q. Do you know what causes that?

A. No.

Q. Okay. Do you do anything about it when that happens?

A. If it continues, then I would tell the shift lead.

Q. Okay.

A. If it's only one alarm.

Q. Okay. Okay. It looked like we changed the holding pressure at Stockbridge and then we had a Griffith injection valve that traveled closed in this log, but it doesn't necessarily show the command. Is that because you had asked someone else on another console to open that valve -- or to close that valve? I'm sorry.

A. Would that be at Griffith?

Q. Yeah. Griffith injection valve S-FFB-375.

A. Okay. That would be the Griffith terminal operator.

Q. Okay.

A. I would have asked him to stop it once he's -- to stop his boosters. I would have asked him to stop his booster so I could stop my pumps.

Q. Okay.

A. I would not specifically ask him to close that valve. That's his protocol.

Q. Okay.

A. Or her. Sorry.

Q. But you would just let them know that you're getting ready to shut down the line. Is that --

A. Yes.

Q. Okay. And then they do whatever they need to do as a result of that?

A. Yes.

Q. Is that a conversation you recall having like, you just call out because they're so close in proximity or do you pick up the phone?

A. I talk to him because he's about -- or he or she is about seven feet away from me.

Q. Okay. Okay. And did you ever close a sectionalizing valve on that stop?

A. After a line was shut down? Yes.

Q. Yeah.

A. I closed a sectionalizing valve.

Q. Okay. Do you remember which one?

A. Not off the top of my head. It's a standard valve that we close.

Q. Okay.

A. Believe it's at Minden.

Q. Okay. Would that have been shown as like, one of your routine valve indicators?

A. Yes.

Q. Okay. And Theresa was there because of what, in your opinion?

A. She was my mentor. I'm a trainee.

Q. Okay. And does that have any specific associations like OQ or anything else in your mind?

A. Yes.

Q. Okay. So what does that mean in OQ language?

A. Well, I just had come back to operating, so she was training me. OQ's would be done by the shift leads.

Q. Okay. So would you be getting prepared to go through OQ then?

A. Down the road? Yes.

Q. Yeah. Okay. And so if I said you're currently not qualified, would you agree with that?

A. Yes.

Q. And so, Theresa is qualified or was qualified at that time?

A. Was qualified at that time. Yes.

Q. Yeah. Okay. All right. And so she was there to watch over what you were doing?

A. Yes.

Q. Okay. Have you ever heard the term span of control?

A. No.

Q. Okay. All right. Okay. Do you, as a controller, have

any input -- or as a previous controller, do you recall having any input into the descriptors that come out along with an alarm or a command?

A. A long time ago. Yes.

Q. Okay. Do you -- all right. So previously, you did. Okay. And on this BFD, on Line 6A, it keeps going in and out of maximum alarm. Do you recall that on your shift?

A. Yes.

Q. Okay. So every time that shows cleared, did you receive a previous alarm that indicated it was in the alarm state or is it just going, toggling like cleared, cleared, cleared?

A. No, it's a, if I'm correct, (indiscernible) maximum operating speed.

Q. Okay. And what do you have to do to -- do you have to do anything or does it just come in and out by itself?

A. It comes in and out by itself, but I may actually try and slow it down a bit so it would quit alarming.

Q. Okay. Do you normally have to do anything if it doesn't quit alarming?

A. No.

Q. So it's just something you kind of have to put up with?

A. You would try and ramp the speed down to make it quit.

Q. Right. But if that wasn't sufficient or you just couldn't do that, you just continue to put up with the chattering alarm?

A. Yes.

Q. Okay. Okay. And when we look at things like unit and it says that it's a hot unit, you told it to go down and it's now off and then, in parenthesis, it'll say off to the right, the descriptor, that it was a hot unit. Does that mean you should put it up or not put it up after that?

A. Should I restart it?

Q. Does it mean anything to you? Some of the descriptors -- let me re-clarify the question. It wasn't -- it was poorly worded on my behalf. I'm sorry. When you have a unit shutdown and it tells you that it's off, sometimes in the alarm log, it will say hot unit in parenthesis beside it and sometimes, it will not. Is that supposed to tell you anything, as an operator?

MR. NICHOLSON: If you want a reference, it's -- if you look at Line 1663. I'm sorry, 1662 in that left-hand column there. You can find Item 1662 there and read over to the right, the description.

MR. SCOTT: Okay. So that unit is now off, which means it was running, I stopped it or it was stopped and it is in a hot sequence.

Q. Okay. So when it's in a hot sequence, does that affect your decision-making at all or does that do anything in particular?

A. No.

Q. Okay. All right. All right. And when you get LPM

alarms where it says invalid pressures, may not be able to detect over pressure, does that cause you to think anything specific?

A. Yes.

Q. Okay. And what would that be?

A. I would look at it and if your pressures are too low, then the instrumentation can't read properly or if it's too high, it couldn't read properly because it only has a certain span.

Q. Okay. So if it's too low or too high, we've got issues; is that correct?

A. You could have issues. Yes.

Q. Okay. All right. In any event, that software has a problem. Okay. And do you happen to know what the low settings on that are?

A. No.

Q. Okay. Can you see them anywhere?

A. No.

Q. All right. So you're kind of at the mercy of the programmer?

A. Yes.

Q. Is that something -- that particular system, do they go over training on that?

A. No.

Q. All right. So normally, if that were to come in, then you would attempt to investigate as much as you could as to why it might be happening?

A. Yes.

Q. And what would you do to investigate that?

A. See how my pressures had trended.

Q. Okay.

A. Was there an instrument error?

Q. Okay. Do you recall that you (indiscernible) to that on this particular day?

A. I don't recall.

Q. Okay. Do you recall, was there any activities going on on any other pipelines that are on this console that tied up your time?

A. None that tied up my time. No.

Q. Okay. What about any -- was there a lot of phone calls or anything in that regard?

A. Not an overabundance at that time.

Q. Okay.

A. The only other call I made was to the electrician and the pig tracker.

Q. Okay. And what was in those calls?

A. The pig tracker was to confirm that the pigs had stopped moving.

Q. Okay.

A. And to the electrician, that the line was shut down and he was safe to bypass the station.

Q. Okay. And what station would he be bypassing?

A. Minden.

Q. All right. I think, for now, that's the bulk of what I needed. One other question. Sorry. And that is, when you bet an MBS alarm that's that five minute alarm, what do you typically do with that?

A. Call the shift lead.

Q. Okay. And did you?

A. Yes.

Q. Okay. And are you aware of anything specific in front of -- on the alarm descriptor -- Matt, if you could show him like, Page 37, Line --

MR. NICHOLSON: Give me a (indiscernible) number. Our pages don't match.

MS. BUTLER: 1679.

MR. NICHOLSON: This is highlighted in blue at the bottom there.

Q. Now sometimes on these descriptors, they'll be -- it appears in front of the MBS. There will be some numerical number. Does that mean anything to you?

A. Are you referring to the F6?

Q. No. That one I know. It's the one ahead of the MBS. It will say like 7 something MBS.

A. No.

MS. BUTLER: Okay. Okay. I think, for my part, I've got what I needed.

MR. NICHOLSON: I'll just go backwards. Jay, you have anything you want?

MR. JOHNSON: No, I don't.

MR. NICHOLSON: Questions? Brian?

BY MR. PIERZINA:

Q. Just a couple of quick ones, I think. The communications with the pig trackers, how is that structured? Do they -- to you call them? Do they call you?

A. They normally us when the pigs go past the mile post. I will call them in the event of a rate change, upcoming event, a shutdown or something so they're aware or a startup.

Q. Okay. How often do they call you?

A. About once an hour or every couple of hours, depends on the spacing.

Q. All right. More frequently as you're approaching the station?

A. Yes.

Q. Okay. Have you trained any other operators in your career?

A. In my career?

Q. Yeah.

A. Yes.

Q. Okay. When was the last time you trained an operator, roughly, just --

A. As an operator? It would have been in the 1980s.

Q. Okay. So it's been awhile since you trained anybody then?

A. Yes.

Q. Okay.

A. As an operator.

Q. Sure. Would you expect an MBS alarm to clear on a shutdown?

A. Yes.

Q. Why?

A. Most times.

Q. Well, any particular reason why?

A. Because, during a shutdown, the two different systems may not be having the same -- gathering the same information at the same time, so there might be a little time lag in there.

Q. Okay.

A. So it may miss. And once the shutdown is done, then everything equalizes out.

Q. Okay. As far as the alarm severities, the S2, S4, which ones do you report to the shift lead?

A. S8's.

Q. S8's? So those are always reported? And how about like, an S7? Is there an S --

A. No.

Q. There isn't an S7? Okay. S6's?

A. Yes. Some would be reported to the shift leads.

Q. Some would be reported. Which ones? Is it dependent on certain instances?

A. Depends on, yes, circumstances. If a unit locks out, then I'm not going to report it to the shift lead. I'll fill out the forms and phone the electricians.

Q. Okay. So on -- let's say on the S6 alarms and whether or not they're reported to shift leads, is that something that will vary dependent on an operator, you know, or would you expect that operators would do the same thing? You know, for certain S6's, they would be reported; other ones they wouldn't or -- I guess I'm curious how you get consistency when it's, you know, dependent -- you know, depends on something, you know?

A. Well, I can say, if it was a unit locking out -- if it was a seal failed, then I would tell the shift lead because there might be a potential -- I would also call out the electrician or a mechanic, whoever is on call or at that station.

Q. Okay. So a seal fail, that's going to be a leak, right?

A. Not necessarily.

Q. Not necessarily. Okay. All right. So and you can always speak, I imagine, to what you would do. So if you're -- I don't know. Maybe I should ask, is it ever an issue as far as consistency reporting alarms to shift leads? Has that ever come up, you know, in a team meeting say we need to have these reported or something like that?

A. There would be some, I would presume, that are, you know

-- but mostly, it's very consistent.

Q. Okay. Have you ever shut down a line on the ten minute rule?

A. Yes.

Q. Okay. Can you recall how recently when -- like when the last time you've ever done that could be?

A. No.

Q. Okay. And that's fair enough. Do you recall whether or not it was actually a leak?

A. The last one I can remember that I shut down was 2007, January 1st.

Q. That sounds like it was a leak.

A. Yes. It was less than ten minutes, there were no alarms.

Q. Okay. Is that Owen?

A. That's Owen.

Q. All right. Okay. So -- and it was less than -- you saw it dropping pressure and shut it down?

A. Yes.

Q. Okay. Fair enough.

MR. GOESON: It wrecked my day, thank you very much.

MR. SCOTT: It wasn't my idea. It ruined mine too.

MR. PIERZINA: Go ahead. I'm done.

MR. NICHOLSON: Are you finished? Okay.

MR. PIERZINA: Okay.

MR. NICHOLSON: Ravinda, do you want to go?

BY MR. CHHATRE:

Q. Yeah. You said you have been, I guess, going through training for a month before the incident? Three weeks?

A. Yes.

Q. Was it the first time you entered the training -- I guess the control center after the break? You were on -- you were out of the control center --

A. Yes.

Q. -- doing duties. And how long that was, how long you were out of control center?

A. Six months.

Q. And when you came back, did your supervisor discuss with you how long you were -- mentoring (indiscernible) to be?

A. Yes.

Q. And what duration would that been?

A. There was no time frame.

Q. So what (indiscernible) --

A. It was on --

Q. -- indefinite?

A. Indefinite.

Q. Okay. And so when it would get terminated, meaning, you become qualified, was some kind of a goal mentioned or --

A. No.

Q. You had to have a certain length of duration or I guess,

skills you had to achieve before anything ends or was it completely open-ended, that you had no idea (indiscernible) and what you had to do to finish it?

A. I knew where I had to go, but there was no time frame for me to have it done. There was no specific dates set.

Q. Okay. And what those special goals would be for you to be (indiscernible)?

A. I had to re-qualify in all my OQ's --

Q. Okay.

A. -- operator qualifications.

Q. And how --

A. I had to do an ERT training session.

Q. And for OQ, what you had to do?

A. I had to do a number of maneuvers. I had to do all the maneuvers that I would be -- have to do on my pipelines --

Q. Okay.

A. -- under the supervision of my direct supervisor or my shift lead and then I would have to answer a number of questions relating to those skills.

Q. So this was on the job training, not simulator type training that you had to go through?

A. There would also be simulator training.

Q. Okay. And who decided you are ready to go through that OQ training exam, whatever the case may be? You decide or supervisors?

A. My mentor.
Q. Okay.
A. The training facilitators.
Q. Now do your mentor know that you are there kind of an indefinite or open-ended (indiscernible) period? Do you discuss with her the duration or goal would be?
A. No. We hadn't got that far yet.
Q. Did she ask you that -- how long you were supposed to be mentored?
A. No. She would have that conversation, I presume, with the training people. I had actually only been with Theresa two weeks.
Q. Okay. But at the beginning, there was no discussion as to how long it will be or what she will be doing to kind of mentor you or what she'll be looking at, any discussion of that nature?
A. Not -- I do not know.
Q. On the day of the incident, did your supervisor (indiscernible) tell you anything that, what you should be watching or when you should be contacting her for input?
A. Not my shift lead. No.
Q. Okay.
A. Are you talking my shift lead or my mentor?
Q. Your mentor. I'm sorry. Your mentor. Your mentor is the one who's going to train --
A. Train you.

Q. -- you?

A. Yes. We discussed it earlier.

Q. And what was the nature? Do you recall?

A. No.

Q. During the course of your, I guess, duties that day, did you ever discuss anything about when -- that you are monitoring with your mentor?

A. Yes.

Q. And what was that about?

A. The schedules, the work that was going on with the pig trackers.

Q. Were there any problem mentioned to her that you needed your help or input?

A. No.

Q. How much time you think she actually spent with you, I mean, looking over your shoulder or discussing what you need to do or -- that day, as a mentor?

A. Every time I was doing something, she was watching me.

Q. And when you say watching, you mean she was talking to you or how do you know she was watching you? That's what I'm asking. I mean, she look (indiscernible) shoulder or is she telling you, saying how, yeah, you are doing it right or no, this is what you should do? How would you know that she's watching you?

A. A couple times, she was just sitting behind me and I was

doing it right, so she didn't say anything.

Q. Okay.

A. And a couple times, she made comments. Most of the day was very --

Q. Uneventful?

A. -- uneventful.

Q. Was she giving you input when you are doing something right, saying hey, that is -- that you are doing it right?

A. No.

Q. No. Was there anything you did wrong that day that she gave you input that, hey, this is not the way to do it?

A. No.

Q. Is it reasonable to say that you are pretty much operating the line on your own?

A. No.

Q. Going back to my, ten minute, I guess, question on that mass (indiscernible) or column separation rather. Was there any discussion with your mentor that (indiscernible) five minute column separation? Did you discuss that with her that day?

A. Yeah. I told her that I had the five minute alarm and then I called the shift leads.

Q. Okay.

A. I proceeded to complete -- to shut down and talk to her about the pig trackers and stuff.

Q. What is a five minute alarm? Can you tell me? I think

there's a ten minute alarm then you have to do something different. What is the five minute alarm?

A. The -- it's a five minute imbalance on the leak detections system.

Q. Okay. So would your previous experience and your one month mentoring, what would trigger, in your mind, that there's a potential for leak? What are the telltale signs that you would consider that, hey, there may be a leak on the line?

A. If the line's running. If the line is running, you mean? That you would have a steady line, you'd have good pressure and then you would have no pressure.

Q. Okay.

A. Or you would start --

Q. The pressure dropped?

A. Yes. Pressure drop.

Q. Okay. Is that the only symptom that you're looking for mainly?

A. It's one of the major ones.

Q. Okay. Do you need backup to reach the conclusion that, well, I'm reasonably sure that I have a leak? What other symptoms are you looking for as an operator?

A. Increase in throttle upstream and downstream.

Q. And how would you know that? Is there a display on --

A. Display.

Q. Okay. And did you see something like that when you saw

that five minute leak detection? Did you see any throttle or you're not monitoring that?

A. I didn't see any throttle.

Q. So it was -- the throttle was displayed on the screen but there was no, quote, unquote, some -- I mean, I do not know what a throttling alarm would look like on the screen. Maybe you can tell me that. I mean (indiscernible) --

MR. JOHNSON: Well, would you have throttling when the line is down?

MR. SCOTT: No.

MR. JOHNSON: So I think in that -- the question's not applicable in this case.

MR. CHHATRE: That might be so. There would be no display of throttle or --

MR. JOHNSON: There would be a display of it, but you wouldn't -- the line's not flowing so you wouldn't see anything.

MR. CHHATRE: You wouldn't see it. Okay. Got it. Yes. I thought he was displaying on a normal operation, what the telltale signs would be, so --

MR. JOHNSON: Okay. So in a normal case?

MR. CHHATRE: Yeah. That's what I was looking at. Okay.

BY MR. CHHATRE:

Q. On the day of the incident, when you saw the leak detection or column separation, are they synonymous?

A. Synonymous.

Q. What will cause the alarm to go off by itself (indiscernible) after the five minute alarm (indiscernible), what would cause that to do that because, now, you're in a shutdown mode? What would cause that (indiscernible)?

A. To my understanding, that the model and the SCADA System came back into alignment.

Q. Model and what system?

A. SCADA.

Q. SCADA. Okay. You've got to engineer me on this one now. What is a model and SCADA System? So does that mean your column separation is because they're out of sync, the SCADA and model or --

A. That could be what the analyst interpreted. There's a model which is a separate program from SCADA.

Q. Okay. And that program does what?

A. It -- I'm not sure. It calculates -- the model is --

Q. Okay.

A. -- a simulation of the pipeline.

Q. Okay. Good. So that's good.

A. The model thinks of what should be happening.

Q. Okay. And the SCADA is the actual display of what's happening --

A. Yes.

Q. -- in the system? And so in a normal course of

operation, they are both in sync?

A. Yes.

Q. So on this five minute column separation, I think you rang and talked to the specialist. Did you go and talk to anybody on this one or --

A. I called the shift lead.

Q. Okay.

A. The shift lead called the analyst.

Q. Okay.

A. And the analyst called me back.

Q. And telling?

A. Telling me that it was column separation. At the same time he called me, I received an MBS alarm on the SCADA display saying it had cleared.

Q. Okay. So a system that is closing down, why would the column separation clear itself? But you're not pumping anything for those columns to collapse, I guess (indiscernible). What would -- I don't still understand, in my mind, what was cause the columns to (indiscernible) disappear on a system that's not being --

A. Because it was in the time -- the column separation happened in the time of shutdown, so once the line was stable or shut down, I believe everything came back into line. So it's in that transient state.

Q. So typically what happens -- I mean how, in a line which

is running normally, what would make the column separation disappear? What -- how would that happen, with the column separation to --

A. If you were pulling away from a hill faster than you were filling it, that would cause you column separation.

Q. Right. And what will make it disappear? How will you -- how does that separation collapse itself?

A. How would you put it back together?

Q. Right. What would have to be done or what --

A. You would either have to slow down your pulling away and speed up -- and/or speed up your feeding over the hill --

Q. Okay.

A. -- which would put it back together.

Q. So something physically has to be moved? One thing has to slow down and the other thing has to be moved?

A. In a normal, running pipeline, yes.

Q. So I guess I'm going back to that, trying to understand in my own mind. So the system is being shut down and you see a column separation and nothing is being slowed down and nothing is being pumped in. In your mind, in your experience, what would make this column separation alarm to go away?

A. That -- because I closed the pressure control valve at Stockbridge, it may have backed up the pressure enough --

Q. To --

A. -- into that area to put it back together.

Q. And so you did -- did you see the pressure increase readings on the SCADA?

A. Yes.

Q. Okay. And that's all I have. Thank you much. I appreciate your time and (indiscernible).

BY MR. NICHOLSON:

Q. Okay. I've got, actually, a lot of pages, but I'll try and get through these as quick as possible. I'm going to stay with, kind of, the discussion that's been taking place and some of this has been asked before, Dave, so I'm going to apologize in advance, but I've got to understand the -- what was going on at the time.

I'm going to start with the alarms and commands that I see on the 25th, when you were performing the shutdown. The first alarm that comes in is that LPM alarm, invalid pressure, which you basically had addressed. You said it's out of range. It's zero, right, but that is an S6 priority, right? And according to procedures, an S6 is notification to a shift lead, right? But just awhile ago you said, you know, sometimes, you might not call, sometimes you would. I -- did you see the LPM alarm? Do you remember?

A. I don't remember.

Q. You don't recall. When you see an LPM or an S6, is that reason to call a shift lead?

A. Yes.

Q. It would be. But then you said an S6, if it's a pump lockout, maybe not. So it's at the operator's discretion?

A. That one would be one that you call.

Q. You would call on an invalid pressure. Okay. So you didn't see it when it first came in. Any reason you wouldn't have -- is it an audible alarm or --

A. Yes.

Q. It is audible.

A. And visual.

Q. Okay. So do you know why you wouldn't have seen it or were you distracted, were working on another --

A. Well --

Q. -- issue or --

A. -- how many milliseconds was the next alarm?

Q. Well, it was actually right on top of it. Right. So you think that you didn't see the LPM because the low suction pressure alarm came in immediately following that? Is that accurate?

A. Probably accurate.

Q. Okay. So you did see the low suction pressure? You recall seeing that? Okay. Which is an S4, which I think, by procedure, is at your discretion, whether you --

A. Informational.

Q. It's --

A. Yeah.

Q. -- informational? So low suction, you wouldn't think you would have to call anybody. Okay. Is low suction pressure considered a leak trigger by procedure, the low suction pressure alarm?

A. That may be one --

Q. Okay.

A. -- of the leak triggers.

Q. Okay. Is it a leak trigger when it's in conjunction with a shutdown?

A. No.

Q. Okay. So -- and actually, right on top of that low suction pressure alarm, I see notification that Unit 2 at Marshall is being sequenced off, which, I believe is a local shutdown of the pump due to low suction. Is that correct?

A. It could be.

Q. Okay.

A. Or I may have sent the stop simultaneously. When was my stop sent?

Q. And that's what I'm getting to because the next command I see from Console 5, it says it's -- let's see. It would have been 10, 13 seconds later, I see a stop command from you, I guess, Console 5. So, you know, that's a clarification I'm trying to figure out here is, did you see the station shutting down? And if you did, you know, why would you send another stop command or is there a reason for that?

A. And I believe that there's also a time lag --
Q. Okay.
A. -- on some of the commands.
Q. So what you're saying is maybe you issued your stop command prior to the station shutdown?
A. Yes.
Q. Okay. Is there any way to confirm that?
A. No.
Q. Okay. You just live with the lag, there's nothing -- okay. If we went to the RTU at the station, would there be any more data we could pull from that?
A. I do not know.
Q. Okay.
MR. PIERZINA: Say, just to back that one up for one second, just to make sure, so the time lag, if the unit was shutting down, you know, from the RTU, that may have -- that time may be accurate, but you may not have known it, right? Just to --
MR. SCOTT: Yes.
MR. PIERZINA: -- clarify. So the timing -- the time stamps that we're looking at could be right, but it may not have shown up on your screen at the time that you were shutting it off, right?
Q. I guess that's what I'm asking. So in your recollection, you didn't see a notification that the Unit 2 was shutting down before you issued your stop command then, right?

A. No.

Q. If there's a lag, you wouldn't have seen it?

A. I wouldn't have seen it.

Q. You would not have seen it?

A. I would not have seen it.

Q. Okay. All right. Okay. So is it common then to see the LPM invalid pressures during shutdowns?

A. Yes.

Q. It is. And it's common to see them clear themselves during shutdowns?

A. Yes.

Q. Okay. And it's not uncommon to see -- I see -- count six of them here, is what I see. You could have as many as six on the typical shutdown? Is that accurate?

A. You try not to.

Q. Okay.

A. But it is a possibility.

Q. Okay.

A. Because once they're triggered, with the transient waves, sometimes they'll clear and then they'll go and then they'll clear and then -- right?

Q. Yeah. That makes sense.

A. As oil is slowing down.

Q. Sure. And you can see it on the trend for the shutdown. You're right. I see the spikes and that -- they coincide. Now if

you had one that didn't clear, would that be cause for concern then? Because I see five of them clear. I think the sixth one does not clear on its own. Would that be something you would follow up on or not or --

A. Not necessarily. No.

Q. Okay. We were just talking about a little bit -- Ravinda was trying to get a definition of col sep (ph.) and you were kind of hinting at, you know, as you go static, that the differential between the mass balance system and the actual goes away and maybe that's why the alarm is clearing. And is -- that's because, as I understand it, the mass balance system is running a calculation based on pressure drop between stations and comparing that? You don't know?

A. I don't know.

Q. Okay. Is it common then to get the MBS alarms on a shutdown?

A. Yes. Not all the time. If you're keeping your pressures up, then you won't get them.

Q. And how do you keep those pressures up? The holding --

A. The holding.

Q. -- pressures?

A. Timing of your unit shutdowns, keeping the pressure.

Q. Okay. And that's the training you did on a simulator. That's how you develop a feel for shutting down?

A. Yes.

Q. So when I -- I wanted to look at that a little bit. If this is the plot of the 25th here, so the bottom is suction pressures and the top are the discharge pressures in all the stations. And so I can kind of see your timing here. You know, Griffith and then (indiscernible) and in the break there, a couple questions. It looked like -- are you worried about transients on shutdown? Does this look like it's building an unusually high transient at Minden? Is that something you're looking out for when you're shutting down?

A. Yes. I may have stopped that unit a little too early.

Q. Is that what would cause that then?

A. I'm not sure. I --

Q. Okay.

A. If this is -- you said this is the discharge?

Q. I'm sorry. This is suction pressure at your stations. Where you would expect to see a spike, I think, on a shutdown and these are your discharge pressures here. I guess the question is, you are looking for transients during -- is that what you're trying to minimize?

A. Yes.

Q. Okay.

A. So I may have shut down that unit, obviously, too early to cause a spike like that.

Q. What does that mean, the too early then? So that's the (indiscernible) --

A. Well, the drop hadn't quite come through from --
Q. That's what you're looking for?
A. -- the drop, from the upstream station.
Q. Okay.
A. So the pressure does start decreasing.
Q. Okay.
A. And as your suction pressure drops --
Q. Right.
A. -- then you would drop your units --
Q. Okay.
A. -- to maintain your pressure, a certain amount of -- a few hundred pounds pressure. So that one may have been then stopped.
Q. You killed it before that -- it hadn't decayed quite enough?
A. It hadn't quite decayed quite enough.
Q. Yeah. Then you get that bump. If you had seen a trend like this -- I mean, is this discharge pressure trend off Marshall a clear indication of a break or is there any other way to interpret this immediate drop you see there, that vertical line and were you looking at a trend when you were doing shutdown?
A. No.
Q. Okay. I'm just asking form your experience. I mean, would this -- if you had gone back and seen this, would this have been an indicator that something was abnormal?

A. If I had something like that.
Q. Okay. But you can pull this up though, right? You have access to trends on --
A. Yeah.
Q. -- SCADA or not? Okay. Okay. But you never -- you were prompted by an alarm or anything that you thought was unusual or abnormal to seek this kind of information?
A. No.
Q. Okay. All right. I'm going to jump around a little bit. I've got questions here. One thing I wasn't clear on was, your disability, when did you go on disability? Was it November of '09?
A. October 26th.
Q. October 26th. Okay. And then, when you came back -- when you first came back, you were on part-time, I think.
A. Yes.
Q. Okay. And that was when? March?
A. May.
Q. Okay. And so you had only gone full-time in June?
A. Yes.
Q. Okay. I just needed that.
A. I was full-time upstairs, in June.
Q. Okay. Actually, I had another question (indiscernible) --
A. I was in -- didn't go to the -- back to the control

center until July, early part of July.

Q. Okay. That's when you were paired with Theresa?

A. Yes.

Q. Okay. I didn't know exactly, when I saw these alarms on the 26th, you know, I think Karen was asking about all these E Superior VFD alarms because it looks like there's a lot of them. I didn't -- these all have to be acknowledged by the operator?

A. Yes.

Q. Okay. And what options -- as an operator, what can you -- when an alarm comes in, you can acknowledge it. Is that the same as clearing it?

A. No. It just --

Q. What options do you have to deal with an alarm?

A. Just acknowledge it.

Q. That's it? Okay.

A. To clear it, I would have to try and throttle it back down.

Q. Fix the issue.

A. To fix the issue.

Q. Now you can't shut off alarms in this system? There's no term that you're aware of?

A. Not that I'm aware of, that term, no.

Q. Okay. You can't shut points off, ignore them?

A. No.

Q. Okay. And the -- I've got the control center call logs

here and unfortunately, they refer to people as Speaker 1, Speaker 2. I was hoping maybe you could help me out a little bit because I think you're the first person in these calls here. So I'm looking at 1502 Mountain Standard Time. Yeah. I think that's Mountain Standard Time. And who -- that's you, right, and you're talking to Speaker 1, telling them they're -- you're shut down at 1459. Who is Speaker 1 in this conversation? Do you know? That would be ship lead?

A. No.

Q. Okay.

A. That would be the pig tracker.

Q. Okay. So first conversation's pig tracker and the second conversation at 1503, is that you at all in there? Are you Speaker 1, Speaker 2?

A. I would be Speaker 2.

Q. Okay. And then 1505, Speaker 1, is that you?

A. This is me. Speaker 1. Yes.

Q. Okay.

MR. CHHATRE: You want to mark that?

MR. NICHOLSON: (Indiscernible)

MR. CHHATRE: You want pencil?

Q. I'm sorry. So you said this was pig tracker, right?

A. Yes.

Q. You were Speaker 1?

A. Two.

Q. Two? And you're Speaker 1 here. Okay. Appreciate it.

MR. PIERZINA: All those aren't with the pig tracker, are they?

MR. NICHOLSON: No.

MR. PIERZINA: Okay.

MR. NICHOLSON: No. The first conversation is -- actually, that's a good question.

Q. On the second -- the first conversation is pig tracker. Who's the second conversation with then? If you're Speaker 2, who would be Speaker 1?

A. Shift lead.

Q. That is shift lead. Okay. Which was which one? Because there's two shift leads, right? Do you remember which one?

A. No.

Q. Is Bob or Allister -- okay. Okay. So the third conversation is the MBS analyst calling you back and he tells you it's col sep. That's his explanation, right, for that alarm and by procedure, there's a valid alarm and a temporary alarm. Does that ring a bell?

A. No.

Q. No? What do you do with col sep? Is that -- what does that mean to you? Is that a valid alarm? Does it mean --

A. Yes.

Q. -- the system's not working? And what are you to do

with that information?

A. Column sep is when you have a -- as Karen says, a slack line.

Q. Okay. Do you need to put it back together?

A. You can't do it when you're shut down.

Q. Okay.

A. It would come back together when you start back up.

Q. So you're just going to leave it? It's shut down?

A. It's shut down.

Q. There's nothing to deal with. Okay.

MR. JOHNSON: Because that's something you would note then, for the --

MR. SCOTT: Next shift.

MR. JOHNSON: The next shift? Okay.

Q. That is something you would note for the next shift?

A. I would tell them.

Q. And that was --

A. We had the MBS alarm. It was column separation.

Q. And that was communicated to --

A. To the next shift.

Q. -- Tim Chupp (ph.) --

A. Yes.

Q. Next shift. How would that be -- what exactly -- do you remember that conversation? How does that go?

A. Verbally.

Q. And you go -- you say what?
A. I would tell them what I had done during the day, that's a shut down due to scheduling, that the pigs were upstream of Minden, the station was set up on bypass for the pig run. There was a five minute MBS alarm --
Q. Okay.
A. -- due to column separation. When he started back up, he started up from Griffith to Marysville.
Q. Which is upstream of Stockbridge?
A. Is downstream --
Q. Downstream.
A. -- of Stockbridge, upstream of Sarnia.
Q. Okay. Did you say anything about low pressure alarms or LPMs to Tim Chupp on pass --
A. No.
Q. -- down?
A. Not that I remember.
Q. Okay. Is that documented? I can't remember. The pass down?
A. No. Was not at that time.
Q. Okay. But they're moving to something that is documented?
A. Yes.
Q. Okay. One thing I noticed in the shutdown too, maybe it's normal, but is it typical to stop pumps prior to having

confirmation of that Griffith injection valve closed?

A. Yes. As long as I can tell that his boosters are off --

Q. Okay.

A. -- through the SCADA system.

Q. Okay. You can see his boosters even though he's got control of them?

A. I can see the pressure --

Q. Okay. You're looking at the pressure.

A. -- from the boosters.

Q. Okay. All right. We talked about it a little bit, but I want to hear it from you, I guess. Raising the set point at the Stockbridge tank is doing what exactly on the line?

A. Causing back pressure. It's slowing the flow of oil upstream, down, not draining off as much into the tankage.

Q. Okay. And you said you were doing that to prevent column separation I think, right?

A. Yes.

Q. And in fact, you thought that was the reason maybe the MBS cleared is because --

A. Yes.

Q. -- you had raised that? But you raised it quite a bit earlier than --

A. A little bit.

Q. Okay. And --

A. I believe I did it a few times.

Q. You did. You made, it looked like three set point changes --

A. Yes.

Q. -- 200 or was it just 2? So you did that knowing you were going to get column sep?

A. Not knowing I was going to --

Q. Anticipating it? Okay.

A. No. Trying to prevent column separation.

Q. But if you're trying to prevent it, then it sounds like you were anticipating it. It's just good practice?

A. It's good practice.

Q. Okay.

A. You never raise your holding right up to what you want, not with that whole flow of oil coming in there.

Q. I think you -- what was it at before you -- you changed it to 200, I think, was your first move.

A. Probably somewhere, 75, 100 pounds.

Q. Okay. So you don't (indiscernible). Yeah. Okay. Your first change is 200 and you think that would have been from 80 or 100 pounds you said?

A. A hundred pounds.

Q. A hundred pounds (indiscernible).

A. (Indiscernible)

Q. So is that -- does that mean the discharge valve closes off 50 percent or I mean, it seems like a pretty extreme jump from

100 to 200 holding pressure. No? Okay. That's pretty normal to go in that --

A. Yes.

Q. -- increment? Okay. And then your next change is to 250 at 2:59 and then after that, I think it closes it. Is that the same -- I see this valve here, the 650.63/17XV, is that the same valve that's modulating or a different valve?

A. Different valve.

Q. Okay. So it looks -- last change I say is to 250, so I just see the two changes. Is that accurate?

A. Yeah.

Q. Okay. So 250 would --

A. (Indiscernible) --

Q. -- have been the last change. And that was at 2:59, roughly. And you get your -- sounded like four minutes later, you get an MBS alarm. Five minutes after that, it clears, right?

A. Less than five minutes.

Q. Okay. And that's because of the 250 PSI change holding pressure that you think it cleared?

A. Hundred fifty pound change. Yes.

Q. Okay. What is a Facman, F-a-c --

A. Facilities Management Report.

Q. Okay.

A. It's a document that we use to send notes out to the fields --

Q. Okay.

A. -- to -- for maintenance purposes.

Q. And it looked like, for an S6 alarm -- priority S6, you would create a Facman, right? I mean, that's what this procedure says.

A. Okay.

Q. Is that accurate?

A. Yes.

Q. So I'm trying to envision. So if an LPM alarm comes in, what -- then that's an S6, what Facman are you going to generate for the field? If you have invalid pressures, that's an S6. What Facman would be created? What is the field to do with an invalid pressure? Nothing?

A. Maybe check their instrumentation.

Q. Okay. So you would still enter --

A. I don't know what their job is.

Q. Okay. But you would still enter a Facman for that instance?

A. Yes.

Q. Okay.

MR. JOHNSON: And you do for MBS alarms also, which --

MR. SCOTT: We do for MBS alarms.

MR. JOHNSON: -- the field doesn't react to, but the MBS folks have to close that loop. It's an AOC.

MR. NICHOLSON: I see. I got you.

MR. JOHNSON: So we would track AOC's and close them.

MR. NICHOLSON: You enter it either way, they decide what action to take?

MR. JOHNSON: Yes.

Q. Okay. I see. So then do all S6 alarms get Facmans? Is that accurate?

A. Yes. I would believe so.

Q. Okay. The S6 LPM alarms that came in on the 25th, specifically, do they get Facmans that came in like, you know, these LPMs that came in at 2:58, 2:59? Would they have gotten Facmans generated?

A. I don't remember.

Q. Okay. Tim Chupp mentioned that he couldn't start up because he had a -- or he had to notify a shift lead because he had lost status of Valve 632. That's something he mentioned. Did you notice the Valve 632, the status, the loss of communication?

A. No.

Q. Okay. And that didn't come in on your shift?

A. No.

Q. There is no procedure for shutdown if there's a -- if you've lost communication to a sectionalizing valve? Do you worry about that at shutdown or is that only a startup issue?

A. It would be more of a shutdown -- or a startup. Sorry.

Q. Okay.

A. There is a procedure for unknown.

Q. I think I saw that for startup though; is that right?
A. Yes.
Q. One thing I noticed, I asked this of some other people, but it seemed odd to me that, I see the original occurrence of an MBS alarm at 3:02 -- roughly, at 3:03 is what it shows up here.
MR. CHHATRE: Which time?
Q. The original MBS alarm for Griffith to Marshall, where it occurred, it was at 3:02:58 and then, as you said, it clears. At 3:06:50 is when it first clears on this report, but then I see two other instances where it says it cleared. I see two more displays; one at 3:06:59 and then another one as late as 3:16:59 or 3:17. Do you remember seeing messages that it cleared?
A. I don't remember seeing messages.
Q. Okay.
A. I remember the first one --
Q. Right.
A. -- that it cleared.
Q. Okay. Would that cause you to question anything to see it display a cleared two more times without an occurrence?
A. Yes.
Q. Okay. That would be strange?
A. Had I seen it, yes --
Q. Okay.
A. -- that would be strange.
Q. Seemed strange to me. Now we've -- I hear a lot of

explanation about col sep being elevation related and I think I understand that. You had a good one where, if you're pulling harder downstream and not discharging at a fast enough rate upstream, that could be col sep. And I apologize if we've asked this already, but a leak is another explanation of col sep though, right? Is that accurate?

A. I guess. I mean --

Q. You could be losing it out the leak faster than you're putting it in or you're not getting it downstream. Is that --

A. Yeah. It's a possibility. Yes.

Q. Does it meet the definition? I'm asking. I don't know.

A. It could be a possibility.

Q. Okay.

A. I have had column separations on previous years on previous lines that weren't leaks and they were on flat ground. They're through Saskatchewan.

Q. Okay.

A. It's just sometimes, the way it works.

Q. Okay. Yeah.

A. It -- I can't explain it. I'm not an engineer, but I've seen it happen before on flat grounds where you have column separation --

Q. Got you. So it can be --

A. -- or it shows column separation.

Q. -- elevation differences or it doesn't have to be

elevation differences. Well, it could be a leak. A leak is -- I guess I'm just asking, leak is a viable explanation for col sep?

A. Could be. Yes.

Q. Okay. I mean something you have to consider amongst other things. Is that accurate?

A. Yes.

Q. I'm not sure if I asked you or not, but when you -- this leak that was -- that you picked up on January of 2007, was that a -- that was a running line or a static line?

A. Running.

Q. And you picked it up off of pressure, not mass balance?

A. Yes.

Q. There was some discussion, I think it was much later than your shift, but people were talking about packing Line 6B. Are you familiar with the term line pack?

A. Yes.

Q. Okay. That -- how much line pack can a crude oil line take? I mean, once you start filling it, don't you see pressures fairly quick on startup?

A. On a line that had been previously running?

Q. Well, a line that was shut down that you started back up.

A. It can take awhile.

Q. What's awhile?

A. I've seen some pretty bad column separations.

Q. Hour?
A. Pretty close.
Q. Okay. On 6B?
A. No.
Q. Comes in pretty quick?
A. Fairly quick.
Q. Okay.
A. It can be upwards of down further south, down in the Sarnia area --
Q. Okay.
A. -- Marysville (indiscernible). It can take you 10, 15 minutes.
Q. And those are pretty well -- I mean there's a big hill there, right, downstream? Elevation goes up quite a bit. Or actually, you're drawing off there, right? That's downstream of Howell?
MR. JOHNSON: Yeah.
MR. SCOTT: Yes.
Q. Okay. Okay. And that's what you would be filling in? Okay.
MR. JOHNSON: And maybe because when you're even delivering to Marysville, you're open to Sarnia. So we -- you know, you're not completely shut off, so you're just -- not just packing and delivering in to Marysville, but you're also running into Sarnia, so you're going down through the river and right in

to Sarnia.

MR. NICHOLSON: Okay.

MR. JOHNSON: So you've got a fair amount of line there that has walked away from you --

MR. NICHOLSON: Okay.

MR. JOHNSON: -- on your column separation.

Q. So you guys never sectionalize valves out here to try and prevent some of the column sep? No? No reason to? You just live with it? How do you know or do you know if the MBS system's working properly? Do you have any way of knowing that?

A. I know if it's -- yes.

Q. Okay. How?

A. If it's not working, it'll flash on my screen.

Q. Okay.

A. It will flash a big, red block over the MBS.

Q. Okay.

A. Meaning, it's failed. You also get an alarm saying that it has failed --

Q. Okay. What --

A. -- audio visual alarm.

Q. And what would be the instance that it failed? The transmitter's out or --

A. No. It would be -- I'm not sure.

Q. Like the --

A. Probably the --

Q. -- model terminated?

A. -- model had terminated.

Q. Okay. Software.

A. I'm not sure.

Q. Software (indiscernible). Okay. I think I asked this (indiscernible) I asked for the AOC and Facmans filed from the 23rd to the 27th and maybe we already addressed this. It says no AOCs were generated, but you did -- it does look like there was a Line 6, five minute MBS alarm put in, so these are the Facmans. And you said that would have gone then. So when he put in the five minute MBS alarm at 1502, that would go -- the Facman would go to the MBS group to analyze?

A. They're the ones that would close the -- you know, would put in their explanation.

Q. And Shane closes it by filling out his material balance report?

A. You know, I don't honestly know how MBS closes it. You know, I just know that there's the different areas that do -- you know, when the Facman report is a field related one. Facman is -- communicates through Maximo.

Q. Right.

A. So -- and then, basically, the guy, you know, when he gets to his desk in the morning, he's got a report of what he's got to repair if it was on the night shift or involves a call out, depending on how -- but you know, to close that AOC, then Maximo

does that. I don't know what the MBS person fills out to close that loop.

Q. How long does he have to close it?

UNIDENTIFIED SPEAKER: I'm just -- what time do you guys think you're going to be done?

MR. NICHOLSON: Yeah. We're recording. We probably need another hour or so.

Q. So how long does he have to close that out? Sorry. Do you know how long --

A. I don't know the --

Q. -- in Maximo?

A. -- time frame of when he has to go and close that out or close the loop.

Q. So I'm going back to procedures, Dave, and it says when there's an MBS leak alarm, that the shift lead is supposed to assess the alarm. Was the shift lead involved in assessing that alarm that came in? What was his involvement?

A. I called him.

Q. That was it?

A. I don't know if he assessed it with the MBS, if he looked at it himself. I don't know.

Q. What do you expect? Do you expect him to come back and talk to you?

A. Or the MBS analyst --

Q. Okay.

A. -- to get a hold of me.
Q. Which, he did?
A. He did.
Q. Okay. And your conversation was fairly brief. He just it's column sep, right?
A. Yes.
Q. Okay. And you said yeah, it's probably at Marshall?
A. Yes.
Q. Okay. Why did you say it was at Marshall? How did you know it was at Marshall? What made you say it was at Marshall?
A. Because of the low pressure.
Q. Okay. The low suction pressure --
A. The low suction pressure.
Q. -- because you didn't see the LPM, you said.
A. Right.
Q. Okay.
A. I didn't see the LPM.
Q. Okay. Is your -- was the shift lead even qualified to make a judgment call on this? Which, it was -- you had Bob and Allister? I mean, you've got 30 years experience, right?
A. They're --
Q. (Indiscernible) Bob or Allister, they --
A. They're trained to analyze the MBS.
Q. Okay.
A. I'm not trained to analyze the MBS.

Q. Okay. So --
A. Now we have analysts to analyze the MBS.
Q. Right.
A. I have limited knowledge as to analyzing --
Q. The MBS.
A. -- the MBS.
Q. Geez, certainly, in 30 years, you're capable of understating column sep, pressures, flows --
A. Um-hum.
Q. -- stuff that would --
A. Yes.
Q. -- indirectly point to a column separation, right?
A. Yes.
Q. I mean you could probably validate that if you would have gone into it, but because there was an explanation, you felt no need to go further?
A. No.
MR. JOHNSON: My understanding was, earlier, Matt, from your question, that Dave had said that when he had raised the holding pressure the second time at Stockbridge, about the same time, that MBS alarm then shut off. My understanding was that that was kind of confirmation it was column sep and that holding pressure was stopping it.
MR. NICHOLSON: He did say that. That's true.
MR. JOHNSON: Okay. So in a way, I think Dave did use

his experience by raising that, bringing the alarm down. So I --

MR. NICHOLSON: The only thing is --

MR. JOHNSON: You know, that's --

MR. NICHOLSON: -- they don't really fall on top of each other. I mean, I guess you guys will have to explain that to me because I mean, I see the set point change back here at 2:59 and the MBS alarm at 3:03. So in four minutes, I mean, is that --

MR. JOHNSON: You know, I don't know. That's just what I had heard so I just wanted to --

MR. NICHOLSON: Okay.

MR. JOHNSON: -- kind of go back to that --

MR. NICHOLSON: And that's what I heard too. I just --

MR. JOHNSON: -- and maybe Dave can explain that better for us or maybe even Curt can jump in.

MR. NICHOLSON: I mean, you say there's lag. Okay. Maybe there's -- maybe these aren't real times, but I'm seeing the Stockbridge holding pressure set point change at, you know, 2:59, almost on the dot and 3:03, I see the MBS alarm. So those don't look like they're -- I wouldn't call those right on top of each other in SCADA time. But I realize that valve takes time to close, so --

MR. JOHNSON: Well, I don't know that it takes that much time, but the MBS -- that alarm, I mean, that's taking some time, wouldn't you say, Curt? Maybe you don't know it as well. I think it's grinding through some of that information. So it --

MR. GOESON: Do you want me to try and clarify?
MR. JOHNSON: There could be some lag there?
MR. NICHOLSON: We'll take it up with the MBS guys --
MR. JOHNSON: Okay.
MR. NICHOLSON: -- I guess, but I mean, I accept Dave's explanation. I just -- I don't see it.
MR. JOHNSON: Okay.
MR. NICHOLSON: That's what was the thinking at the time, (indiscernible).
MR. JOHNSON: Is that a fair statement? I don't want to speak for you, Dave, but I mean --
MR. SCOTT: No. It's fair.
MR. JOHNSON: Okay.
MR. SCOTT: And I also believe that -- I mean, I had only been back operating for five or six shifts.
MR. NICHOLSON: Okay.
MR. SCOTT: You know, so my timing was not perfect.
BY MR. NICHOLSON:
Q. Sure. That's fair too. So you recognize, being away six months, that maybe you had --
A. That's --
Q. -- some retraining to do?
A. Yes.
Q. Okay.
A. That's why I was in, restarting retraining.

Q. Was that your idea or the shift --
A. No. No. That's --
Q. -- lead?
A. No. That's -- I believe it's a rule. I'm not sure.
Q. Okay.
A. I know it's -- procedurally, if it's --
Q. (Indiscernible) --
A. -- from one of the --
MR. JOHNSON: I'm just trying to think, in OQ, is it after six months? I mean, the company can choose to do it after any extended amount of time, but then there's also some requirements within the rule that say, after the person's been away so long, I don't honestly know what those numbers are. I don't know about you, Brian?
MR. PIERZINA: I don't know that it's necessarily in the regulation. I think, you know, there's a regulation that says if you have reason to believe a personnel is no longer qualified, you know, then you have to remove them. So -- and then, it's left to operators to determine, okay, what gives us reason to believe that somebody's no longer qualified. So, yeah.
MR. JOHNSON: And it was, you know, time away from a critical job like that, would just make sense and certainly --
MR. NICHOLSON: Yeah.
MR. JOHNSON: -- confirmed by Dave.
Q. Okay. Yeah. I didn't know what Dave's thinking was. I

mean, 30 years, I would be tempted to go, hey --

A. No.

Q. -- good to go.

A. Not in that job.

Q. I'm going to try and get through these. Do you think the procedures are -- do you think they adequately address the risk of startup?

A. Yes.

Q. Do you think they adequately address the risk of shutdown?

A. Yes.

Q. Okay. See, it looks like -- I saw a procedure that kind of confused me that said MBS leak alarm, Line 6B restart. Was that added for the Line 6B restart? Is that a new procedure? I guess I'm looking at Curt on this one.

MR. GOESON: Sorry. Can you quote it again?

MR. NICHOLSON: It's called Line 6B restart.

MR. GOESON: That's an MBS alarm?

MR. NICHOLSON: MBS leak alarm, Line 6B restart.

MR. GOESON: Never heard of it.

MR. NICHOLSON: Okay. That wasn't there on July 25th though, is what I'm guessing. It seems very specific. It's called MBS leak -- I've got it here, MBS leak alarm.

MR. JOHNSON: Maybe that had to do with what we were -- the additional things we were doing when we started up Line 6B.

There was additional steps we took for, what, three of four days --

MR. GOESON: Well, additional --

MR. JOHNSON: -- that are no longer in place.

MR. GOESON: Many additional measures we put in specific to the restarts.

MR. NICHOLSON: So that's a procedure that's going away or is just a temporary procedure? Is that it?

MR. JOHNSON: Some things were temporary for the restart. Some things were long-term, but I don't believe they -- you know, those were MBS changes made. I -- we can certainly talk to the -- those folks to better explain what was done just for the startup and what's long-term. And certainly, nothing Dave would be caught in the (indiscernible) of.

BY MR. NICHOLSON:

Q. So you think the procedures are adequate for the risk associated with shutdown transients?

A. Yes.

Q. Okay. But they kind of failed us on the 25th, right? Did the procedures fail us or just the alarms or training or people?

A. I won't speculate.

Q. Any thought?

A. I don't know what happened after I left.

Q. Okay. What about during your shift?

A. Procedures were followed.

Q. Okay. So procedures were followed, but where did we miss the leak? Was it because the alarm cleared? Was that what stopped the procedure, kept people from looking at, say, the pressure trend, the discharge pressure trend at Marshall?

A. There's many factors to what was -- may have transpired.

Q. I'm speaking of your shift.

A. The MBS alarm had cleared. I thought everything was good. There was no reason for -- that I felt for no restart.

Q. Okay.

A. We should have been able to start up just fine, other than, the station was bypassed for the pigs.

Q. Niles?

A. Niles.

Q. Yeah. Okay. All right. One thing I wasn't clear on, the startup procedure talks about calculated start time. What does that mean, calculated start time? (Indiscernible) do you know what's meant by that, calculated start time? That's in the startup operating procedures.

A. So the calculated startup time for 6B on that date was 0100 hours.

Q. Okay. And why is that? Why do you need it -- why do you have to calculate a start time in the procedure?

A. So you can set up your times. You can follow the rest of the procedures, which is in six hours before the startup, you

have to send out and calculate all your times. So the night shift then, would have, at 17 -- 1900 hours, set up the time with the Griffith terminal operator to say --

Q. Okay.

A. -- okay, we're going to start up at 1:00.

Q. Okay.

A. He would have talked to the Sarnia operator who was in charge of Marysville and said okay, we're going to start up about 1:00. The Sarnia operator then would have phoned the receiving, in that case, refinery to say okay, the oil's coming in at 1:00. Make sure you're open and make sure you have the room, you know, or the tank that it's designated for ready to go.

Q. Okay.

A. And then it would have been, again -- later in the night or early in the morning, it would have been, again, recalculated and confirmed.

Q. Okay.

A. Procedurally, one hour before you would -- can reconfirm such --

Q. Okay.

A. -- activities.

Q. All right. Because everything builds upon that --

A. Yes.

Q. -- all the other scheduling. Okay. Can you just, again, go over the -- what I've got written here, and this is from

the transcripts, is clarify the scheduling changes that led to the shutdown on July 25th. There was a tankage conflict at Griffith.

A. Yes.

Q. What does that mean exactly? I didn't understand that. Was it a wrong batch in the tanks or --

A. No. I believe my recollection is correct that a shipper did not want his batch shipped early --

Q. Okay.

A. -- so it would arrive, of course, downstream earlier. He may have sold it. I'm not sure what he did with it, but he didn't want that batch to leave until a certain time in the day --

Q. Okay.

A. -- so that it would arrive at its destination at a certain time.

Q. Okay.

MR. JOHNSON: And all that information would come to you from shipper services?

MR. SCOTT: It all comes from shipper services and that's not uncommon.

Q. Right. Okay. I just didn't understand what it meant. And then at some point in your interviews, it was talked about that you suggested doing a combined shutdown so we didn't have like, one small one or two small ones, I think. You wanted to just combine it into one ten-hour? Is that accurate?

A. Yeah.

Q. I think --
A. It's fairly accurate.
Q. -- it was your idea. And then, so that sounds kind of like a last minute change, right, to something that was a planned event?
A. Yes.
Q. Okay. And I was curious how that gets communicated to other groups or does it need to be? Like --
A. Yes.
Q. -- field personnel and -- okay.
A. Not so much -- it wouldn't have been the field personnel. I would have talked to the Sarnia operator to make sure that the refinery was not in desperate need of that oil --
Q. Okay.
A. -- for that one hour period.
Q. Okay.
A. Once he got confirmation that they were fine, I would have talked to the shift leads. Shift leads would have talked to scheduling.
Q. In Calgary?
A. In Calgary to make sure that it was acceptable. My job is to try and minimize transient waves like that --
Q. Okay.
A. -- just because, really, what I was supposed to do, the original schedule was to start up -- to swing even at Stockbridge

--

Q. Right.

A. -- for one hour, into Marysville and then shut down the entire line.

Q. Okay.

A. From then, it would have been 1600 hours Mountain Standard Time --

Q. Right.

A. -- to 0200 hours.

Q. Okay.

A. So I just moved it all up with --

Q. Right.

A. -- permission, one hour.

Q. So there's not a whole lot of coordination (indiscernible) coordination is right there in the room, pretty much?

A. Pretty much.

Q. Shift lead --

A. Operator and Sarnia.

Q. -- (indiscernible). Okay. It seems like -- I'm going to ask you, even though it kind of touches on the shift after yours, but there's a lot of discussions where people were trying to figure out how much a line had drained down from the shutdown. It seemed like they had to go to the CMT reports to figure out how much drain down there was from the shutdown. Was that -- why is

that -- is that a difficult calculation to perform? How was the drain down even calculated? Isn't it -- shouldn't it be a known quantity --

A. (Indiscernible) --

Q. -- based on elevations or -- okay. It's not. But all the valves are -- isolated all the valves at the tanks, right?

A. Yes.

Q. Okay. So what is drain down? You're just filling lower elevations?

A. Yes. Filling lower elevations, filling that column separation.

Q. Right. Okay.

A. So if the pipe was three-quarters full, which you don't know. You don't know how full the pipe is --

Q. Okay.

A. -- in that (indiscernible) so you would calculate how long it's going to take to pack that line back up.

Q. Okay. So you don't know how full that pipe is; that's the problem?

A. Right. But you would take your pressures and calculate --

Q. Yeah.

A. -- at about what it would take.

Q. Yeah. You just convert that to head pressure.

A. Yes.

Q. Okay. Okay. So not -- it's not something the system tracks? The system can't just tell you hey, this much is out of the line when you go to restart? You've got to do some math and figure that out?

A. You would have to do some math.

Q. And who does that, the operators or the shift leads? Who would typically come up with that number?

A. Probably the shift leads, the engineers.

Q. Well, you started the line as many times as you shut it down. How -- is it even something you calculate or you just start at weight?

A. You calculate.

Q. You do? Before you start the line, you kind of calculate to know --

A. Yes.

Q. -- when it's going to fill in maybe. Okay. All right. So operators can do this kind of --

A. Operators.

Q. -- thing. All right.

A. Shift leads. Shift leads would verify.

Q. Okay. You would have them check that before startup?

A. Yes.

Q. Okay. In one of the other transcripts, I think it was a shift lead that indicated that a zero pressure is a leak trigger. Is that true?

A. It's one of the leak triggers.

Q. But you said or someone said that you can have zero pressures on some lines because of col sep or the way the system shut down, right?

A. Yes.

Q. Okay.

A. There's -- usually on a leak, you have a number of triggers.

Q. Okay. So when would a zero pressure not need to be examined as a leak? Ever?

A. If you had a running line and you went to zero, it would have to be looked at.

Q. Okay. Even if you had a col sep indication in that same area?

A. Then you would know it.

Q. That would be two triggers?

A. That would be two.

Q. Okay. So on a line shutdown, is there ever a time when a zero pressure isn't something to be examined?

A. Yes. We --

Q. Okay.

A. -- sometimes have zero pressure and -- again, is it a leak, is it contraction of the pipeline, of the oil in the pipeline?

Q. So in and of itself, it's not an indicator. Are there

other indicators you could look for? So a sudden drop on downstream pressure of a pump -- on a pump discharge would have what affect on the throttle? You should see throttle go low, right, if you're losing pressure downstream?

A. Yes.

Q. Okay. Is that anything you would examine --

A. Yes.

Q. -- as part of your investigation? Okay. So actually in this case here -- trying to figure this out. On the 25th, there's actually a small rise here, just before what looks like the break. Do you know what that rise on discharge pressure is at Marshall in response to?

A. No.

Q. You don't think it's -- is it an action you took that caused the system to react or was it the break itself and the pumps ramping up?

A. It may have been something -- I don't believe I did anything at Marshall --

Q. Okay.

A. -- before that. I believe I raised, just around that time, the holding at Stockbridge.

Q. And would that cause pumps to ramp then or valves to open?

A. No.

Q. You don't think so?

A. So I don't know what that is caused by.
Q. Okay. Could it be a transient?
A. Could be a transient.
Q. You did talk about -- before coming back, you said you had to be OQ qualified again on certain steps, right?
A. All steps. Yes.
Q. All steps. So would that be in your training record? Would it be part of this internal order history report right here? Is that --
A. No idea. Never seen that before.
Q. Okay.
A. Couldn't answer that.
MR. JOHNSON: As far as --
MR. NICHOLSON: Where would that have been recorded?
MR. JOHNSON: His previous operator qualification would be maintained by Jim Johnston's (ph.) group and then, as he was becoming re-OQ'ed, Jim would also keep that paperwork together.
Q. So what does OQ cover? Abnormal operating condition?
A. Startup, shutdowns --
Q. Startup, shutdown. Okay.
A. -- deliveries, side stream injections.
Q. All your maneuvers.
A. All the maneuvers.
Q. Those are all maneuvers. Okay. So when was the last time you received abnormal operating condition training?

A. Previous to my illness.
Q. (Indiscernible)
A. So probably somewhere in 2009, I would have had --
Q. 2009?
A. -- earlier -- probably early 2009, I would have an ERT.
Q. Emergency response?
A. Emergency response.
Q. But that's not a --
A. Abnormal operating conditions.
Q. Okay. That's a separate one though, right? Okay. And do they -- I don't know what other courses they have. I kind of looked through this, but do they have like leak detection or MBS training? No.
A. That's for the MBS training. Anything else --
Q. They don't give you guys any kind of basic training?
A. We cannot look at anything in the MBS system. Like, we can't go into the, you know, interior of it and look at stuff. It's --
Q. Which would be what? Like liquid fraction? Is that part of the --
A. Probably.
Q. Okay.
A. I don't know. Never had any training on MBS.
Q. Well, I was in the operating room, the control center, I guess it was last night and I saw on the screen, there was a

hydraulic profile and then all the elevations. Is that considered an MBS screen?

A. That is the MBS screen.

Q. And is that -- but that's the one you're allowed to see, right?

A. That's what we're allowed to see.

Q. That's what you see. Okay.

A. But I'm saying we're not allowed to go further than that.

Q. Okay. I'm trying to figure out what further than that is. It's the liquid fraction?

A. The liquid --

Q. You don't know?

A. -- fractions. What would cause a -- what the numbers they look at --

Q. Okay.

A. -- for leak -- for column separation or for whatever. The screen that you saw is all that --

Q. That's (indiscernible) --

A. -- an operator is allowed to look at.

Q. Okay. And why is it that you can't get to the other screens?

A. We -- I don't know.

MR. NICHOLSON: Okay. Curt, you want to answer?

MR. GOESON: It's a change (indiscernible) --

MR. NICHOLSON: That's been changed?
MR. GOESON: Yeah. Prior to --
MR. NICHOLSON: Prior to that, they weren't allowed?
MR. GOESON: Prior to that, they had the ability to. It just wasn't part of their job.
Q. Okay. So you could get to it, you just, you know --
A. Never did.
Q. -- never did. Okay.
MR. JOHNSON: They're not the analyst.
MR. NICHOLSON: I know. I get that. That's -- I got that part. Yeah.
Q. You wouldn't even know what you were looking at really, probably or you wouldn't feel comfortable --
A. I wouldn't --
Q. -- interpreting?
A. -- feel comfortable interpreting.
Q. Okay. That's fair. Actually, I asked about leak detection. It looks like there is leak analysis training, is that correct? Is there training? Don't know?
A. I don't know.
Q. Okay. Thought I saw it on one of these reports, but it's not ringing a bell?
A. No.
MR. NICHOLSON: Okay. Curt, is there a leak analysis training?

MR. GOESON: Rings a bell.

MR. NICHOLSON: Does ring a bell. Okay. How often is that?

MR. GOESON: You would have to check (indiscernible).

Q. So -- I think you have covered this. There is shutdown training and that's on a simulator?

A. Yes.

Q. Okay. If there's changes to instrumentation, how is that communicated to you or is it?

A. Notes.

Q. E-mails?

A. E-mails.

Q. Okay. Like, if they've added a transmitter --

A. Yes.

Q. -- midline, they'll tell you?

A. There would also probably be a change on the SCADA station schematic.

Q. Okay.

A. Having that new transmitter added in.

Q. And that would just be a mass e-mail to all the operators saying heads up?

A. Yes.

Q. Okay. And I mean, there's -- no one sits down with you and explains the purpose of the new instrument or device? It's just here it is?

MR. CHHATRE: (Indiscernible)

Q. Alarms are -- all the alarms are preset on it, you just --

A. Go with it.

Q. You just go with it. How's the communication between the console and the field? Is it -- are you -- can you call a field out if you suspect a leak? Is that something you can do? You can take that action?

A. The shift lead.

Q. You would go to the shift lead? Okay.

A. Because he wouldn't -- he would have to call the first responders and management.

Q. So you, as an operator, if you suspect a leak, you can't just call out to the field and say hey, Joe, go check out Marshall? Okay. You've got to go through your shift lead.

A. Yeah.

Q. Shift lead's got to contact --

A. He would contact the on call or the first responders.

Q. Okay. So shift lead has the ability to call out (indiscernible) --

A. Yes. I would call an electrician or mechanic for maintenance wise, but I mean --

Q. Okay.

A. -- you know, but not for a leak.

Q. Okay. Is there any hesitancy on your part to call --

for you to go to suspected leak mode if you have reason to believe there is a leak?

A. If I believe there was a leak? No. I would talk to the shift leads about it.

Q. There's no retribution or they don't ding you on your performance appraisal, hey, you shut down --

A. No.

Q. -- the line three times and we never found a leak? No penalty for being wrong? Okay. Is the communication between the SCADA group and the operators pretty good?

A. Yes.

Q. Okay. So when you see things you don't like or that aren't working, you get that to the SCADA group and they're pretty responsive?

A. Yes.

Q. Okay. And then, just -- I'll just close with this then. I mean, if you look -- I don't know if you've reflected on this at all, the data, but -- and I think Karen asked you kind of the same question, if, you know, looking back on it now, was there anything that would have caused this to have been detected during shutdown rather than two shifts later? Is there anything on your part that would have triggered you to go further into trends or analysis that should be added, alarms?

A. No.

Q. If you had gotten -- if the MBS hadn't cleared, would

that have --

A. Yes.

Q. That would have been a trigger? What if there was a rate of change? What if there was something that said hey, Dave, I just dropped 466 pounds in 30 seconds?

A. Most definitely.

Q. That would have been a pretty big indicator. Okay.

A. The one I caught -- your Owen leak, I caught like, in milliseconds.

Q. And that's why I was asking about that. I wanted to know what was different, how you caught that one, but we missed --

MR. JOHNSON: The line was running.

Q. -- missed this one.

A. The line was running.

Q. And I think that's the key, the line was running.

A. The line was running.

Q. So --

A. You'll never miss a leak when the line's running.

Q. Yeah. It seems pretty obvious.

A. Not a major leak.

Q. So shutdowns and startups are just iffy periods where transients and alarms are kind of -- they're all over the place? They're -- maybe some -- it's unreliable or --

A. Startups and shutdowns are the worst times to have a leak --

Q. Because of that?

A. -- because of the transients.

Q. Transients. Okay. Would -- I mean, in your case, I guess you had Theresa with you, but is -- I mean, should shutdowns or startups be something that's monitored by more than one person? Maybe an MBS analyst should be looking at a screen while you start the line up; more eyes looking at more data points have been helpful?

A. Sure.

Q. Okay.

A. Probably would be. But now what do you do when, as in our system, we might be starting up four or five lines simultaneously.

Q. Right.

A. You have one analyst.

Q. Yeah.

A. The more information the operator has, the better he can respond to his job.

Q. Okay. And is it -- would it have helped to have had that graphical if you had seen, you know, your discharge pressures as you were shutting down? You know, so when you got to Marshall, you saw that steep drop (indiscernible) play like that have said -- stood out to you?

A. Now looking at it, yes, it may have --

Q. Okay.

A. May have helped. It would have been odd, right?

MR. NICHOLSON: I -- it seems odd to me, but I don't know the line, so I don't -- okay. I went on for a long time. I apologize. So, Karen, if you're still with us?

MS. BUTLER: I am. I've got some -- just about five quickies --

MR. NICHOLSON: Okay.

MS. BUTLER: -- based on things you said.

BY MS. BUTLER:

Q. You just made a statement that simultaneous starts are allowed. Is that on the same console or just, you were talking about because there's one leak detection analyst and there's 20-some controllers in the room?

A. Yes. There's one analyst and there's 20-some controllers.

Q. Okay. So are you allowed to start multiple lines at the same time without completing one from the same console?

A. No.

Q. Is that, by procedure, prohibited?

A. Yes.

Q. Okay. All right. And on low suction pressure alarms like we had at Marshall, are those pretty common to see with a shutdown?

A. They happen. We try not to make it a standard thing. They do happen, but we try not to do it.

Q. Okay. You kind of mentioned once that you didn't recall seeing the LPM alarms. Is there any chance at all that you didn't see any of those? I mean, have you ever seen anything like that happen before or anything that you've noticed on, say, somebody else's console or heard conversation about where, something didn't come in?

A. No, not that I remember.

Q. Okay. All right. On pressure control valve settings, when you're doing a standard shutdown, did they ever talk to you about adjusting pressure control valve set points at various places on the line before you did that? Like before you would issue a unit stop?

A. Yes.

Q. Okay. Was there a standard process that you did it at every station or do you recall anything specific on that from your training?

A. No.

Q. Okay. All right. On the trends regarding pressures, if you wanted to look at a historical trend on pressure, do you have to like, type in the tag number to set up the trend or are there discharge and suction pressure trends there, you just have to pull up the same -- the right display?

A. You just have to pull up the right trend.

Q. Okay. So is that something you traditionally check on shutdown?

A. No, not traditionally.

Q. Okay. Is -- has it been covered with you in training at all?

A. Previous training.

Q. Okay. Since you've been back for a couple weeks, did anybody mention it?

A. No, we hadn't gone through it.

Q. Okay. Has any of that changed since you were gone that you're aware of?

A. Yes.

Q. Okay. What changed about it?

A. They made them easier to bring up.

Q. Is that something you just figure out or how did you know they made them easier?

A. After the fact.

Q. Okay. Got it.

A. Since I've been removed from the control room.

Q. Okay. So you did find out then? Okay. We talked about the time lag on commands. Is that something that you've seen more than once or experienced more than once?

A. Yes.

Q. Okay. Is it something like, when you -- say you press the button and you're clicking do you really want to do this or whatever type of prompt you've got to confirm that you're going to make the right action and you click on that and say yes, is it

just the lag between when it -- you've actually executed to when it appears in a logger or is it some other type of lag?

A. Another type of lag.

Q. Okay. So give me a little more detail on that.

A. I believe it would be from the time I click the button to the time it gets out to the station to the time it gets back.

Q. Okay. And have you noticed that -- I'm assuming, obviously, pull times and connections and communication issues could all influence that. Has there been any obvious combination of things you've noticed with that time lag?

A. No.

Q. Okay. All right. All right. I think you mentioned that the MBS alarms were kind of strange in this particular scenario. Have you seen MBS alarms and low suction on shutdowns frequently in combination with each other?

A. Previously? Yes.

Q. Okay. All right. And on this particular line?

A. Yes.

Q. Were they -- do remember, were they close to Marshall in proximity?

A. I don't recall.

Q. Okay. All right. And that's all I have. Thank you.

A. You're welcome.

MR. NICHOLSON: Jay, anything?

MR. JOHNSON: No.

MR. NICHOLSON: Brian?

BY MR. PIERZINA:

Q. Yeah. Just real quickly, Dave, I want to get your take. You know, we talked about how the profile from, you know, going into towards Sarnia can take the line away or you know, the line can run away from you. For comparison purposes, I'm familiar with, say Renshaw (ph.) to Superior. For instance, on Line 3, which one's more likely to pull away from the other one?

A. Between Renshaw and Superior and --

Q. Yeah.

A. -- Marshall and --

Q. Right. Into Sarnia.

A. Or into Sarnia?

Q. Yeah.

A. The more --

MR. JOHNSON: (Indiscernible) Howell to Sarnia.

MR. SCOTT: Howell to Sarnia?

Q. Yeah. Which one?

A. Probably more of the Renshaw to Superior. I believe it's a greater elevation change.

MR. JOHNSON: More dramatic difference.

MR. SCOTT: More dramatic.

Q. Right. Right. So that's a place where you're maybe more likely to see some column separation, probably up on top of the hill, I suppose --

A. Yes.

Q. -- or -- and you operate Line 3?

A. Yes, sir.

Q. Line 3. Yeah. Does that take awhile to fill -- you know, you've got column separation there. Does that take awhile to fill in?

A. Yes, it can.

Q. Okay.

A. Depends on how long you've drained up for, you know, how long it took to, you know --

Q. Okay.

A. -- close the valve or --

Q. Is there a sectionalizing valve that's closed there to prevent that or is it just the holding pressure in Superior?

A. I haven't run Line 3 in a long time. I believe not.

Q. So that's just going to be a holding pressure set point?

A. Yes.

Q. Which --

A. Holding at Superior.

Q. Yeah. All right. One other quick thing. When you had the conversation with Shane about -- you know, when he reported back that he had column separation, you made the comment to him that it will probably be there until we start backup around 1:00. Do you recall telling him that?

A. No, but that would be, probably, accurate at the time.

Q. Okay. Right. So I guess that tells me that you expected to see low pressure to go -- to be there until it started up, right?

A. Yes.

Q. And that -- but then you said that the low pressure went away? Did I mishear you or did I hear you say that the low pressure at Marshall went away while you were there so you weren't concerned about low pressure at Marshall when you got off shift?

A. No. I knew there was low pressure there. I didn't say it ever changed. It stayed at zero, I believe, the whole time I was -- the remainder of my shift and I believed it would stay that way until they started back up.

Q. The zero pressure?

A. Zero pressure.

Q. But that wasn't a concern?

A. No.

Q. Okay. That's all I have.

BY MR. NICHOLSON:

Q. Well, I'm -- I just want to continue with that. I mean, (indiscernible) you said you closed -- you raised the holding pressure, right, to prevent column separation, which you thought you achieved when --

A. Thought I achieved.

Q. Okay. So wouldn't that also hold the pressure on the line? So --

A. Theoretically.

Q. It just seems like two competing statements. You said yeah, you knew there was zero pressure and you expected it to be there, but at the same time, you change holding pressure to defeat column sep, right?

A. Trying to defeat the column separation.

MR. JOHNSON: But -- and it would hold what he had. He wasn't going to gain pressure --

MR. NICHOLSON: Two ends?

MR. JOHNSON: -- with the holding. Yeah.

Q. Is that right?

A. Yes.

Q. Okay. Okay. So you were aware of the zero pressure, but you didn't question it because of the MBS?

A. Yes.

Q. Even though the MBS cleared, but the -- so there was still an indication of col sep on your --

A. Yes.

Q. -- screen? Okay. Okay.

A. But the line would -- the zero pressure would stay there until you put pressure into the line.

Q. That's (indiscernible) right?

A. Yes.

Q. Okay. Is it -- so I didn't understand that before, but -- so we've just learned today, or I have, that you can have a

column sep indicator on your screen, but that doesn't necessarily mean you're going to have an MBS alarm. Is that accurate?

A. You should have an MBS alarm. It may be accurate. I've --

Q. Not ever col sep is an MBS alarm?

A. It should be.

Q. It should be. Okay. So you can't have one without the other?

A. Without the other and traditionally, if you have an MBS alarm, it may clear. The column sep will stay there until you pack the line.

Q. Okay. So that's where that can change? The MBS can clear, but you'll still have that color change showing?

A. Yes.

Q. And is that recorded anywhere? Could I request data logs showing col sep history? Is that trended or how -- what is -- it would just be pressure. Is that what it would be?

MR. GOESON: The change in color is the change of (indiscernible) --

MR. NICHOLSON: Yeah. Whatever is causing his screen to change colors to indicate col sep, how would I look at that and time it with this other SCADA (indiscernible) -- okay. This is when he was -- this was when the screen was indicating col sep.

MR. GOESON: That's his station.

MR. NICHOLSON: Yeah.

MR. GOESON: I believe, but check with Les Rushnick (ph.) when you interview that in the code or in the historicals --

MS. BUTLER: Could you --

MR. GOESON: -- if there an indication.

MS. BUTLER: -- speak up a little bit?

MR. GOESON: I believe -- the guy with the answer is going to be Les Rushnick, but I believe you could -- through the historical information, you can differentiate between that color change.

MR. NICHOLSON: Okay.

MS. BUTLER: Yeah. We should be able to figure out with programming that color change and then based on that programming request, a query of data.

MR. NICHOLSON: Yeah. That would be worth having. Okay. Okay. That's all I've got. Anything, Ravinda?

BY MR. CHHATRE:

Q. Yeah. I guess I'm still going back to this column separation. Do you (indiscernible) on trigger, there were many others for a leak, how many you would need to become suspicious about leak? Two, three or -- how many triggers you need before you become suspicious of a leak?

A. Three.

Q. Three? Is it based on procedure or based on experience or --

A. Both.

Q. Okay.

A. Traditionally, there is a procedure. A leak is three triggers.

Q. Three triggers. Okay. And the procedure -- is there an operating procedure that requires you to look at the pressure display when you get a column separation?

A. Not that I'm aware of.

Q. So how you're going to get the second trigger of pressure drop, which is one of your second -- you know, one of your triggers? How are you going to get that trigger if you are not going to require (indiscernible) that trigger?

A. Traditionally, triggers would be loss of suction, increase in throttle, units falling off unexpectedly, zero pressures.

Q. So pressure is -- I guess what I'm saying is pressure is one of them. If you are not required to look for these triggers, how will you -- I mean, you can have two and you will look at the pressure drop and you may never get to a third trigger. So the procedure -- what I understand, the procedure doesn't require two.

A. At two, you would look. You would say what has happened. There would be a third one somewhere.

BY MR. NICHOLSON:

Q. So I'm actually looking at the procedure here and I'm just -- because you just named some leak triggers and you said zero pressure, loss of suction, increase in throttle.

A. Throttle.

Q. And I think we had those three in this event, right? We had zero pressure. We had throttling if I look at the SCADA data, Marshall throttle and we had loss of suction, right.

MR. JOHNSON: No, that was the zero pressure. It kind of would go together.

MR. NICHOLSON: Okay. Well, okay. Okay. So we've got two.

MR. PIERZINA: And a mass balance. That's going to be a trigger, right?

MR. NICHOLSON: Is that a trigger?

MR. PIERZINA: (Indiscernible) balance?

Q. Yes. And MBS is listed here as a leak trigger, so that's three, right? But three or more is a confirmed leak and it says one or two is a suspected leak. Do you -- but it seems like you were saying three. So do people just not use the --

A. No.

Q. -- suspected leak?

A. Two you would look at.

Q. Okay. That's suspected. It says one or two. Would you ever do it on one leak trigger? Is there any --

A. Depends on --

Q. What it was?

A. -- what was going on. If I was running a steady line and I had a massive pressure drop with no other explanations --

Q. Okay.

A. -- that would be, but now you're compounding it with shutting down and you're expecting pressure drops, correct?

Q. Yeah.

A. Right? Because you stop the unit, so your pressure coming into the next station will dissipate.

Q. Um-hum. But this technically says sudden drop, I guess, right, and a shutdown would be kind of the --

A. Gradual.

Q. -- gradual drop. So going back to the 25th then, did we have leak triggers, two leak triggers at least or not?

A. Yes, but I can give you two of those leak triggers and not have a leak on a line.

BY MR. CHHATRE:

Q. That's plausible.

A. Is that --

Q. That's plausible, but I guess where I was heading at is the procedures (indiscernible) on the day of the event did not require you to look for other triggers. Once you see one, you did require you to look and see the other one. If you see them, then that's a different issue, but as the procedure stands on that day, it didn't say hey, look, if you look at one -- if you see one trigger, go ahead and see there are other triggers. Am I correct or (indiscernible) ask the operator that you should look for other triggers?

A. Yes, and to me it was explained as a column separation because I was shutting down.

Q. Okay.

A. I didn't have any units at the time.

Q. Well, I'm not questioning your judgment on that. I'm not second guessing you. I'm just saying procedure (indiscernible) --

A. Yes.

Q. -- did not require you -- once you see one trigger, did not require you to look and see if there other triggers exist at that moment.

A. Yes.

Q. If you see the other trigger, that's very good, but it didn't require you to do it. And if you were to suspect a leak, you said you would go to the lead for someone to send -- to explore further, I guess?

A. Shift lead. Yes.

Q. The shift lead. All right. So you couldn't -- as an operator, you couldn't immediately turn the valves shut, close on your own without going to your lead?

A. You could. If it was a definite, you --

MR. JOHNSON: What did you do at Owen?

MR. SCOTT: I shut down.

MR. JOHNSON: Without shift lead?

MR. SCOTT: Without shift lead.

Q. Okay.
MR. JOHNSON: I think that's (indiscernible) --
MR. CHHATRE: (Indiscernible) --
MR. JOHNSON: -- answer your question?
Q. Yeah. I mean I thought you said if you suspect a leak, you would go to the shift lead and --
A. Suspect a leak.
Q. And three would --
A. That --
Q. Three would -- you can take an action on your own, you don't need to go to --
A. Right.
Q. Okay.
A. Then you would call the shift lead and say look, this is what I saw, this is what I did --
Q. Okay.
A. -- and the Owen leak --
MR. PIERZINA: It only took one, right?
MR. SCOTT: -- it was --
Q. Okay. But --
(Crosstalk)
MR. SCOTT: There was no question in my mind, absolutely --
Q. Okay.
A. -- as to that. I shut down instantly and I called them

after and said I shut down, this is why.

Q. Okay.

MR. NICHOLSON: And that was on (indiscernible)?

Q. (Indiscernible) those two?

A. Yes.

Q. I guess that's about it for me. I appreciate your time. and everything else that we didn't ask you in these last two hours that we should have asked you or something that you would like to tell us that you -- you know, you didn't ask me, but this may have impact to help you investigate this or would prevent you from reaching the wrong conclusion, something that comes to your mind that we didn't ask or you didn't tell us you thought we need to ask that you have knowledge of?

A. No. Nothing I can think of.

Q. Thank you much. I guess --

BY MR. NICHOLSON:

Q. I'm going to get a little further with this suspected leak because I want to be sure I understand the procedure. Then it's -- if you suspect a leak as a result of one or two leak triggers, then you're supposed to notify the shift lead and then establish initial time of (indiscernible) from historical data, right? And if a leak cannot be ruled out within ten minutes, then you shut down the line, section lines. So there wouldn't be any risk to you to just, if you saw the triggers, whether you could explain them or not, wouldn't you just go ahead and notify shift

lead and say hey, I've got my triggers and --

A. Shut down.

Q. Or not even shut down. Just hand it off to him, right?

MR. JOHNSON: But essentially, did he not --

Q. Because it's up to --

MR. JOHNSON: -- do that?

Q. -- the shift lead --

MR. JOHNSON: Shutting the line down.

MR. NICHOLSON: Well, you know, that's where these procedures get a little fuzzy because a lot of them say, even the MBS alarm, shut the line down. If you have an MBS and it can't be confirmed, I think the ultimate solution is to shut the line down. So if you're already shutting the line down, what do you do?

MR. JOHNSON: And sectionalizing.

MR. NICHOLSON: And sectionalizing, what do you do? So is the procedure flawed or did we just hit a case that hadn't been addressed yet by procedures?

MR. JOHNSON: You know, I hate to speculate, but it almost seems like --

MR. NICHOLSON: I don't think we are.

MR. JOHNSON: -- this is an area that we hadn't foreseen.

MR. NICHOLSON: I was getting at that earlier.

MR. JOHNSON: You know, and -- you know, I think we can ask Jim Johnston or maybe the shift leads better about that than

certainly, me, but you know, a lot of the actions you would take when you see these things, they're actions he was in the process of doing.

MR. NICHOLSON: Right.

MR. JOHNSON: So that, you know, as leak triggers come up, they went away.

MR. NICHOLSON: So what do you do with the procedure --

MR. JOHNSON: So as, you know --

MR. NICHOLSON: -- that throws you out of the --

MR. JOHNSON: Yeah.

MR. NICHOLSON: -- loop?

MR. JOHNSON: Here's a leak trigger, but it went away. Here's another leak trigger, but it went away. You know, what would you do? You shut the line down and you sectionalize. So basically, he followed procedure.

MR. NICHOLSON: Yeah. But now there is a part of the procedure that says if you continue through with that analysis, there was -- I think it's in the MBS, you're -- someone, I think it was the shift lead, is supposed to pull up historical data and start looking at trends and that's where it stopped.

MR. JOHNSON: So now, when you had gotten your MBS alarm on that, was the shift lead aware of that?

MR. SCOTT: Yes.

MR. JOHNSON: So then he did that also.

MR. NICHOLSON: That's -- I know.

MR. JOHNSON: So --

MR. NICHOLSON: Yeah.

MR. SCOTT: I phoned the shift lead.

MR. NICHOLSON: No. I didn't --

MR. SCOTT: As it's recorded. What transpires after that, I do not know.

MS. BUTLER: Now is this actually a case where, because we frequently see a five minute alarm that clears and we frequently see low pressure alarms, we've almost become pacified that as long as they appear to be reasonably explained in a fashion, we just traditionally don't think leak because we've had all this operating experience without a leak and those have been similar situations. Is that a fair assessment?

MR. SCOTT: Who's that to?

MR. NICHOLSON: it's to you, Dave.

MR. SCOTT: Is that to me, Karen?

MS. BUTLER: Well, yeah. I mean, anybody on Enbridge's side can answer that, but you, Dave, probably first and then Curt and Jay, take your shot at it. I'm asking. I'm soliciting information.

MR. SCOTT: It may be, but we always look at everything. If it's explained, then, you know, we go on.

MS. BUTLER: Okay. So anybody else want to comment?

MR. GOESON: Sure, I'll comment. This is Curt. Try and speak up. I think the way you explained it, I've referred to,

over the past four months, as norming.

MR. NICHOLSON: Norming?

MR. GOESON: Norming.

MR. NICHOLSON: Okay.

MR. GOESON: Yeah. Very similar, a condition that exists that we haven't attributed to a rupture or a leak. And --

MS. BUTLER: So basically, what we've got to come up with a mechanism to do, either in procedures or in our daily log here, is we've got to make sure that when these things are occurring together and they're clearing themselves, that we don't (indiscernible) process of a potential leak, that in our thought process, we still need to be pursuing that.

MR. GOESON: Yeah. And the challenge here is the shutdown versus --

MS. BUTLER: Absolutely.

MR. GOESON: -- steady (indiscernible).

MS. BUTLER: It is possible that, if there was a low pressure alarm that continued to seek for a period of time, whether or not that had moved, it's possible that that could be an added trigger mechanism for you and could have helped you out in this case, I think.

MR. GOESON: Yeah.

MS. BUTLER: Because, you know, in all sincerity, and we can talk about this some other time because I know we're late tonight, but it's unusual for us to run to a system where we

really don't truly have a low pressure indicator that's a critical alarm by itself, meaning that it doesn't come from an RTU or it doesn't -- where there's not a requirement that it be synced up between SCADA and the RTU or if there's some type of rate of change, that if it changes over a period of time. So I realize that this would have been an abrupt change that might have triggered an alarm. We might have overlooked that one too because we were shutting down, right?

MR. GOESON: Um-hum.

MS. BUTLER: But if we're in a shutdown mode, maybe one of the things we need to spend some time discussing later is whether or not we could have an alarm that looked for stability at a lower pressure that did not seem reasonable and you could set that value.

MR. GOESON: Yeah. And one of the modifications we've made since 6B is just that, verification of pressures prior to startup through calculations.

MS. BUTLER: Prior to startup or upon shutdown?

MR. GOESON: Prior to startup.

MS. BUTLER: Okay. Well, we still would have lost, what, several hours, right?

MR. GOESON: Yeah.

MS. BUTLER: Where we also need to be looking for an abnormal pressure range at Marshall on shutdown or shortly thereafter, right?

MR. NICHOLSON: So this might be a question for the SCADA guy, but I know that when Tim Chupp was starting up and he saw he lost communication to the valves. He could set column out limits. He just presses a button and changes -- and it changed the limits at Marshall. Is that accurate?

MR. GOESON: Yeah. That's accurate.

MR. NICHOLSON: So is that a single push button and --

MR. GOESON: Dave?

MR. NICHOLSON: How do you enable column out?

MR. SCOTT: It's actually for -- be about three clicks.

MR. NICHOLSON: Clicks. Okay. So I don't know. Maybe there's any way to build something in for a shutdown or you know, other features become active or limits change, other alarms are activated at stations, rate of change because you don't watch your rate of change for transients, right?

MS. BUTLER: Right.

MR. NICHOLSON: Normal operating transients.

MR. GOESON: Right.

MS. BUTLER: Yeah.

MR. NICHOLSON: But it might not be such a bad thing if you've got transient alarms trying to shut down just as a double check. So maybe I'll have to ask the SCADA guy.

MS. BUTLER: Okay. Well, I think --

MR. NICHOLSON: Yeah.

MS. BUTLER: -- the questions have been very well

answered. Thank you very much.

MR. SCOTT: You're welcome.

MR. PIERZINA: I'm done.

MR. NICHOLSON: You're okay? Brian's finished, for the record. Ravinda, anything else?

MR. CHHATRE: I'm done.

MR. NICHOLSON: Jay?

MR. JOHNSON: No, I'm very good. That was very helpful for me, Dave.

MR. NICHOLSON: Yeah. I appreciate it, Dave. I think we'll wrap it up with that. Thanks for putting up with us again, so --

MR. SCOTT: No problem. Any time.

MR. PIERZINA: Thank you, Dave.

MR. NICHOLSON: Okay.

MR. SCOTT: Thank you, Karen.

MR. NICHOLSON: All right.

MR. CHHATRE: Thank you.

MS. BUTLER: All right.

MR. NICHOLSON: We'll close at that.

MS. BUTLER: Good night guys.

MR. NICHOLSON: Good night.

MS. BUTLER: I'll talk to you again in the morning.

(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 OIL SPILL
MARSHALL MICHIGAN
Interview of David Scott

DOCKET NUMBER: DCA-10-MP-007

PLACE: Edmonton, Canada

DATE: December 14, 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.

_____
Tiffany Meeker
Transcriber