UNITED STATES OF AMERICA

NATIONAL TRANSPORTATION SAFETY BOARD

* * * * * * * * * * * * * * * * * * *

Investigation of: *

*

ENBRIDGE OIL SPILL, * Docket No.: DCA-10-MP-007

MARSHALL, MICHIGAN *

*

* * * * * * * * * * * * * * * * * * *

Interview of: THERESA MACDONALD

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 R. NICHOLSON, Investigator-in-Charge
National Transportation Safety Board
Office of Railroad, Pipeline, and
Hazardous Materials Investigations

[redacted]

RAVINDRA CHHATRE, Accident Investigator
National Transportation Safety Board
Office of Railroad, Pipeline, and
Hazardous Materials Investigations

[redacted]

K isor

[redacted]

JAY A. JOHNSON, Senior Compliance Specialist
Enbridge Energy Company, Inc.

[redacted]

I N D E X

I N T E R V I E W

MR. NICHOLSON: Good morning. Today is Tuesday, December 14, 2010. My name is Matthew Nicholson. I am an investigator with the National Transportation Safety Board in Washington, D.C. We are currently in Edmonton, Canada at the Crowne Plaza Hotel and 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 I'd like for you, Theresa, to please state your name and whether or not we have permission to record this interview. Do we have permission to record the interview?

MS. MACDONALD: Yes.

MR. NICHOLSON: Okay. And also if you'd like, you are permitted to have one other person present during the interview. This is a person of your choice; supervisor or friend, family or nobody at all. Can you confirm for the record who you have chosen to be this other person?

MS. MACDONALD: I have chosen Curt Goeson.

MR. NICHOLSON: Okay. You'd like Curt to be here. Okay, so at this point we'll get -- Curt's not in the room, right. We wanted to give you the chance to -- you did not want Curt to hear it to say so without Curt present so we'll bring Curt up so if he's the person.

JAY JOHNSON: And then I guess also and Curt was maybe under that impression. If there's a time when during the

interview when you want to ask questions relating to Theresa's supervision, maybe at that time we would -- we can ask Curt to leave if it pertains that way.

MR. NICHOLSON: Ask Curt to leave?

MR. JOHNSON: Yes.

MR. NICHOLSON: Yes. Right.

MR. JOHNSON: Okay. So.

MR. NICHOLSON: Okay, I'm comfortable with that.

MR. JOHNSON: And he's certainly well aware of that and has no problems with it so.

MR. NICHOLSON: Okay. So at this point we'll wait for Curt to get up there and then we will essentially we'll conduct this like we did -- like you -- the original interviews were conducted where we just take turns, go around the room and hopefully this will go faster than the.

MR. JOHNSON: I'll bet money it goes faster. Four hours was a bit long.

MR. NICHOLSON: Was it four?

MR. JOHNSON: Yes, it was.

MR. KOVAL: It was. Yeah.

MR. NICHOLSON: So most of what we'll be doing, Theresa, is I'll just be clarifying statements in your previous transcripts.

MS. MACDONALD: Okay.

MR. NICHOLSON: That may be gone through, maybe

procedures and some questions over trends and what not.

MS. MACDONALD: Okay.

MR. NICHOLSON: This will help me develop my report.

I think we'll go ahead and start. What we'll do is at this point let's go around the room, introduce ourselves, spell our names for the record. Include your contact information -- your work contact information, who you work for if we could. I'll start off.

My name is Matthew Nicholson; M-a-t-t-h-e-w, N-i-c-h-o-l-s-o-n. I am with the NTSB. I'm lead investigator on the Marshall, Michigan investigation. My contact information is [redacted].

MR. CHHAPRE: I am Ravindra, R-a-v-i-n-d-r-a; last name Chhatre, C-h-h-a-t-r-e. I am also with NTSB. My email is Ravindra Chhatre, [redacted]. I'm accident investigator and assisting ICC Matt Nicholson on this investigation.

MR. PIERZINA: And I'm Brian Pierzina; B-r-i-a-n, P-i-e-r-z-i-n-a. I'm with the PHMSA [redacted] and my email is [redacted].

MR. JOHNSON: I'm Jay Johnson. I'm a senior compliance specialist in the Pipeline Safety Compliance Group [redacted]. It's [redacted]

MR. NICHOLSON: Theresa.

MS. MACDONALD: Theresa MacDonald; T-h-e-r-e-s-a, M-a-c-

D-o-n-a-l-d. I'm a senior pipeline control operator for Enbridge Pipelines.

MR. GOESON: My name is Curt Goeson. I'm control center supervisor for Enbridge Pipelines. Contact information is C-u-r-t G-o-e-s-o-n at [redacted].

MS. BUTLER: I'm Karen Butler and I work for PHMSA out of the [redacted] as the supervisor over accident investigations. My email address is [redacted].

INTERVIEW OF THERESA MACDONALD

BY MR. NICHOLSON:

Q. Okay, I'll go ahead and start this round and we'll pass it off. And Theresa what I wanted to start with is maybe the transcripts and just go through those, clarifying some of the statements in there and so I'll start off with on page five, lines ten through 17. Just talking about your oversight of Dave Scott. You were acting, I guess, as sort of a mentor. Is that true?

A. Yes.

Q. Okay. And you said, what you indicated in your transcripts was that he wasn't necessarily in training, that you were there as someone to discuss issues if they arose?

A. Dave has been with the company longer than I have so if he had issues then I was there to help him with that, yes.

Q. Okay. And so would Dave -- by procedure would Dave have been considered a "non-qualified" individual?

A. Yes.

Q. Okay. Did Dave consult you over matters during this time?

A. He did.

Q. Okay. And was there any hesitancy on your part maybe to offer assistance to Dave knowing that he had as much or more experience?

A. Not at all.

Q. Okay. So, communication was pretty free-flowing between the two of you?

A. Absolutely.

Q. And he would have respected any kind of decisions you might have made?

A. Oh, yes.

Q. Okay. In your transcripts you also talk about having -- you said the two of you made the case for a single shutdown. I guess there was originally supposed to be two shutdowns?

A. Yes.

Q. A short one? Can you walk me back through the sequence on that, you know, what the tanks were that were part of the delivery and shutdown. There's some confusion on my part there. Just to clarify for me?

A. They had scheduled us to -- we were delivering into Stockbridge tankage.

Q. Okay.

A. And they had scheduled us to go even at Stockbridge,

start the line from Stockbridge to Sarnia so the lines running from Griffith to Stockbridge initially.

Q. Okay.

A. And they wanted us to open the line and start from -- finish starting the rest of the line from Stockbridge to Sarnia.

Q. Okay.

A. And then an hour later they had us scheduled the whole line being shut down for a number of hours. I think it was eight or ten hours. So and when it comes to that kind of thing what we usually try to do is off scheduling if we can just do the one shutdown rather than starting and stopping the line that many times.

Q. Okay. So you were delivering, I'm sorry, you said from Stockbridge to Sarnia?

A. No.

Q. No.

A. We were delivering from Griffith to Stockbridge.

Q. Okay. And that was the -- what was the original shutdown plan. What was it?

A. The original shutdown plan?

Q. Yeah.

A. The original, like the one that was scheduled?

Q. Yes.

A. What they wanted us to do is start the line, a complete starting the line up.

Q. Okay.
A. From Stockbridge to Sarnia.
Q. Okay.
A. So then the whole line would have been running.
Q. Right.
A. Straight through to Sarnia.
Q. Okay.
A. And then shut it all down an hour later.
Q. Okay.
A. And then have them start it up later that night.
Q. Okay. When you said -- in your transcripts you say you took this to our supervisors and they took it to scheduling. That's accurate?
A. Yes.
Q. Is that how that happened? So Dave consulted you on the idea of this single shutdown?
A. Yes, we spoke about it.
Q. And did you go with him to what, the shift leads?
A. We actually phoned him, I believe. I can't remember.
Q. Okay. Both of you?
A. Well, I was right at the console with him, yes.
Q. Okay. When you were asked about abnormal operating conditions during shutdown you answered that the shutdown had gone routinely. I had gotten the sense that maybe you were more involved in some other work? From your transcripts it said like

you were doing another project you were working on and maybe weren't that intimate with what was going on with the shutdown on Dave's console. Is that accurate?

A. I was working on another project but I was right beside him on the console. I could hear exactly what he was saying and what he was doing.

Q. Okay. So you feel like you were involved in that shutdown as much as Dave?

A. If he had felt there was a problem he would have involved me, yes.

Q. Okay. So I mean if Dave was a non-qualified individual or unqualified, would he be allowed to do a shutdown without you being right there at the console or is that not --

A. It would depend how close he was to being finished.

Q. In his training?

A. In his training.

Q. Okay. And he had been training with you for a month?

A. Yes.

Q. Okay. So when I go through the logs on the 25th, I think there's a lot of discussion about the MBS alarm previously. I think we covered that pretty well but what I see, the first occurrence that I see on the shutdown in the sense of the alarms, is the LPM, low suction pressure alarm on that? And I didn't hear any discussion in your interviews or Dave's interviews about that alarm so I was -- essentially I was curious, were you aware of

that alarm when it came in or was Dave?

A. I'm sure Dave was.

Q. Okay.

A. He was the one that was watching the information and answering the alarms. Okay, but he didn't say anything to you or?

A. It's not unusual for us to get a low-suction alarm on a shutdown.

Q. A low suction or an LPN?

A. Either.

Q. Either. Okay. So that wouldn't have jumped out at you?

A. Not necessarily, no.

Q. Okay. And then the low-suction pressure that follows, that would be a concern?

A. It happens all the time.

Q. Okay. And when that low-suction pressure leads to a station shutting itself down, is that any cause for concern?

A. That would make us look at it a little closer, yes.

Q. That would change that, okay. And what I didn't hear, then, in the transcripts is that there was any follow through from that so was it not -- did someone not see this or recognize it?

A. What happened was we did get the low-suction at the station and the MBS alarm came through so we gave it to the MBS people to tell us what was going on.

Q. Now the MBS comes through like four minutes later, right?

A. Well, like I said, it's not unusual for us to have a low suction on the line when we're shut down.

Q. Okay. All right so you just acknowledged it and figured it was related to shutdown?

A. Yes.

Q. Okay. Then what I see next is it looks like the operator is made aware that unit two is shutting off at Marshall because of the low suction pressure and then I see a command from the console to stop unit two. I guess that came from Dave. I'm confused then, I mean if it told you the unit's shutting down why would you issue a stop command. Is that typical?

A. I don't know.

Q. In your experience if you saw a system is shutting itself down because of low suction pressure --

A. It depends on what -- like do you mean we got a shutdown alarm on the unit?

Q. Yes.

A. Well, then I don't know why he sent a stop to it. I have no idea. You'll have to ask him.

Q. Okay. It says unit two is sequence off. That came right after the low suction pressure, right, so I'm assuming that is your indication that the station is shutting off that unit?

A. Uh-huh.

Q. Okay. Is that accurate?

A. Yes.

Q. Okay. So we don't know why that would be. Some other things that just popped out to me and you're the expert so I'm just bouncing these off you. I see the LPM alarm comes in as invalid pressure and then right away it clears itself. It says normal operating condition and it repeatedly comes in and clears itself. I think maybe six times. Would that be any cause of concern? I mean, the fact that it's repeating itself. I understand that you know, you're going to get one -- you might expect to see one on a shutdown. Would you expect to see six?

A. It happens.

Q. It does. Okay. And low suction pressure as well, like you come in, out?

A. Absolutely.

Q. Okay. Is that typical on both shutdowns and startups or just shutdowns?

A. On both, I would say.

Q. Okay. So when the MBS alarm finally came in, did you see it or did Dave mention it to you. Is that how it?

A. I heard the alarm come through and I heard him grab the phone and phone up to Al.

Q. Okay. So he phoned Al and not the MBS analyst?

A. No. We usually phone our supervisor and they contact the analyst.

Q. Okay. And so I want to talk about that a little bit. So, you called the shift lead and he calls the MBS analyst and the

MBS analyst then gets back to you and the shift lead?

A. Yes.

Q. As I understand it. Okay. In these cases what I'm hearing on the transcripts is that the MBS analyst calls back to you and says it's call in separation, I guess, that's what it seems to be in this case, right?

A. Yes.

Q. And when I look at the procedures, the procedures talk about a valid MBS alarm and temporary MBS alarm, what is column separation? Is it a valid or temporary -- how do you interpret that as far as the procedures?

A. I would say it's a valid alarm but it cleared so we didn't feel there watershed plans an actual call in set there.

Q. Okay. So --

A. And that it was going to eventually going to clear.

Q. So him saying column separation is as good as him saying it's a valid alarm?

A. Yes.

Q. Okay. And do you check that against other information you're seeing on the screen?

A. Only if it doesn't clear. But because the alarm cleared, we didn't.

Q. Okay, but it cleared five minutes later, right?

A. Yes.

Q. So in that five minute span is there something you're

doing or are you just waiting for the MBS to get back to you?

A. I believe after we got the column sep alarm Dave still hadn't closed off the valves or anything on the line so he was probably doing that.

Q. The sectionalizing?

A. During that time. Yes.

Q. Okay. While we're on that subject, I just wondered, I'm a little confused reading through some of these transcripts as well, kind of the roles and responsibilities. You know, when you hand off an MBS alarm to an MBS analyst, what is you expect of that MBS analyst, what is his role in the process? What information should he be providing you?

A. Well, that perception has kind of changed over the years. Initially he was supposed to tell us whether the actual program was working.

Q. Okay.

A. But that kind of changed in the last few years and we have -- they tell us if we have to shut down or not so I would say, you know, they're actually analyzing what's going on.

Q. Okay. So it'll go beyond just the model and look at other things, pressures or?

A. I don't really know what they do. You'd have to ask and talk to them about that.

Q. Okay. So the shift leads aren't really doing the analysis. It's the MBS analyst?

A. I'm fairly -- I don't know what the shift leads do. You'd really have to ask them but I'm pretty sure they probably look at the area also.

Q. Okay.

A. As they have the same information available to them as we do.

Q. Okay, so you're not -- you're relying more on them it sounds like. Over the years, it sounds like their role has increased in assessing these alarms and whether a line shutdown is required?

A. Yes.

Q. And it's made less of your decision or is it your decision?

A. No. Basically it had became their decision.

Q. Okay.

A. Because we would get an alarm and we'd look at it and say no everything's fine but we would still have to shut down if that alarm persisted.

Q. Oka1y. I'll just ask this: Is the MBS 5, 20 or 2-hour alarm considered an abnormal condition?

A. Certainly.

Q. Okay. I think in your transcripts you had said, "You don't typically see an MBS alarm except during startups and shutdowns and that if you see the MBS alarm during steady state operations you know there is a problem." That sounded to me like

maybe you expect to see column separation during the startup and shutdowns?

A. Absolutely.

Q. Okay. So then that makes me wonder how valid is that assessment, if you expect to see it, you know, I mean it sounds like you guys just -- call intercept loses all meaning in the sense of a startup or shutdown because you kind of expect to see it, so you know, if there really is an event there you kind of ride it off to the startup or shutdown, is that an accurate statement?

A. I don't believe that is because if it didn't clear on startup or shutdown then we, of course, would look at it.

Q. Okay. So it's the fact that it cleared, not so much that you received the alarm during startup or shutdown in this case, it's the fact that it cleared that threw everything off?

A. Absolutely.

Q. So then I guess my next question is if mass balance alarms are abnormal conditions, is there other training that you get on abnormal conditions that would give you alternate methods of the detection?

A. Absolutely. We have training every year for it.

Q. What other "leak triggers," I guess is the term would you be looking for?

A. Low suctions; units dropping off line; all like any kind of alarm like that.

Q. So, those two sound pretty much like what happened here. If you look back at this event and said now that I see it in front of me maybe we had a couple leak triggers here besides mass balance alarms?

A. The only thing is that can happen on any shutdown without it being a leak.

Q. The only thing is the alarms that occurred here could happen any time?

A. Absolutely.

Q. So your answer is no. Looking back you don't see any leak triggers here that you maybe should have picked up on that weren't?

A. Possible. I don't believe there was. Like, because our last, it's almost like -- we took it as when the MBS alarm cleared everything was fine.

Q. Okay.

A. So on a shutdown we expect to see low suctions and sometimes units falling offline.

Q. Okay.

A. It depends on how the shutdown is going.

Q. And what does that mean, how the shutdown is going? Oh, how he's timing the shutdown maybe?

A. Yes. Or you know, if something else happens during the shutdown and possibly you don't get a station off fast enough then it will go to low suction and shut the units down. So there's a

lot of variables that go on in a shutdown and a startup. And having a low suction and having a unit fall off on low suction is not unusual.

Q. Okay. That in itself is not unusual. Would it have helped, I mean since these are such transient state shutdown startup, I mean, would it help if you had like a dedicated screen that you could actually see pressure trends graphically while you're doing the work? I mean, was there enough information available just from the alarm screen to detect it?

A. We do have, we have our MBS screen.

Q. And you are watching that during the?

A. Absolutely.

Q. You have your MBS screen, is that you said?

A. Yes.

Q. Okay. But on that screen, what's that showing, hydraulic profile elevations?

A. Flow rate.

Q. Flow rate. But you don't necessarily see discharge pressure trends for instance?

A. No.

Q. Okay. Would having a dedicated startup shutdown screen with those kind of trends be of any assistance?

A. That could help. We can retrieve that information.

Q. But only if something were to prompt you to look?

A. Right.

Q. Okay. I guess what I was getting at, if you saw and we're looking at the July 25th trend here; if you had seen during the startup or shutdown in this case, you know, something that significant -- that's Marshall there, right?

A. Uh-huh.

Q. That drop. I mean that would have indicated to you, would that not have, that there was an issue?

A. It possibly could have. It also could happen like I said, on any shutdown where possibly you don't get a station off fast enough, the units will go down and then you will get a significant drop like that into the next station.

Q. So you'll see a sharp drop like this off a discharge?

A. You can. It depends on how the elevation.

Q. Okay. The elevation here was pretty flat. Was pretty flat, right, in Marshall?

A. Yeah.

Q. Okay. And that's something you guys are -- you know your lines pretty well, right, you know your elevations?

A. Well, pretty well. I can't say we know them absolutely but we know where the big hills are.

Q. Yeah, the ones you've got to watch out for. Okay, can you talk a little bit, then, about the line pressure management system and just tell me what it's there for, what's it capable of doing?

A. Line pressure monitor?

Q. The line pressure monitor, yes. Is that what it is?
A. Oh, okay.
Q. LPM?
A. LPM is there to help up protect the pipeline.
Q. From overpressure?
A. From overpressures, yes.
Q. Mostly overpressures?
A. Mostly overpressures.
Q. So, the -- are LPM logs (ph.) considered leak triggers?
A. No.
Q. No. There was also, there's an entry on this sheet here that says, "Man on site at Niles." I think it's at 2:52. Was that a person at the Niles site for the pig run?
A. Yes.
Q. Okay. Did that person call in and talk to you?
A. Well, possibly if he -- like the Niles station was already bypassed when we came in.
Q. Oh, it was. Okay?
A. Yes. So, he may have called in and talked to about maintenance on the station while it was isolated or something. I'm not sure. You'll have to ask Dave if he called in.
Q. Okay. Because we don’t have phone records for anything prior to 15:02 so would that have been recorded if you talked to? -- okay. But as far as you know, Dave wasn't on the phone during the shutdown?

A. No.

Q. His full attention was on line six?

A. Yes. And if the phone had rang I would have answered it.

Q. You answer it. So, we did talk. You said LPM alarms are fairly common. Low suction pressure is fairly common. An MBS alarm coming in and clearing itself. I'm not sure I caught that. Is that common, too?

A. Absolutely.

Q. Okay. Seeing an MBS alarm clear itself when it hadn't occurred, is that unusual?

A. What do you mean, when it hadn't occurred?

Q. Well, I see a couple of entries in here where it looks like you get some MBS five minute alarms cleared that never had an occurrence. Now, I don't know if I'm missing something in these logs. That seems a little suspect. Like, as late as 3:16, I believe there's an entry. Yeah, MBS line 6 alarm. It's a five minute alarm and section GTMR cleared. Came in as late as 3:17 but it doesn't seem to have an occurrence?

A. You would have to ask the MBS about those.

Q. Okay. Well, just from your experience, would that -- if you saw something like that and you didn't have an occurrence, would that trigger anything for you or would you just --

A. I'm sure it probably would, yeah.

Q. Okay. And you don't know if Dave --

A. We weren't on at 3:15 in the morning.
Q. Oh, this would be, I'm sorry, p.m., 3:15?
A. Oh, in the afternoon?
Q. This is July 25, 3:15?
A. Okay.
Q. You wouldn't still --
A. So that was after the shutdown?
Q. Yes, right. This would be after the shutdown which occurred at 3, right?
A. You would have to ask Dave.
Q. Okay. So just going back to that MBS alarm, all procedures would have been abandoned once that alarm clears, right?
A. As far as the shutdown goes, yes.
Q. No one would have gone back and you wouldn't have done any further examination on it if it clears?
A. No.
Q. There's no reason to?
A. That's right.
Q. Now, let's see, you did talk about also, you say, "mass balance alarms or mass balance alarms in general for me --" or for you, you say that they're typically associated with elevation changes and line draining down on the back side of the hill, for instance? Is that typically what it's called?
A. That's column separation, yes.

Q. Yeah, which is what this MBS was, right? So could a leak in a line also be an explanation of column sep., would you get that same?

A. Yes.

Q. Okay. So that fits the definition of column sep.?

A. Yes.

Q. Also in your transcripts you said, "once a mass balance analyst finishes his review of the alarm he clears it," so I'm a little confused by that. Does he clear it or did it clear itself?

A. That is -- I don't believe I said he clears it.

Q. Okay.

A. It is cleared by the system, not by the analyst, as far as I know.

Q. Okay. Something else in your testimony I wanted some clarification on. This is on page 14 if you want to follow. I think you said, "It wasn't my decision and I just relied on the information that I had," and I just wondered, maybe we talked a little bit about it already. Whose decision is it to determine what to do with an MBS alarm?

A. If it clears then I feel that decision is made by the system.

Q. Okay. Well, I think the question was in regards to, it says, "The decision that this was column separation were you content with that?" And your answer was, "It wasn't my decision, I just relied on the information that I had, so."

A. Well.

Q. What exactly are you saying there?

A. What I'm saying is that when the alarm occurred it was because of the shutdown. And then when it cleared, we felt there was no more problem so the decision was made by the actual program.

Q. Okay. So you're referring to the program there, not the MBS analyst?

A. No.

Q. Okay. Do you understand the MBS system well enough to question the MBS analyst when he comes back with a column sep?

A. No.

Q. Do you get training on that at all?

A. The only training we had on it was just how to use certain screens on it, not any in-depth training, no.

Q. Okay. As part of your transcripts you also said you weren't paying any attention to the mass balance discussion. Did you think you should have been part of that discussion in hindsight or not?

A. We can always talk about hindsight.

Q. Well, we'll get into a lot of that.

A. At the time Dave handled it as procedure calls for him to handle it and so I was happy with what he was doing.

Q. Okay.

MR. JOHNSON: Maybe, Matt, for my sake the question was

when Dave took that to the shift leads or where was that? Maybe I didn't quite understand the question.

MR. NICHOLSON: Yeah, this is when Dave is having the discussion, I think with the shift leads. Yes.

MR. JOHNSON: Okay. That clears it up for me. Thank you.

MR. NICHOLSON: That was out of the transcripts. I think that's page 14.

BY MR. NICHOLSON:

Q. Now, this is going back a ways, Theresa, but you did say in the mid-90's you said you were involved in a release?

A. Yes.

Q. Okay. And I don't know how much you remember of that but I was just curious. Can you kind of walk me through the circumstances on that? I mean, which line it was?

A. I believe it was line three.

MR. JOHNSON: Yes.

MS. MACDONALD: I can't remember.

MR. JOHNSON: It was. Yes.

MS. MACDONALD: And what was happening was we were doing some work downstream of Glenboro Station and they were doing some work and what happened was they had made the valve, an unknown valve and it was closed.

BY MR. NICHOLSON:

Q. Okay?

A. So when we have an unknown valve we can't see the status of it and over the day, you know, we got busy doing all kind of -- and when we started up the line the valve was still closed.

Q. Okay.

A. And it caused a leak upstream of the valve.

Q. And how was it detected?

A. Just because we weren't getting any downstream, like we were getting some downstream flow but that was just off the hill and eventually we figured that we had a problem and so we shut it down.

Q. From MBS alarms?

A. No.

Q. Pressure?

A. Pressure.

Q. Did you get MBS alarms during that time or did you have MBS?

A. Trying to remember if we had MBS at that time. I don't think so.

Q. Well, that predates that.

Okay, so you detected it at the control center, though, it wasn't called in, right?

A. Right.

Q. Okay. And to piece that together, then you were looking at pressure trends it looks like, right?

A. Yes.

Q. This is similar situation, you didn't have pressure downstream of a valve in that case. Here you didn't have pressure downstream of the station so I'm just trying to figure out what tipped you off in the mid-90's, it was just the fact that you didn't have pressure downstream and you had a valve, I guess, that --

A. Well, we didn't know the valve. At the time I didn't know the valve was closed. So, basically I was, we were watching the fact that we weren't getting any extra pressure downstream and the pressure upstream was backing up a little bit and then all of a sudden it released and that's when we knew that we had a problem and we shut it down.

Q. Okay. And how long did it take to figure that?

A. I don't remember.

Q. Okay. I want to go back and you've down line shutdown; so it looks like you guys shut the line down fairly often actually?

A. Yes.

Q. And I was trying to get a feel for what is typical of a line shutdown. And so on the 25th and I may have shown you this before; I have a lot of transcripts. So this was the shutdown on the 25th. This is a section pressure here and this is discharge pressure at the stations and it seems like there's a pretty good 30 seconds or so between station shutdowns?

A. Uh-huh.

Q. But what I notice is fairly large transients on the suction side. I wonder if you could just talk to any of this and just tell me is this fairly standard or what are the practices you go through to minimize transients during shutdown?

A. Absolutely.

Q. What is good practice?

A. On this occasion because we were delivering to Stockbridge we would have been starting to raise the Stockbridge holding.

Q. Okay.

A. To, you know, kind of back the line up a little bit and keep.

Q. Okay, so I want to be sure I understand when you raise Stockbridge you are raising pressure on the mainline side?

A. Yeah.

Q. Okay. And that slows pumps down, proper I guess, the valves start to throttle back?

A. Yeah. And as he's doing that he's probably bringing the discharge pressures in and getting ready to shut the units off for the stations upstream and I, like I said I was not watching what he was doing but I'm sure he was doing what he supposed to be.

Q. Well, I'm just asking in general a shutdown.

A. Oh, okay.

Q. That's what -- so you would go -- it would set your holding pressure and then you'd back off each station starting at

the front of the line?

A. Right.

Q. Okay. So he should have done Griffith?

A. Then LaPorte.

Q. Then LaPorte?

A. Niles.

Q. Well, Niles was bypassed then I guess Minden.

A. Minden.

Q. Okay and so once he's backed off those set points then he kills the unit?

A. Yes.

Q. Okay. And that's good practice because it kind of minimizes these spikes here?

A. Uh-huh.

Q. Because I do notice --

A. And he might be doing it either on discharge or he can do it on suction.

Q. It looked like suction was the change. And the changes he makes are suction set point plus -- or suction set point minus five. Is there -- it looks like there's two ways to change your set points?

A. Yes.

Q. You can change your set point or you can just give it a relative change?

A. Yes.

Q. Is there one better than the other or why? Why use one or the other?

A. The reason we would use the relative one is because it's fairly quickly to go through all the stations.

Q. Oh, okay.

A. And to actually bring up the panel and move it physically on the panel it takes a few seconds.

Q. So it's just how it's oriented to SCADA, one that you can do relatively quick?

A. Yes.

Q. Okay. So it looks like here you -- I think you made two of those. He changes Minden and then he changes Marshall by five PSI. Is five PSI much of a set point change? Doesn't sound like much?

A. Oh, we tend to operate fairly tight like that sometimes. So, it could have been. It's not something we don't use a lot just because we have some tight control on the line, so.

Q. So you're saying it's not unusual. That's typical if you were to shut down a line you might just make it five, it's not a large swing?

A. Yeah.

Q. And I’m not trying to asses the --

A. You could use that or more. It depends on the operator how they handle it.

Q. What would you do typically?

A. Personally, I'd be probably going minus 20 but.

Q. Oh, okay. Because it's not immediate. These are all slow controls here?

A. Yeah, it was a controlled shutdown so.

Q. This rise -- I'll also just trying to just pinpoint. I see that, you know, I guess I'm calling this rupture, this vertical line here at Marshall that just prior to rupture when I get through the SCADO reports I see that you know the only unit running throttles -- right, there's an increase in discharge pressure.

A. Okay.

Q. And then the break. And I was trying to figure out what generated this?

A. The rise in the pressure?

Q. Yeah, the rise. Have you looked at these commands? Would that have been -- I didn't know if it was the LPM taking over but it doesn't sound like that was the case?

A. It could have possibly been the holding pressure being put up a little more at Stockbridge.

Q. Okay, so at 2:59 he changes it again to 250 from 200?

A. Yeah, that would have caused then.

Q. And that is right around there. Okay. I'll buy that. Okay, so that would have been the rise. The rise wasn't from the rupture in the pumps ramping up.

Could you also clarify for me; in the transcripts on

page 18 you mentioned there was a problem on the startup of line three during the Line 6B shutdown?

A. No, it wasn't during the line --

Q. Oh, okay.

A. It was totally different times.

Q. Okay, so it didn't affect that other line?

A. No.

Q. Have you participated in internal investigations or reviews in the past?

A. Yes.

Q. You have. Okay. What was your input in the matter?

A. Oh, for this situation?

Q. Yeah.

A. No, I have not.

Q. Oh, you haven't been part of that?

A. No. No.

MR. KOVAL: Interviewed.

MR. NICHOLSON: Interviewed.

MS. MACDONALD: Or interviewed, yes.

BY MR. NICHOLSON:

Q. That's what I'm asking?

A. Oh, yes.

Q. So you were part of the interviews. So, as part of the interviews, have you gone back; did you review the alarms and trends that I have just shown to you?

A. No.

Q. Okay. As part of the interviews have you guys discussed what could have been done, you know, gone back on it? Whether the system failed or?

A. The interview that I went through was basically just asking us what happened. It was not we didn't actually get to see anything that had happened.

Q. Oh, okay.

A. It wasn't that kind of an interview. It was more like a, you know, it was actually more like this interview.

Q. Okay. So from your previous comments then if I asked you now if there's anything you think should have been picked up or researched more you would say no?

A. I would say not as far as we are concerned.

Q. Okay. Do you think the procedures are adequate to address this kind of event, like a leak, a shutdown. That's kind of a strange time to have a leak, right, because everything is going down?

A. That's usually when we have the leaks.

Q. That's usually when you have the leaks?

A. Yeah, those or startups. Because the line's transient.

Q. So that, yeah -- but yet I don't see any procedures that address shutdowns, that talk about transients or risks. You seem aware that that is a risky time?

A. Yes.

Q. So do you think there are procedures in place to catch leaks if they occur at these times or start?

A. Well, hopefully that's what our MBS system is for.

Q. Okay, but it didn't work here?

A. No.

Q. Okay. And you always get column seps, you say, at start of the shutdown?

A. Yes.

Q. That's kind of the nature of that.

A. Well, there are procedures to handle column separations.

Q. Which is really just calling the MBS analyst, right?

A. No.

Q. Okay.

A. We have a full procedure for column separations.

Q. What is that procedure? I just want to be sure I'm aware of it?

A. We have 10 minutes to put the column back together or we shut down and investigate.

Q. Right. That's so that's basically if it doesn't clear?

A. Yeah, if that MBS alarm hadn't cleared that's exactly what we would have done.

Q. So, yeah, if it doesn't clear you wait 10 minutes and you shut the line down?

A. Yes.

Q. Okay, except that in this case you were shutting the

line down?

A. Yes.

Q. Okay. So where would you go from there?

A. Well, the alarm cleared so we didn't go anywhere from there.

Q. That's the alarm --

A. If it hadn't cleared --

Q. Yeah.

A. Then we would have buckled everything up and called someone right away, probably.

Q. Okay. Even on a shutdown?

A. Yes.

Q. Because this has shutdown?

A. Yes.

Q. Shutdown and ratcheted an option?

A. Yeah, if that alarm had stayed and we'd started getting a 20 minute alarm on it it would have been a whole different story.

Q. Okay. And if you need a break at any point let me know.

MR. JOHNSON: We didn't do that for Curt. We'll do it for you.

BY MR. NICHOLSON:

Q. In your first interview on page 26 you say that whether or not you had residual pressure on the line after shutdown would be a function of specifically the other crew. But can you say

that the pressure would always be greater than zero. Is that true?

A. Not necessarily. It depends on the shutdown. How it was handled. If something interrupted the shutdown and so therefore you got a low suction. There's a lot of variables that could have it at zero or above zero. I mean there's a lot of things that can happen as you're doing a shutdown that can cause different pressures to be there.

Q. So even a line that maybe you've always seen at 50 pounds. If someone else shut it down, they didn't do it properly, it could be something else?

A. Absolutely.

Q. And that's a function of elevation -- I've heard this before. How you shut the line down as the elevation's fixed, how does how you shut the line down affect?

A. Well, what we would do is when we know there's a lower elevation that we need to pack we would start packing that before we shut the units off.

Q. Oh, okay.

A. Just like that holding coming up at Stockbridge. That's kind of like we're packing that area to keep the line, the column.

Q. And you know where all your low elevations are, that's documented. So shouldn't there, wouldn't be a procedure that tells you, you know, this is how you shut a line down? Knowing that this is a low area that could go?

A. There is. We know how to shut a line down. The fact is sometimes since we have more than one line, since we have a phone we have to look after, sometimes we get distracted on other things and it may not get shutdown the best way it should be.

Q. So you can't really write a procedure that covers line shutdown? There's too many other factors?

A. Well, I'm sure we could write one saying if everything's perfect this is how it should be done. But everything isn't perfect.

Q. Okay. Is that -- I mean all this sounds like you're overloaded. You've got to answer phones, and there's two other lines?

A. Sometimes we are overloaded, I believe.

Q. Let's see. Page 28 of your transcripts. You say, "The difference in the operation on line 6B was that Niles was bypassed and that they opened up the set points at Marshall and Minden so we could run minimum and still bypass stations." I was just curious, who was "they"?

A. Engineering. Our engineering group.

Q. Control room engineering?

A. Yes.

Q. Control center engineering. Okay. So, and I kind of visited this with Curt a little bit. It sounds like -- I took that to mean because they knew Niles was going to be bypassed, they made some allowances on the systems to make sure that

pressure could be maintained and flow kept up with Niles down. Is that true? Is there -- I mean are they --

A. I think basically what it was is and actually it was only Marshall that was opened and I think it was for the Marshall part -- when we had to bypass Marshall.

Q. Oh, okay. So they were taking into consideration that Marshall would be down?

A. Yeah.

Q. And opening up this second.

A. Yes.

Q. It had nothing to do with Niles?

A. No.

Q. You mention that, and I think this is typical for all controllers on page 32, you mention having to check the CMT balances every two hours. That starts at your shift change, that's the first thing you do?

A. Yeah.

Q. So every two hours?

A. Every two hours, yes.

Q. So do you do CMT's on a line shutdown?

A. We would still do it at our designated every two hours.

Q. You would even on a static line?

A. Yes.

Q. Oh, okay. So then the next people coming in should know how much drained out?

A. Possibly. Sometimes it doesn't show up as much.
Q. What do you mean it doesn't show up as much?
A. Well, because the way the line was shut down. We were shutting down into Stockbridge.
Q. Uh-huh?
A. So the last volume when Stockbridge stopped receiving because we would be closing those valves.
Q. Right.
A. There wouldn't have been very much drainage to Stockbridge.
Q. Okay.
A. Right?
Q. Right.
A. So when they seen the next CMT they would have showed just zero and zero.
Q. Oh, okay. So they couldn't really figure out what drained down?
A. No, it would have been zero pumped and zero received because we were shut down.
Q. Okay. I'm almost finished here, sorry?
A. Uh-huh.
Q. You mentioned in your first interview that shift leads resolve the alarm issues quickly. But what can you do if the response is not quick? Is there a procedure that you execute if they don't? If your shift leads don't get back to you within five

minutes on a five minute RES (ph.)?

A. Well, we have 10 minutes for that situation.

Q. Okay.

A. If they haven't got back within the 10 minute, it's our ten-minute rule. We probably would go walk up and say okay, the 10 minutes is up, we're shutting down.

Q. And as far as where you were sitting when you were working with Dave, you were right next to him, right?

A. Yes.

Q. You were looking in his direction, in that same look?

A. We have a round console. I was here, he was here.

Q. Okay. Now you mention using simulators for emergency response training?

A. Yes.

Q. In your transcripts. Can you just talk to me a little bit about how the simulator is used for that?

A. They have some pre-configured programs that we run and some of them have station lockouts and some of them have leaks and some of them have just com fails and different scenarios that we go through to help us to understand what we're seeing.

Q. Okay. And is that used as well for abnormal operating conditions?

A. It can be, yes.

Q. Is it?

A. Yeah.

Q. So do they ever -- I guess then they use that for a leak event?

A. Yes.

Q. Okay. Is there a scenario where you look at a shutdown leak event?

A. Yes.

Q. There is, actually. Okay. And what -- is that a leak at a station or how does that go?

A. Usually it is they make them a few miles downstream of a station. It's usually in between stations.

Q. And so that's, what do you get on that, do you get MBS alarm? How do you recognize that?

A. We don't have MBS on the simulator.

Q. It's just pressures?

A. Yes.

Q. Okay. And so what's the signature? Is it low suction? Does it look like what we see at Marshall on July 25?

A. Yes. Uh-huh.

Q. So it's pretty accurate?

A. But that also looks like column sep.

Q. Okay. So is it that part of the abnormal operating condition's training is to kind of figure out when it's column sep versus a leak?

A. Sure it is.

Q. And what do you use to make that determination?

A. Like I said, we have a 10-minute rule. If we cannot fill that column in within 10 minutes.

Q. Okay, the call --

A. Then it's obviously something different or something that we need someone to go -- what we would do is we close it all up and we'd send somebody out to that area to tell us exactly what's going on.

Q. So time is your indicator?

A. Yes.

Q. And as far as calling people out are you free to do that?

A. Absolutely.

Q. I mean there's no hoops you've got to jump through as an operator?

A. None at all.

Q. You can pick up the phone, call Marshall, so is there any drawback in doing that?

A. None at all.

Q. Okay. So it can almost to be your default is just assume a leak, right, rather than a sep?

A. I suppose but like I said, when the MBS alarm cleared.

Q. In this case, right.

A. Yes, sir, in this case; if it hadn't cleared we certainly would have buckled it up and called someone out to Marshall. Absolutely.

Q. And as an operator you would do that? You wouldn't go to your shift lead?

A. No.

Q. You would make that call?

A. Yes.

Q. Okay.

A. We are the ones that are watching for the 10 minutes. So, after 10 minutes probably what would have happened is we would have made the call out and then we would have went to talk to the supervisors.

MR. NICHOLSON: All right, Theresa. I'm going to pass it on here to Ravi. I think he might have some questions for you. I appreciate it.

MR. CHHATRE: Do you need a few minutes break?

MS. MACDONALD: No, I'm fine.

MR. CHHATRE: Okay.

MR. JOHNSON: How about you, Curt?

MS. MACDONALD: Want a nap?

MR. GOESON: I wanted one but I didn't want to say anything.

BY MR. CHHATRE:

Q. How long have you been quote, unquote, mentoring the operator? You say you are mentoring the operator?

A. Dave?

Q. Yes.

A. It was almost a full month.

Q. So that was prior to the incident?

A. Pardon me?

Q. Prior to the incident about a month?

A. Yes.

Q. And were you told what you are supposed to be doing as a mentor by your supervisor?

A. What happened was Dave spoke to the training people and this is coming from Dave, I wasn't there when he did this so this is just speculation kind of. He spoke to them and they wanted him to go into training on the lines just for a while until they felt he was ready to take it over by himself. So he asked them if he could go with the older operators. That way, he wasn't going to be taking experience away from the younger ones. Because he felt totally confident in the fact that he would be able to operate the pipeline the same as he always had. So he didn't want to take experience away from the younger operators, so he came and asked us if it was okay if he sat in with us and did his training with us. As far as the training people, I did not hear anything from them.

Q. Did you hear from your supervisor as to what you are supposed to be doing with Dave? How you are supposed to train? Were there any instructions given to you?

A. No.

Q. Your supervisor never came to you and told you that you

are supposed to be mentoring and training Dave?

A. Dave came to me and asked me if I would.

Q. Dave did, but a supervisor never came to you and told you?

A. No.

Q. So you didn't know then what you are supposed to be mentoring Dave for?

A. Well, I did know exactly what I was supposed to be mentoring Dave for because like I said he's worked there longer than I have and I know how he works. So, when he came and asked me if he could train on my pipelines and having me supervise, I knew exactly what he wanted me to do. He just wanted me to, you know, teach him, tell him anything that had changed, which it hadn't. Because he already knew what he was doing. It wasn't like he was actually training. So, I knew what he wanted from me was for me to tell him if there was anything new that he needed to know about the lines and then just kind of back off and let him get himself conditioned back into operating.

Q. So, on that particular day I guess you mentioned earlier you are on some special project. And Dave was operating the line. Was that understood by you and the supervisor that he would be operating the line by himself while you are doing something different as a part of the mentoring process?

A. I didn't specifically go up and tell them that but they were in the room and walking around. They seen what I was doing.

They seen what Dave was doing.

Q. So supervisor already (indiscernible) operating by himself without --

A. I was right beside him. If there had been a problem I would have been there to help him.

Q. You would know only if Dave comes to you?

A. Yes.

Q. If Dave didn't come to you, you wouldn't know there was a problem? You cannot pay attention with him. You are operating the line with him? You are doing something different on your own, right?

A. Yes.

Q. So it's kind of speculation that he would come to you but you didn't tell him that he should come to you?

A. Oh, Dave and I discussed how we were going to handle the training. Just not with our supervisor.

Q. What was discussed?

A. Just that if he had a problem just to let me know and we'd discuss and find out what to do about it --

Q. Oh, so you told him already a month ago that if he had a problem that he (indiscernible)?

A. Absolutely, yes.

Q. Okay. And was there, I guess I can for short of any better term, that meeting every morning before you start the shift and some kind of evaluation at the end of the day since you are

mentoring him? In other words, how do you evaluate him? What are the procedures at end of the day during this mentoring period?

A. Basically what I was doing was when we got there in the mornings I was making sure I listened to the run down with him so I knew what was going on in the line; what was going to be happening on the line also. And just make sure that we both knew what was going to go on, what was going to happen during the day as far as deliveries and injections and stuff like that and then at the end of the day when we did our run down just making sure that everything got passed on that needed to be passed on to our relief. So if he handled that okay I knew he was all right.

Q. What do you mean discussion during the 12-hour shift about some alarms whether information had changed, like look I work this alarm, did you do this, was that kind of thing happening or?

A. Oh, yes. Because we had a --

Q. What difficult situation would there be that you would intervene and ask him or?

A. It wasn't that I intervened and asked him. He asked me about something because we had a problem with a unit on line three and he kind of drew my attention to the fact that we were having this problem and I discussed with him what exactly I felt was happening and that it was nothing unusual and that kind of thing. So we would discuss certain things during the day.

Q. As an operator, a senior operator in your case, do you

guys have any input about the saving up of the alarms for different, I mean you said there's a 10 minute room for column separation. Where'd that number comes from? Who decides on that number? Did you guys have any input in it?

A. Yes, we do. We can -- we were -- that 10-minute alarm it was agreed on by everyone like as far as our training, our administration, everyone agreed that that was the number that we should be using. So.

Q. What I was really heading for is what kind of basis is for the 10 minute. Why 10 minutes, not 15 or 5? I'm trying to find a logic for that particular alarm setting?

MR. JOHNSON: That actually was set in the '90's after the Grand Rapids release. I don't know, Curt if you do any work?

MR. GOESON: Can I -- I can speak to it.

MR. JOHNSON: Do you know? Can we have Curt answer that?

MR. NICHOLSON: Yeah, if you could speak up, though, Curt.

MR. GOESON: After Grand Rapids in 1992 it was -- the 10 minute was based on maximum volume that we -- acceptable release volume. Based on our line four by the company. And by management.

MR. CHHATRE: So how often do you guys look at these setting to go back and see if they are still valid of the basis behind. I understanding from that your experience. It still

looks like an arbitrary number. I still don't understand. Based on at least you come up to 10 minutes. I'm still failing, I'm not an operator so you have to bear with me. I still fail to understand the logic for 10 minutes. I mean what happens in 10 minutes? You have some (indiscernible) big break down hydraulic things within 10 minutes (indiscernible) going to be combined?

MR. GOESON: No, the 10-minute time frame was based off an acceptable volume out at the time, following Grand Rapids.

MR. CHHATRE: So you feel at least 10-minute release is not significant. Is that the logic?

MR. GOESON: I don't know if I'd deem it nonsignificant or not. I just know that they deemed it an acceptable amount. So at the time it was based on 4500 cubes an hour divided by whatever, how ever many minutes, that was the volume.

BY MR. CHHATRE:

Q. So using a procedure that you guys are an operator or senior operator in your case, that will give you different parameters that have been done?

A. We actually do a procedure review every year.

Q. Okay.

A. And if we feel that there's something that needs to be changed in a procedure we can ask for that to happen and then the training people go through and decide whether, you know, okay that's a good idea, let's change that. Like there is a review that goes on with all the procedures. The 10-minute rule isn't

one that we would probably have anything to -- we wouldn't be allowed to change that, I don't think. Like operators wouldn't be allowed to.

Q. No, I mean, I guess what my thinking when you said you did have input about the time, "you," meaning the operators?

A. Uh-huh. Yeah.

Q. So did any of the operators and obviously you said didn't know where the 10 minute came from so my question is, was this column separation issue anywhere discussed by the operators? Anybody question why 10 minutes or do you guys feel it should be reviewed at any time?

A. We can usually put a column together in 10 minutes so it's not anything that ever --

Q. That's not my question. The question was do you guys discuss this 10 minute? You said you had reviewed it anyway. And my question is was this thing reviewed in any of the annual review meetings or whatever?

A. Oh, I'm absolutely sure we talk about it. But I don't think it's anything that an operator's input would change is what I'm trying to say. I mean we talk about the 10-minute rule in our training all the time but it's not something that we would have any kind of input in changing.

MR. JOHNSON: I think if you go back to '92 when the ten -minute rule was put in place; since then all the leak detection and additional information that's given to the operator has been

enhanced over time but no one has seen any reason to extend that 10 minutes. It's, you know, that's 10 minutes, that's the most you can go without knowing something. Even though you've got a lot more additional information and additional alarms and what not.

MR. CHHATRE: That's what I was -- that was not my question. My question was very specific that since every year all the different alarms are reviewed by the operators was the statement include ever, but it would discuss without input (indiscernible). That was not the question. The question was, was 10 minute -- see all the different alarms I guess you guys (indiscernible) was this reviewed. And I guess the answer is no.

MS. MACDONALD: I think it's always been 10 minutes. Ever since.

MR. CHHATRE: Okay. I did not understand. I got my answer. I mean if it always has been 10 minutes, that's not the question. The question was during your annual review was this 10-minute interval ever discussed at (indiscernible) where it comes from? I mean that's under review?

MS. MACDONALD: No.

MR. CHHATRE: That's all I'm asking this. It's not in the review I guess. Okay.

MR. NICHOLSON: The annual review of alarms, who's doing that?

MR. GOESON: Of procedures?

MS. MACDONALD: Procedures?

MR. GOESON: Of procedures? That's done by the operators?

MS. MACDONALD: Some by the operators, some by the training people, yeah.

MR. NICHOLSON: I think Ravi, are you asking if it's ever been questioned, the 10 minutes? Or justified?

MR. CHHATRE: No, see they are saying (indiscernible) I'm looking from an engineering viewpoint. To me 10 minute, I thought would have a hydraulic reason for the column separation to be at least 10 minutes or 5 minutes. Looks like it is from the amount of damage that can happen rather than the time it will take for the columns to become a problem. So really, then, I guess my next question is if that is a basis for 10-minute rule, then clearly in 10 minute it clearly doesn't tell you the column separations are there or not. Is it?

MR. GOESON: Columns can --

MS. MACDONALD: No.

MR. GOESON: Columns can take half an hour, an hour to put back together. Depends on the size of the column. The 10-minute rule isn't in relation to how quick it takes, how fast it takes to put together a column. No hydraulic reason.

BY MR. CHHATRE:

Q. Now, I'm confused then. Because if the answer is because an alarm cleared in five minutes, no further review was

taken but if the column separation can continue regarding 10 minutes of the 30 minutes then shouldn't any column separation be looked into?

A. We have a process that we go through when we feel we have a column separation and we have up to 10 minutes to see a pressure rise in the separation. If we don't see that pressure rise in the separation then we shut down. If we do see the pressure rise then we have another 10 minutes to see the next pressure rise because that tells us that the column is going back together.

Q. That's a normal operation?

A. Yes.

Q. What about in the shutdown procedure?

A. I'm not quite sure I understand what you mean?

Q. Okay. I mean if you (indiscernible) apart you can see the pressure go up because you are pumping it. If it's set down low you are not getting pumping in anything.

A. Right.

Q. So I guess what I'm trying to understand in my mind, then how can you get a pressure rise or drop for to say to go to the next 10-minute process?

A. What I was trying to explain to you is when we are starting the line up and trying to fill in a column, that is the parameter we use to decide whether we shut down or whether we continue filling the column.

Q. But that's another operation?
A. Yes.
Q. Again, I'm coming back to you're in shutdown mode in this particular incident?
A. Yes.
Q. So since you are in shutdown mode you (indiscernible) wait for over 10 minutes to see if the (indiscernible)?
A. No, no. It would have been total 10 minutes. We wouldn't have waited for anything on the shutdown. When we're shutting down a line and we get a column separation it's totally different than when we're starting up to fill a column separation.
Q. Okay. So in this particular case did the alarm go off in your mind that went off there -- I mean you did hear from your (indiscernible) that you heard him?
A. Uh-huh.
Q. Talking about column separation?
A. Yes.
Q. Do you know you are in shutdown mode? Did that trigger any alarms in your mind?
A. Not at -- no, not really. It would have if he'd said okay, it's been 10 minutes. That would have been the next thing Dave said to me if we hadn't got the clear.
Q. But you do not know who makes the statement who (indiscernible) to find a lot about it? I know you put out the statement true and like if it doesn't clear that you have to take

an action and if it clears within 10 minute then no action is necessary?

A. Yes, that's my understanding.

Q. Now, shift leads, I think you said the thing about you guys went to a shift lead. Are shift leads familiar with column separations and all that kind of stuff or they are not?

A. Yes, they are.

Q. So they are trained like operator?

A. Some of them are trained more than others like some of them were operators before they became shift leads. Some of them were terminal operators before they became shift leads. But I think they all pretty well have an idea of what a column separation is.

Q. But that's perception. My question is do you know if there is training for supervisors? For this I mean in this case?

A. Like I said, a lot of them were pipeline operators before they became so they would have had the training in column separation, yes.

Q. But you aren't sure, you are saying --

A. I don't know if they get any training now, no.

Q. Okay. And you're saying during the shutdown those suction alarms are not unusual?

A. That's right.

Q. Now, do you still shake those to make -- I guess my question here not being a pipeline operator myself so, if they are

not that unusual how -- is there kind of a past history that tells you that yet it happens and it's not unusual because you follow on those alarms? How do you know it's not unusual and that there's no harm done?

A. Because we do a lot of shutdowns so we see that there are a lot of times the values go to zero, yes.

Q. Okay. So starting with data values, that tells you look, it happens to us and (indiscernible). Okay. So there is no standard operating practice as to any low suction alarm that you need to check on, though? I think you mentioned to another question that that would indicate a further leak?

A. It depends on when we would have got the low suction alarm. Like I said on a shutdown, it's not uncommon to get a low suction alarm. If everything is wonderful on the line and all of a sudden we get a low suction alarm that's going to make us look at it real fast so it depends on when it happens.

Q. So what else has to happen besides a low suction alarm for you to get alarmed if I were to detect something that usual happened?

A. Like I said, it would depend on what we were doing. If we were doing a shutdown then we were getting all kinds of alarms. We might have high discharge. If you shut alarm off -- or shut a unit off too fast we can get -- you know, there could be all kinds of alarms. On a steady state and line anything unusual will make us look at it fast.

Q. Okay. But this thing is, what I am looking at, going back I know I am not putting it that day, what other alarm should have triggered, I guess, your attention that hey there is something unusual is happening here. What other -- the low suction by itself is not sufficient, I mean you suggest what indicated in your mind?

A. Uh-huh.

Q. What other indicator would have caused you certainly to become aware and say let me look more into that, this is not?

A. If the MBS alarm had not cleared we would have looked at it very fast.

Q. Okay, so not as bad as the other one?

A. Yes.

Q. Okay. And how often do you get those readouts, mass balance readouts?

A. We only get them when there's an alarm so. Or do you mean our MBS screen?

Q. Yeah. I guess, you answered very well when you said well low suction is certainly not adequate but mass balance you could also use a signal of some sort?

A. Yeah.

Q. Then you'd look at it immediately with a red flag. So what kind of information are you looking for mass balance for you to have that sudden change of indication?

A. Just if it doesn't clear. If the alarm doesn't clear

that triggers us to look at it more closely.

Q. So you had to have mass balance alarm also at the same time after low suction for you to become alarmed?

A. Yes. Well, not the MBS alarm coming in. It's the fact that it cleared that triggered us not to look at it.

Q. And can those alarms clear by themselves?

A. I don't think so. I think that the program does it. I don't know how it does it. You'll have to talk to MBS about that.

Q. Okay. In this particular case of the (indiscernible) do the mass balance cleared itself?

A. Yes, it did.

Q. And how long it took it?

A. About five minutes.

Q. And that's also with your rule of something clearing in five -- what is the rule for mass balance to be cleared?

A. If it hadn't cleared it 10 minutes we would have shut-- we would have still 10 minute is still the rule.

Q. And you do not know the reason for the 10-minute rule?

A. I just do as I'm told.

Q. Okay. I see why you do that.

Okay. In with 30 years a lot of experience had the low suction alarm happened at Marshall in the past shutdowns in your knowledge?

A. Yes.

Q. So it's very common for that location to have --

A. It's not that it's common; it's basically the way the line is shut down or if you get a distraction and you, you know take Mendon off line but you know, the phone rings and somebody's talking about something on the other line, you lose a unit on your other line.

Q. You get distracted?

A. You get distracted and maybe Marshall would go down to low suction because you've already dropped Mendon, all right.

Q. Right. Okay.

A. Like it would depend.

Q. The reason I asked you is I thought Marshall was a different, much flatter elevation than the other locations where there is a hill where you can more often likely to get (indiscernible).

A. Like I said it depends. If I get you lost your (indiscernible) in on your other line in a critical area you're going to be switching. You're not going to be worried about Marshall going down on low suction because that's safer than saying, you know, Regina shutting down line three with high pressure.

Q. I think you answered the question, 10 minute for the alarm to clear.

Now, you mentioned that for the column separation you guys go to an analyst. Does it have an -- every time you get a column separation do you pass this by the analyst or you wait for

10 minutes and then you go to that analyst?

A. Every time we get a column separation if we get an MBS alarm we give it to the analyst.

Q. So both column separation and MBS has to be (indiscernible) to be phone the analyst immediately?

A. Yes.

Q. And if there is only a column separation alarm you contact your analyst or you don't?

A. We really don't get a column separation alarm. We just know what it looks like. Like there is no -- if we get a column separation on our line there's not an alarm that comes through and says hey you have column separation. It is just something that we watch for in certain areas on our line and if we see it happening we try to prevent it and --

Q. So it's experience-based kind of judgment?

A. Yes.

MR. NICHOLSON: So it's true that you can have column separation on your screen without an MBS alarm?

THE WITNESS: Yes.

MR. NICHOLSON: Sorry. Go ahead.

BY MR. CHHATRE:

Q. So on the date of the accident, did you ask Dave what the alarm was all about on the, I guess the column separation alarm? Did you ask him anything at all about that alarm, what did he do or?

A. When he got the alarm I heard him on the phone talking to Allister and that's when he told Allister that he had a column separation -- or an MBS alarm, not a column separation alarm.

Q. Yes. Right.

A. He had an MBS alarm and then I heard them phone him back and say that it was column separation and then the alarm cleared so I was listening, I was not physically watching what he was doing but I was listening to what he was doing.

Q. Was there no follow up conversation between you and Dave at that time?

A. No, he knew what to do.

MR. JOHNSON: Because you were listening and you heard him follow the right steps, there was no reason to step in.

MS. MACDONALD: That's right.

MR. JOHNSON: Because he had done everything correctly?

MS. MACDONALD: That's right.

BY MR. CHHATRE:

Q. You said if the alarm does not clear I get that is column separation or mass balance in 10 minutes, both are 10-minute rules. I think both are 10-minute rules?

A. Everything is a 10-minute rule.

Q. Okay. That's easy. So you said if something doesn't get cleared up in 10 minutes then you would have sent someone out to check?

A. Yes.

Q. What that person would check for? What would the person be looking for?

A. Basically what we would do in that point is we would close all the valves that we have available for us to close on the line and then we would get our on call person and they would walk the line and see if there was any problems.

Q. Okay. So you -- I think I think you misunderstood the previous question. If you close the valves first before you sent the message?

A. Well, probably I'd have the mouse in one hand closing the valve and the phone in the other one phoning the guy.

Q. So as a senior operator with 30 years now with the company you said you know various alarms but you do not know a single logic behind the regulation tie-in of those alarms, is that correct summation?

A. It's not something we delve into very often unless we have to, yes.

Q. I mean as the things stand right now, you know, all those to alarm that come to SCADA?

A. Uh-huh.

Q. I mean you do not know the basics what setting up the time or that particular alarm?

A. No, that isn't something we deal with. We are given the alarms and we are told the logic behind it but it's not something that we have to memorize.

Q. That's not part of it. I do have this last question and I'm going to still trying to get this, you mentioned, Dave's question, I guess, my last question that if everything is perfect during the shutdown then you can follow the procedure, things don't go -- things are not perfect and there's no procedure for a shutdown, I'm really confused with that, do you know what?

A. There is a procedure, sure, that I believe tells how you should shut a line down. What I'm saying is that we can't always follow that to the letter because something happened. Like we could lose a station, we could, you know, there's so many variables.

Q. I understand. I took it that (indiscernible) is perfect otherwise I don't have to follow the procedure?

A. No, no, we have to follow the procedures if at all, you know, we do our best to follow them but stuff happens to make them, you know, they're a little unclear sometimes.

Q. And then the last question for you, how long have you, were you to train Dave? Did he know, did he have idea as to the end date, did Dave mention it to you? Obviously the supervisor didn't tell you so I'm just wondering how long this thing was going to go on?

A. I don't know.

Q. The special project that you were given, was it given because Dave was working with you? Or you can handle and do two things simultaneously? So somebody must have come and told you

that well, while Dave is doing this, do this?

A. No, that's, the special project that I was working on is something that I'd been working on all year.

Q. So.

A. Yes.

MR. CHHATRE: Thank you so much. I learn a lot.

MS. MACDONALD: No problem.

MR. PIERZINA: How we doing?

MS. MACDONALD: Okay.

MR. PIERZINA: All right. Okay. I'll try to make this quick, Theresa.

BY MR. PIERZINA:

Q. So, on this day on Sunday there was a pig in the line, or pigs in the line. So I'm kind of curious about the communications with the pig trackers.

A. Okay.

Q. Can you describe that process?

A. Okay. When they launch the pigs they phone us and tell us that the pigs are launched and usually what they do is they'll call us every two hours and give us an update as to where the pig is, or pigs, whatever. And they give us an hour -- a two hour, an hour and a half-hour call before stations because we are to get the stations bypassed the half hour before the pig. So they give us those warnings all the way up to then and basically they tell us when the pig goes through the station. So, there's quite a bit

of communication with them.

Q. Okay, so standard is every two hours at a minimum you're going to hear from the pig tracker?

A. That would be a minimum, yes.

Q. Okay. How about valves. Is there any significance with the pigs passing the valve?

A. A station valve, yes. The valves that are in, no. There's no problem with that.

Q. All right. And is there -- so that, so the expectation is that the pig tracker will call the pipeline operator and give them a status of where they're at?

A. Yes.

Q. All right. Have you trained any other operators?

A. Not for a number of years.

Q. Okay. I may have discussed this but I might not have grasped, were there any coincidental alarms or other activities taking place on the console at the time of the shutdown?

A. I don't believe so.

Q. And getting some of Ravi's questions. So, who in your mind questions why a column separation occurs?

A. Questions why it concern?

Q. Right. So if you get word back from a MBS analyst that you know, the MBS alarm was column separation so the question's why, why do you have a column separation?

A. It depends on whether it clears. If it didn't clear we

all would have questioned it.

Q. Okay. I guess so then the question is can you have the MBS alarm clear but not the column separation?

A. I guess you can.

Q. All right.

A. It obviously did.

Q. Right. So when you say if it hadn't cleared are you talking about the MBS alarm or the column separation?

A. The MBS alarm.

MR. JOHNSON: I don't -- there's not a column separation alarm.

MR. PIERZINA: I understand that. Yeah.

BY MR. PIERZINA:

Q. So, because the MBS alarm clears then you don't question why you had a column separation?

A. That's right.

Q. Okay. Even if the column separation still exists?

A. That's right.

MR. JOHNSON: Would you, if it cleared in this case within five minutes are you even looking in that five minutes of why the MBS alarm went off?

MS. MACDONALD: No.

MR. JOHNSON: Maybe that better answers your question, Brian? In that five minutes when they had the MBS alarm, when it cleared, it cleared. So they didn't know in that five minutes it

was a column separation. It was just something from MBS alerting them. It cleared itself so there was no reason they would have looked for column separation in that time frame.

BY MR. NICHOLSON:

Q. But column separation appears on your pressure display, right? The color changes?

A. Yeah. Well, no, it doesn't indicate, it just indicates low suction. It doesn't indicate column separation.

Q. Okay. I thought there was a change of color on the pressure when it was column separation.

MR. GOESON: At a station.

BY MR. PIERZINA:

Q. At a station, right?

A. Yeah. But it's also the same as low suction.

MR. GOESON: Column sep. may not be at a station I think is what.

BY MR. PIERZINA:

Q. Right, yeah. Depending on elevations and stuff. A certain pressure level at a station would indicate a column separation somewhere else and section?

A. It could. It also could just be low suction.

MR. NICHOLSON: You said the same, that color could mean a couple of different things?

MS. MACDONALD: I kind of was saying is when we have low suction our pressures turn blue. That could be just low suction

or it could be a column separation or it could be a leak. It doesn't tell us any more than the fact that we have low pressure there.

MR. NICHOLSON: Okay.

BY MR. PIERZINA:

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

A. Sure.

Q. As far as alarm severity, can you tell me which, and I'm talking the S2, S4, S6, S7, S8?

A. Uh-huh.

Q. Are there certain severity levels that you are required to report to the shift lead?

A. Yes, there is.

Q. Okay, can you tell me which ones they are?

A. I believe they're S-8's. Which are like fire alarms, that kind of thing.

Q. S-8's. And you have to report to the shift lead?

A. Yes. And some S6's I think. Like a column fail is an S6 I believe.

MS. MACDONALD: Do you know, Curt?

MR. GOESON: No, I don't.

MS. MACDONALD: I think it's an S6. An S8 is actual emergency alarm like a station lockout, fire alarm, gas alarm. Those are the high priority alarms and they have to be recorded (indiscernible) and told to our supervisors. S6 alarms can be

like column fails, unit lockouts and no we don't have to tell them about that unless like a column fail. If a column fail persists and doesn't clear then we inform our supervisors. Things like unit lockout we don't. We have to record it in Facman the clock then but we don't have to report it to our supervisors.

BY MR. PIERZINA:

Q. Okay, a unit lockout is that an S?

A. I think it's an S6.

Q. S6. Okay. So, it sounds like an S6 depends on how long, how frequent it is or?

A. It depends on what exactly happened. Like if it's just a unit locked out then it's our responsibility to inform our on-call guys that we have a locked out unit and put it in Facman. If it's like a com fail, what we would do is we would try to reboot the station. Like reboot the communications and if that didn't work then we would pass it on to our supervisors who would get hold of the companies that carry the communications.

Q. And there are S7 models, right?

A. Hum. I'm not sure.

Q. Are you familiar with S7?

A. I don't know. I believe S6's are, they're audible but they're not emergency alarms and S8's are emergency alarms. I don't know if there's S7's.

Q. And then I have, I'm sorry to bring this up again but I have a question on the 10-minute rule. I beginning to wonder if

there are different 10-minute rules because you know, I guess in the transcripts we heard the discussion of starting it, starting a station and you know having 10 minutes to seek pressure at the next station. And then there's the 10 minutes for, you know, an unexplained problem or alarm. And so, and I've tried to find in the procedures where the 10-minute rule is discussed. I wasn't able to find it. I don't know if anyone can point me to where that is in the controls, would it be in the operator's instructions?

A. The 10-minute rule is in the procedures.

Q. Okay.

A. It's not written down as a rule.

MR. GOESON: It's not a procedure.

MS. MACDONALD: No.

MR. GOESON: It's part of many procedures.

BY MR. PIERZINA:

Q. Okay. So does that mean that it is, so within each of several procedures it discusses that you have 10 minutes to?

A. Yes.

Q. Okay. All right, because I've been, I need to get to which procedure, I'd like to see which procedures those are.

MR. NICHOLSON: It's the MBS leak alarm, analysis by MBS four is what I'm looking at.

MR. GOESON: That's one.

MR. NICHOLSON: At that's to be executed by the shift

lead.

MR. JOHNSON: And that could probably be better questioned to Jim Johnston, the procedures guy who is going to be coming up.

MR. PIERZINA: Okay.

MR. GOESON: The leak procedures won't know.

MR. JOHNSON: Will have knowledge of this.

MS. MACDONALD: Yeah.

BY MR. PIERZINA:

Q. Have you shut down a line on the 10-minute rule?

A. Yes.

Q. Can you think of the last time you would have done that?

A. Oh, last time. I can't remember. Like I said we shut it down so many times.

Q. Yeah. Would it have been say in the last six months?

A. Six months? Let me think. No, I don't think I've done it within the last six months. The last year I think but not the last six months.

Q. Possibly within the last year?

A. Yeah.

Q. And so was that, do you know if that resulted in the actual identification of a leak?

A. No, it didn't.

Q. No leak?

A. It was a column separation.

Q. Okay. So was that on a start up?

A. No. I don't believe it was. I think it was on a shutdown. Well, no, the line, no. What am I talking about. I'm getting confused now. Maybe I do need a break. What it was is low pressure at an area. Like for a long time a column will hold even when the pressure is low and then just all of a sudden it will break, right.

Q. Sure.

A. So you can have a low pressure sitting in the line for quite a long time before it becomes a column separation. So, say, a drop comes through from upstream and it's already low pressure. That could cause the column to separate. So it's something that can happen on a running line.

Q. Okay, so this was a running line where you have indication of low pressure for?

A. No, I'm not saying low pressure. I'm just saying "lower pressure."

Q. Right. Okay.

A. Like as soon as we get under a certain degree it goes blue and we have low suction. But we could sit at 50 pounds and have a small drop come through there and separate the column. Like it's not something that's always going to be the same. It's very variable also.

Q. Okay. On a low pressure alarm would you call that station up or make sure that you have those pressures up so that

you watch it for awhile and see what it's doing?

A. They're right on our line display. We're always watching them.

Q. Okay. You always have. So you get a low pressure alarm and it's right there in front of you?

A. Absolutely.

Q. So in this case would that have been something that Dave was doing when the low pressure alarm went?

A. It could have been.

MR. PIERZINA: I think that's all I have for right now.

MR. NICHOLSON: Okay. Karen?

MS. BUTLER: Can I propose a five minute break here to let her stretch and I would like to head up the hall for just a minute.

MR. NICHOLSON: Okay.

MR. PIERZINA: You and me both.

MR. JOHNSON: Okay.

MS. BUTLER: So, I just need five.

(Off the record.)

(On the record.)

MR. NICHOLSON: All right. We're back. Theresa MacDonald interview, part two.

BY MS. BUTLER:

Q. Theresa, under column separation when it changes color on your screen to the blue that you mentioned, do you know, is

that value something that moves around that causes that color change or is that something that you set?

A. There is a certain level set into SCADA. I believe it's 35. But once it goes below 35 it turns blue.

Q. And to your knowledge does that stay the same? I mean that doesn't move around based on any other software program?

A. Not that I know of, no.

Q. Okay. And regarding 10-minute violations, is that something that you've seen where you've had to get permission to start up even though that's been exceeded on this particular line in the past?

A. No.

Q. Okay. And I want to ask you some questions if I can about certain things that appear in the log. So to start off with, if I'm looking for something that is coming in on line 17, it's my understanding that that's like a lateral off of 6. Is that going to have the designation in the alarm or in the command that says L17 or is that all lumped in with L6?

A. No, it would have L17.

Q. Okay. And is that also true for line for you it would be like L3?

A. Yes, it would. It wouldn't even come in on the same. We have an Edmonton machine and a Superior machine.

Q. Uh-huh.

A. So the line three alarms would come in on the Edmonton

machine.

Q. Okay. And as far as from your standpoint are those machines almost transparent to you?

A. I'm not quite sure what you mean.

Q. You said that they come in on two separate machines. Does that mean are you looking at two separate consoles or do you mean two separate servers are feeding that information to a common display or is it like two separate alarm logs set?

A. It's two separate servers.

Q. Okay.

A. And they each have their own display.

Q. Okay. All right. So when you guys are actually looking at all the alarms that might be going on on that particular console how many different alarm streams do you have to look at?

A. We have, it depends on how we set it up. We have our active alarms which is always on our line display.

Q. Okay.

A. And then we have historical alarms on other displays that we are watching in case we need to go back and check something.

Q. Okay.

A. But we always have active alarms on our line displays.

Q. Okay, so does this mean that there are two separate line displays that have the alarms for three and then the rest of them are on the other one?

A. Yes.

Q. Okay. Sorry, since I haven't been in the room I needed that clarification. Okay, so have you ever noticed since you've been there any type of time discrepancy meaning that you see something in the alarm log that has a certain time stamp but you don't think you saw it at that time; meaning it didn't necessarily display at that same time?

A. We have in the past had problems with how our alarms are recorded. But recently no, we've had no problems.

Q. Do you know what the previous problem was that caused that?

A. I believe it was just a glitch on how the alarms were being recorded.

Q. Okay. Is there any possibility that that could have fed into the situation where it appears we had a unit shut down on low suction and then we issued a stop command to it shortly thereafter?

A. I think what that could have been was just the way the router got the alarm.

Q. Got you. Got you. Okay. So that could have been a polling and then a displaying sequence issue?

A. Absolutely.

Q. Okay. All right. And so when we talk about system alarms there's a couple things in our alarm summary that we've been gracious enough to receive from you all that there'll be

something that's designated as system and sometimes that makes some sense because it'll be looking like it's the result of that setting aligning valve being closed. But other times it doesn't. Like there'll be an RTAP alarm or it'll say "system too busy to process." Have you seen that before?

A. Occasionally.

Q. Is that usually at a certain time of day?

A. Not that I'm aware of. I think it can happen at any time.

Q. Okay. Do you know what causes that?

A. The RTAP alarm?

Q. The RTAP or it may be similar in nature, it'll say something like, "System too busy to process"?

A. I think if I got a system too busy to process I would be getting my supervisors to call SCADA.

Q. Okay, and when they do that is there a typical response that happens, like do they reboot or do they?

A. I'm sure they would get hold of SCADA and get them to figure out why this system is not processing. We have to have our stuff working. We have to have it working properly. So.

Q. Okay.

A. It would be something we would get on right away.

Q. Okay. When I'm looking through the logs that were sent to us which doesn't mean that they were always clear so I want to be clear about that to begin with. But when I start looking down

through some of the logs I see that we raised the holding pressure set point at Stockbridge which makes a lot of sense. And then I see that the Griffith injection valve is labeled 6ASSZ-3 (ph.) and then in parens it says 75. It says, "If in trouble close." Would something like that have occurred as the result of a set point change or would there have had to have been a valve open command to cause that?

A. What would have caused that is since we were shutting down the line.

Q. Right.

A. The Griffith operator would have, we would have dropped the units. He would have dropped his boosters and he would have closed his injection valve. So as far as the timing goes it's just coincidental.

Q. Okay. So when there is communication like that happening is that something that would have originated with the controller at this console, right? It would have been Dave that initiated the fact that we might need to do that?

A. Yes.

Q. And so do you recall him saying that?

A. I recall him saying we were shutting down.

Q. Okay, would that have been enough for Griffith to know?

A. The Griffith console is right beside ours.

Q. Yeah.

A. So he would have told the Griffith operator that we were

shutting down.

Q. Okay. Got you. So a couple other questions on just the alarms in general so that I get a better feel for this and that is when you see things on 6A it appears like they still use the same line designation, right? Like L6, you just know because of the locations that are being impacted? Is that true?

A. L6 would tell us that it's line 6.

Q. But that it could be A or B, right?

A. It could be A or B but it also has a station.

Q. Okay, right, yeah, so identifying process whether it's A or B because you look at that and you know it's line 6 and then you know the station?

A. That's right.

Q. So when we see something that says like "E Superior VFD unit maximum RPM alarm cleared" and we see tons of those. Can you talk to me a little bit about that? Is that something that comes in a lot or happens a lot?

A. It is an alarm we get a lot of because sometimes if the valve is oscillating it will take the VFD on and off.

Q. Okay.

A. And so it's something that could be going back and forth. If we would put up with it for maybe about half an hour and then we would be calling the field to check and see why the VFD is doing that.

Q. Okay, is there -- does it tell you when it comes into

the alarm state as well as when it clears?

A. Yes, it does.

Q. Okay, so if I'm looking at an alarm log and I don't see for every time that it's cleared that there was an original alarm am I missing some data?

A. I'm not sure. That is something you would have to discuss with Les.

MR. JOHNSON: Les.

MS. MACDONALD: Les, yeah.

BY MS. BUTLER:

Q. Got you. But you would expect to have seen the alarm come in and then the alarm cleared?

A. Yes.

Q. Okay. And on that particular one on the alarm cleared, is that something that can clear itself or does that mean that an operator had to interface in some way and acknowledge it?

A. It would depend on the severity of the alarm. Like a lot of them are audible. Like we do get inaudible alarms.

Q. Right.

A. But all the S8's and S6's which are usually operator alarms we physically have to answer them.

Q. Okay, so when you acknowledge them does anything else happen? Like does it quit blinking or change color or does something in the alarm log say alarm acknowledge besides the words cleared?

A. It would depend on what the alarm was.

Q. Okay. So some may and some may not?

A. Yes.

Q. Okay. All right. And when I'm looking at unit descriptions and out to the right it's a descriptor I see something that says for example, Griffith, unit U-3 is now off because we had told it to go off but in parens it says hot unit. Some of the units when they shut down don't appear to always have that hot unit beside it. What's triggering that?

A. I believe it's how long the unit's been running. I'm not positive. That is also something you should ask Les about.

Q. Okay. And so when we look at the descriptor, is there anything that if you say that where it say hot unit beside it but it doesn't say it on any of the others or, is that something that's supposed to tell you as an operator not to do something? Like are you supposed to wait a period of time before you start a hot unit or is that a good thing? Because like the pump block is warm, it should start easier. How has that been relayed to you?

A. Basically what we would do is if we seen one that it had a hot unit alarm and one that didn't we would probably start the one that didn't.

Q. Okay. All right. And then when you look at the LPM system. It's a bit confusing to me because I'm pretty sure I understand that its purpose is to protect over pressure events from happening. To your knowledge is this also supposed to

protect any drop in pressure significant? Is it supposed to do anything associated with low pressures or is it only high pressures?

A. I believe it's only high pressures.

Q. Okay. And so does it look at discharge pressures and at just suction or does it look at suction and just discharge? How is it doing that?

A. It looks at both of them.

Q. Okay. And based on that what would it typically do?

A. Well, if we were getting a higher suction pressure downstream it would go upstream and reduce the discharge pressure.

Q. Discharge. Okay, so is it actually changing a set point?

A. Yes.

Q. Okay. All right. How many of those can it do at once? For example, is it only looking at it station by station as if each station is its own little segment? Like the one upstream and downstream and it just compares that little bit of line and it makes its adjustments that way or does it look at it like the entire pipeline or multiple stations together and make adjustments?

A. If you get three high pressures it will automatically shuts the line down. So its a process. It will start at one station to go that upstream. If not, it didn't help any, it would go to the next upstream.

Q. Okay, so it would like do it in a phased way?
A. Yes.
Q. Okay. And then when you would shut that down, what would that shutdown look like? Would it like say system shutdown or LPM shutdown or station shutdown? If it had to cause a shutdown because you had three high pressures what would it look like in the alarm log?
A. I think it would say high suction shutdown.
Q. All right. Has there ever been a time when you're getting these multiple LPM invalid pressure notification that it's made you suspect of your pressure reading?
A. Certainly. We could lose a transmitter.
Q. Okay, and so if this begins to make you suspect of your transmitter readings, where would you go, would that be to your line display or what is your thought process and into how you eliminate gos (ph.). This really isn't transmitter related. This is something else?
A. Basically we would look upstream and downstream.
Q. Okay.
A. And on suction and discharges depends on where the transmitter went or did not go and that would determine whether we felt it was really a transmitter or if it was actually something else going on like a valve closing or losing pressure.
Q. Okay. So if I'm looking at the following alarm. It's listed as an S4 priority. It's on line 6 and it says "Stockbridge

delivery valve; 650.630-6/17-Sv is in travel closed" (ph.) would that valve had to have had an open command sent or is it possible that it's responding to a change in pound pressure set point?

A. That valve would have gone closed because Dave sent a close to it.

Q. Okay, so it had to have a close command?

A. Yes.

Q. Okay. All right. So there's no way that a set point revision would cause it?

A. No.

Q. Okay. All right. (Indiscernible) I'm looking at discharge pressure transmitter disparities, specifically the (indiscernible) at Minden. What is, I know that that is telling me I've got a difference in a couple transmitters in their readings. But do you know what triggers that like the amount that triggers that?

A. I don't know exactly how much it is, no.

Q. Okay, what would you do about that?

A. I think it's like ten percent or I'm not quite sure.

Q. Okay.

A. What would we do?

Q. Yeah.

A. We would bring up our station display.

Q. Okay.

A. And see how, what the transmitters are looking at, like;

and if we felt one was not reacting from say some changes in the flow or whatever then we would get the on-call and get someone to go look at it.

Q. Okay. And can you get those types of alarms on both section discharge and holding pressures or just section and discharge?

A. We can get a section discharge case.

Q. Okay. Can you get it on holding also?

A. I don't think I've seen a holding disparity alarm, no.

Q. Okay. All right. When I see an MBS alarm and it starts off with something that has a number value like it's seven and then it goes to MBS F6 line 6 alarm, (indiscernible) in section Griffith to Marshall occurred. The beginning numerical designation ahead of where it says MBS what does that mean?

A. You'd have to ask MBS.

Q. Okay. So that is not something that has a lot of relevance to you over your years of experience?

A. Not at all.

Q. Okay. Do you have any input into descriptors? Like when something happens how it's displayed?

A. Not really.

Q. All right. I notice we talked a little bit in your previous set of notes about the fact that when you have had some communications you had to - communication failures you have had to reboot some of the computers. When you do that is that

symptomatic by pressures locking up or flows locking up or what does that look like to cause you to reboot?

A. A comfail?

Q. Yeah.

A. All it means is we've lost communication with the computer at the station.

Q. Right.

A. So we have a process where we can go through and reboot it off our line display.

Q. Uh-huh.

A. And that's what we would try first.

Q. Okay.

A. And if that didn't work then we'd watch for pressures upstream and downstream to make sure that you know, there's not a problem at the station. It's just a communications fail.

Q. Got you.

A. And then we would get our supervisors to call the communications company and get them to find out what the problem is.

Q. Okay. So has there ever been a sense of where say a discharge pressure or some flow values were not updating and you didn't necessarily know at that point it was communication error?

A. I believe there used to be a glitch that was causing that but I think that was fixed a long time ago.

Q. Okay, so how often would you say you've had to reboot to

clear something up?

A. Well, it's one of the first things we do, we try, when we do get a comfail. Comfails aren't as prevalent as they used to be. So maybe in like a day we might get three comfails. So on each of them we would try a reboot. If they didn't come back right away we kind of use the 10-minute thing on that, too.

Q. Okay, so is that like part of a procedure or is that just something that's known in the control room, this is what you do if you lose com for more than 10 minutes?

A. I'm sure there's probably a procedure.

Q. Okay. Can you explain to me just simply because I'm not familiar enough with your system; there seems to be several types of shutdowns that are plausible and there also seems to be several types of lockouts, so to speak. So one of the things I've heard us say is a unit lock up, or lockout. What does that mean to you?

A. Basically what it means is the unit has gone offline and is unavailable.

Q. Okay, and by meaning unavailable does that mean that it had a safety shutdown or for whatever reason you can't restart it by sending a command?

A. That's right.

Q. Okay. Okay, now when we have a system lockup or a system lock down what does that mean to you?

A. A system lockup?

Q. Yeah. If it doesn't mean anything that's fine?

A. I don't remember seeing any system lockups.

Q. All right. Well, then let's talk about what does it mean when we say we have a station lockout?

A. A station lockout?

Q. Yeah.

A. Would mean that all of the units are unavailable.

Q. Okay, now can that be for a variety of reasons?

A. Certainly. I could be fire alarms will cause a whole station to lockout.

Q. Okay.

A. Could be maintenance work that they're doing at the station so we bypassed it. The electrical strikes can cause a whole station to lockout. There's a few things that can cause it, yes.

Q. Okay. All right. Are there any, is that ever done by the operator? Like can you send a station lockout signal?

A. No.

Q. Okay. And similarly when we get say, a Marshall low session pressure alarm is that actually something that's been set at a specific value in the field or to you or PLC versus the SCADA system or is it your understanding that that's based on a value set in the SCADA system?

A. I believe it's set in both.

Q. Okay. Do you know what keeps them the same?

A. No.

Q. All right. Do you have any idea who I could best ask about that?

A. I think Les would probably be the fellow you want to talk to about that.

Q. Okay. Then I think you have an emergency shutdown, is that correct?

A. Yes.

Q. And an operator can actually execute that, right?

A. Yes.

Q. And when you execute that what does it do?

A. We have an emergency line shutdown. We have a stop station. Like there's a few emergency shutdowns we have.

Q. Okay, well just keep naming them. That's what I need. I need to understand that. So you said you have a line shutdown?

A. Yes.

Q. Okay, and so like if you hit that it would shutdown everything that's running and does it close sectionalizing down?

A. No, it does not.

Q. Okay, so you would still have to manually do that, is that correct?

A. Yes.

Q. All right. What about on a stop station?

A. A stop station, it would just stop at station.

Q. Okay. So you would stop anything that's running at that station?

A. Yes.

Q. Does it do anything at all with say a pressure control valve setting or any valving?

A. No. It would just shut the units off.

Q. Okay. When I'm looking in the alarm log would it say stop station?

A. It would say the command went out, yes.

Q. And then I would just see that all units went off after that?

A. Correct.

Q. Okay. All right. Is there any other type of shutdown that you can actually execute from the control room?

A. Well, there's like a controlled shutdown like we're supposed to be shutting it down, I mean.

Q. Okay. So on the controlled shutdown you're just stepping through it yourself as in the operator and doing that in whatever method you think appropriate?

A. Correct. Yeah.

Q. All right. And have you ever requested some enhancements to things in the control room?

A. Plenty of times.

Q. And what happens. How does that process work?

A. Basically, what -- it depends on what enhancement we want. If it's something that I feel is like very important then I would take it to my supervisors; we discuss it. Then we'd start

taking it to people outside the room to get them to process it a little faster that what -- like we have a process where we can ask for an enhancement and then it goes through the channels and you know, in awhile you get an answer. But if you really feel it's important there is a faster process we can go through to get it done quicker.

Q. Is it documented if you go through that faster process?

A. Absolutely.

Q. Okay. And if I wanted to know what types of things they've gone through either the fast process or the slow process, how would I best ask for that?

A. Well, you'd have to know what process you wanted to know about.

Q. That's what I thought.

A. First, find out who initiated it and then they could tell you whether it was fast or slow.

Q. And so if I were to say on Enbridge for all the process enhancements that have been requested in the last year for the control room --

MR. JOHNSON: We would say no.

BY MS. BUTLER:

Q. Would that be everything in your mind?

A. You'd have a lot of paper.

Q. Okay. All right. Okay. What about if it's not really maybe something that's an enhancement but you discovered that

there is something not quite working right?

A. There is in the area where we would ask for the enhancements or the work to be done. There's a high, medium and low area that they would go in. So all the high ones, of course, would be looked at first before the medium and low ones would work.

Q. Okay so if you would probably go through the same process?

A. Yes.

Q. That fair? Okay. But it would just be prioritized differently?

A. Yes.

Q. Thank you for that.

A. No problem.

Q. Is there anything else besides the LPM system that would actually detect over pressure event? Like I noticed you know, we've got this low section coming in but do we have anything for high discharge coming in?

A. Well, the operator, of course, would see it and the colored changes are on the line display.

Q. Okay.

A. So there's plenty of reasons to look at that kind of thing.

Q. Okay. So when we keep talking about the operator sees it on the line display, do they always leave the line display up?

A. Absolutely.

Q. Okay. So if they need you to stay focusing on the particular station or the particular area, are they changing other screens and leaving one of those with the line and maybe one of those with the alarms or?

A. We can put numerous displays on each display.

Q. Okay.

A. But the line display would usually always -- it doesn't get interfered with that much but we have plenty of other monitors that because we can move right across all five or six of our monitors, we have plenty of space where we can bring up whatever we need to without disturbing the line display.

Q. Okay. And so how many screens do you have at console six? Let me clarify that. At the console that 317 and six would be ran off of?

A. We have five.

Q. And they're all like that, right?

A. Yes, they are.

Q. And are there any other screens that you have to interface like for emails or other things?

A. Yes, we do. We have two for that.

Q. Okay. So two and on those two what's going on there?

A. That's where we do our CMT.

Q. Okay.

A. And the, like you said, email and that kind of thing.

Q. Right. Now is there anything on your specific display that highlights that you had an MDS alarm besides it being in the alarm queue?

A. No.

Q. Okay. All right. Okay. I'm going to back to some of the notes that we had from this morning than when you first started this afternoon, I guess you'd say. Did anybody talk to you about like OQ rules of span of controls?

A. No.

Q. Okay. Have you ever heard about that?

A. Span of control?

Q. Right.

A. No.

Q. Okay. All right. And so shifting gears a little bit here, if you were to identify column separation because you've had your color pressure changed, do you also look at the liquid fraction display or is that just something that is kind of there an you don't pay much attention to it?

A. We don't look at it, no.

Q. Okay. Is that mainly for the analyst?

A. I supposed. I don't know.

Q. Can you see it?

A. No.

Q. So if I were to ask you what changes have occurred in the control room since the leak, can you tell me -- since the leak

on 6B that affected Marshall. Can you tell me what those are?

A. Well, we have kind of been encouraged not to --

Q. Discuss that?

A. -- be in the control center that often so I know there's been some procedure changes. I know there's been some pressure allowable changes. But it's not something that I'm really familiar with exactly what is going on.

Q. Okay. All right. Is there anything else that comes to mind that you know there's been changes on?

A. That's about all that I know about.

Q. Okay. In the past, if you were to have received the call separation alarm and assumed it was a leak what do you have to do next?

A. Well, we would shut the line down; close all the valves; let our supervisor know.; we would call people out to walk the line.

Q. Would there be anything else?

A. Record it in Facman.

Q. Okay.

MR. JOHNSON: Basically you have procedures that you would pull up?

MS. MACDONALD: Absolutely.

MR. JOHNSON: We don't expect you to memorize, I'm just trying to be clear. I mean you should (indiscernible).

BY MS. BUTLER:

Q. No, I was just asking for a general. I'm not go back and test you on that. You can tell me, is that at that point then interacting with your emergency procedures or is there procedures that happen ahead of that?

A. No, that would be in like we would bring up our procedures and follow it. It's just that I've done it so many times that.

Q. Okay, so would it be fair that when I say the term "emergency procedures", is that the right term to use for you?

A. Sure.

Q. Okay. All right. Have you to your knowledge in all your years of experience, have you ever seen like an LPM and a load section pressure kind of fighting each other? Like the LPM display and it's making an adjustment and somehow that keeps triggering a low detection pressure alarm?

A. No.

Q. Okay. When they've gone through simulation training do they trigger such things like the LPM actually interfacing? Do you remember a scenario associated specifically with that?

A. They could make the LPM react by dropping a station.

Q. Okay.

A. So yeah, we've done that on the simulator.

Q. Okay. All right. And I think you answered this one already so we'll skip that. I think we've gotten most of these so we're almost done. When you do see an MBS alarm that clears does

that event get entered into Facman as well?

A. Yes.

Q. And who does that? The operator or the MBS analyst?

A. The operator.

Q. Okay. And if I want to know whether or not a station is bypassed, how can I know besides looking at pressure profile?

A. Well, the line display would, if the station is isolated.

Q. Uh-huh.

A. Which is what we do when we bypass for pigs. We isolate the station so we close suction and discharge, open the bypass. We get a letter on our line display showing us that the station is isolated.

Q. Okay. And without ever, when you've done that in the past because you knew, say for example you were getting ready to launch a pig; does that mesh with your pressure transmitters at all?

A. It shouldn't no.

Q. Okay, so in each of those cases you should have pressure transmitters outside those valves?

A. Yes.

Q. Okay. Are you aware of any stations that do not have that?

A. Not right off the top of my head, no.

MR. JOHNSON: I can answer that, Karen. Line 6B has

transmitters. All the stations have transmitters on the suction and discharge lines and along with on the mainline so we do have readings of the main line if the station is bypassed.

MS. BUTLER: Okay. So do we know that the model (indiscernible) is the right one in every case?

MR. JOHNSON: That would be a question for Bill Bock tomorrow.

MS. BUTLER: That's fine.

MR. JOHNSON: I do know that it's going to grab the lower or higher of the two.

MS. BUTLER: Okay.

MR. JOHNSON: And that's, you know, we're defaulting to if it's on the suction side we're looking at the lower, on the discharge side, the higher. So from a safety standpoint I do know it's doing that.

BY MS. BUTLER:

Q. I believe that there were two stations, Theresa, that were referenced in one of the other controllers. Actually it was in a phone recording. And they were indicating that there were two stations where they really were not seeing good pressures. I want to say one was LaPorte and I'm not sure about the other one. I'm trying to pull up my notes. Basically they indicated in this transcripted call that that was because of where the transmitters were located. Does that seem right or not?

A. I would have to hear the call. I'm not sure.

Q. All right. So there's nothing that that triggers you to automatically?

A. No.

Q. That's fine.

MR. JOHNSON: Just so you know, Karen, and it was based on the start up of 6B where the transmitter had been moved off of the mainline.

MS. BUTLER: Uh-huh.

MR. JOHNSON: Knowing that you were going to talk about the placement of these controls, I had the group verify the locations of the transmitters.

MS. BUTLER: Okay.

MR. JOHNSON: Prior to this. That's why I know the information off the top of my hat. So.

BY MS. BUTLER:

Q. Well, thank you. I very much appreciate that. And so, the only other question I think I have for you Theresa, other than a couple of them I'd like to ask you regarding supervision and we might want to ask Curt to leave on these and there's just a few of them; would be on the MBS alarm cleared issue have you ever determined why alarms clear? Have there been threshold movements that have occurred or has there been a flaky transmitter that went in and out or somebody forced some values in the MBS system and then it was released. Have you ever like investigated that and found some reasonable explanation?

A. Sometimes the alarms can clear from bog pressure or you know, the column sep coming back together. As far as someone changing values, I have no knowledge of that.

Q. All right. Any other scenario besides the back pressure that can happen?

A. Well, the oil is moving in the line so if there is a small column sep it could put back together as it all calms down and levels out. Like there's different scenarios to it.

Q. When we restarted 6B we got to see first hand some of the pressure control valve installations and we know that we were out of reduced pressures. But is that something you've seen previously?

A. I didn't, wasn't there when they restarted line 6B and the pressure allowables have been totally changed since I've operated that line.

Q. Okay.

A. So I know the valves have oscillation problems but I couldn't answer the question because I wasn't there.

Q. Okay, well let me rephrase it. I should have asked it more appropriately anyway. Forgive me for that. On the pressure control valve have you ever seen pressure control valves oscillating while you've been running the pipeline?

A. Yes I have.

Q. Okay. And are they typically happening at one or two locations?

A. It would depend on why they're doing it. Like some of them are maybe too big for the line. Like there's variables as to why they're doing it also.

Q. Right.

A. Is the impaler too small, is the impaler too big? Like there's all kinds of variables in that.

Q. Okay. So if we know that we've got a pressure control valve that's kind of notorious for oscillating do we write up anything about that?

A. Certainly a Facmed probably would have been put in yes.

Q. And would it be listed then as pressure control valve concerns or?

A. Sure.

Q. Okay. All right.

MR. JOHNSON: What happens with that, Karen, is now that is Facman talks to maximal.

MS. BUTLER: Right.

MR. JOHNSON: And maximal has a code which the person responding to the control center Facman has to put in as a cause. And it brings it down to a pressure control valve so they can trend it and do proper maintenance or replacement based on the number of call logs and so on, so forth.

MS. BUTHER: Okay. All right. I think I would like to just ask her a couple questions now regarding management. So Curt can I beg you. I promise it won't be long, to step out.

MR. GOESON: Yeah.

MR. JOHNSON: He has no problem with that.

MS. BUTLER: Are we good?

MR. GOESON: No.

MR. JOHNSON: He's walking out slowly.

Now he's gone, yeah. Okay, Karen, go ahead.

BY MS. BUTLER:

Q. Okay. Theresa. You know we've been -- first of all let me clarify something for you. You know when we check into to accidents like this and we try to process what else happened, if we don't leave things better than we found it, for the safety of the public then we haven't really accomplished what we need to. And people like you are key to that because you've seen things first hand and as a result of that I think you have some unique positions to offer us on whether or not you believe your supervision has functioned in a certain way or not. So I'm going to ask you a series of questions that, you know, is just meant to try and clarify some things we think we've seen in the record. And not necessarily seen in the record by you, okay? So I want to be clear about that. So to start off with, I'd just like to ask you --

MR. JOHNSON: Maybe I'll just go one step further, Karen. And I can also leave if that would make you more comfortable.

MS. MACDONALD: No, that's fine.

BY MS. BUTLER:

Q. Okay, so it's not that I think you had a problem with Curt at all, I just want to be able to ask this in a way where I don't feel that I'm having an issue also. And that would be when we looked into, you know, the MBS analyst being experts, do you feel like they're experts?

A. That has kind of evolved over the last few years. When MBS first came in it was a tool that we used as operators. And all the analyst would say to us is that the machine is working properly. So the program is running the way it should be and then we would make the decision on what to do about the alarm we got. But then over the years when the 10-minute rule came in.

Q. Uh-huh.

A. If we got an MBS alarm we could look at our line and say there's no problem. But if that 10 minutes got over then the MBS would rule and we would do the shutdown. So the perception of what they were saying changed over the years after the 10-minute rule.

Q. Okay. So do you think management was aware of how that was perceived?

A. I'm not sure.

Q. Do you think the shift leads were aware of how that was perceived?

A. I think they had -- they had the same perception that I did?

Q. Okay, which -- clarify that for me. That if the MBS analyst would tell you what was wrong or?

A. Yes.

Q. All right. And so when you got a call out as in the middle of the night, somebody that's on call and they are the appointed person to help you make decisions, do you count on them to ask you certain questions or are you trained to just make sure you give them certain pieces of information?

A. No. They can ask us anything they want.

Q. Okay. And have you noticed any recent issues that were different, say in the past with the types of questions you are asked upon a call out?

A. I since I've been there so long I know a lot of the guys that I'm calling out so, you know, there's sometimes personal questions come into it and. But no, I haven't seen a change, no.

Q. Okay. So would you find it typical for someone to give permission to go back up and restart after a 10-minute rule violation if in fact they really didn't get a good handle on the pressures?

A. No. I think the only time that would happen then, the only time that I think would happen, that would be after we had called someone and got them to walk.

Q. Okay. So when you are in the control room, do you have a bonus incentive program?

A. No.

Q. Okay. No. So it's just straight pay, or you know, based on shift differential and all that?

A. Well, like there is a company stip that they put out but everyone gets that. It's not anything special to us.

Q. Okay. So there's nothing that's nothing that's tied uniquely to your metrics or to how you perform as an operator?

MR. JOHNSON: I think maybe -- so one portion of your stip, like mine, is based on your personal performance.

MS. MACDONALD: Yes. Yes. Well, yeah, I guess.

MR. JOHNSON: Along with your business unit and the company's. So in a way everyone has that but certainly your performance has an effect on that?

MS. MACDONALD: Well, yes, I guess it has some effect, yes.

BY MS. BUTLER:

Q. If that's something, though that you've ever been able to tie to anything specific that's being monitored or reviewed?

A. I think it just basically is your performance and you know, if you're not performing properly then of course it's going to change.

Q. Okay, so when we talk about what's performing -- what typical things do they look for to determine how an operator's performing?

A. Well, I think their attitudes towards the other people in the room and the work that they're doing and the people in the

field. If they're putting the information in their Facmans properly or if they're sending out the times, like just all the things that they should be doing; if they're doing them then it's great. But if they're not doing them then that's a performance problem.

Q. Okay. All right. Have you ever had a performance issue that you've been talked to about?

A. Oh, a long time ago.

Q. Okay. Do you remember specifically what that was?

A. I tend to be a little short with people.

Q. Okay. Believe you're nothing at this point. So you've handled this beautifully. So I just want a couple more questions on this touchy topic and then we can proceed however the rest of the guys want to. But regarding the fact that you're not in the control room a lot right now; was that explained to you?

A. Basically the perception I got of it was is it's because they didn't want the other operators that are in the control center to have a perception of how we were -- well because it's been such a strain on us.

Q. Uh-huh.

A. And for us to go down, everyone sees, you know, that it's possibly a strain on us and so they don't want to get morale really down in the control center. They want to kind of keep them thinking that everything is okay. We're just waiting for this and that kind of thing. So.

Q. Okay. So were you told of any specific procedural violation or anything like that?

A. No.

Q. And do you know if when they actually made this decision had they done any investigation prior to making this decision or did they just decide because there are people in the room they're worried about?

A. I don't know why they made the decision. This is the first time they've ever done it.

Q. Okay.

A. That would be something that you should have asked Herb by now. I don't even think he had any part of it. I think that came from upper management.

Q. And was that prior to an investigation, then, to your knowledge?

A. It was prior, yes, because we were taken off the line. We were in Sunday days and we came in Monday night and it was Monday night when we were told we weren't going to be operating.

Q. Okay.

A. So it was before any -- well it was after the investigation would have started but not as far as us.

MR. NICHOLSON: Monday the 26th?

MS. MACDONALD: Yes.

MR. NICHOLSON: Oh, okay.

BY MS. BUTLER:

Q. Okay. All right. And do you know, were there a group of people done at the same time?

A. There was myself, Dave, Tim Chubb; two supervisors taken off and yeah. And --

Q. Anything associated with leak detection that you're aware of?

A. I don't quite know how that worked. I know that the one fellow that was on leak detection moved into a different area.

Q. Okay.

A. And he's not allowed in the control center any more either.

MR. NICHOLSON: Who is that?

MS. BUTLER: What's that?

MS. MACDONALD: Jim. Knudson.

MR. NICHOLSON: Knudson.

BY MS. BUTLER:

Q. Do you know if anything has been done with Shane?

A. I haven't -- to tell you the truth, with the kids that come through, I don't even know what Shane looks like. So.

Q. That's fine. That's fine. Thank you for that information. I know that was a touchy subject.

A. Right.

Q. So I guess I've got a couple more questions for you but not in regards to that specific. This is more on how to prevent this in the future. If you could pass some advice to us, what

would it be about how best to prevent this in the future so nobody has to go through what you're going through right now?

A. I think the one thing we have to do is we have to put MBS back to where it was before whereas they tell us whether the -- they tell us whether their thing is working properly and then this decision is put back on us as to what we do about it. Because if they had came to me and said okay, we have this column separation and my machine says it's working good, is -- it would trigger me to think well, is there a reason for a column separation to be there.

Q. Okay.

A. And then it would have got looked at.

Q. All right. So is there any additional alarms that could have been helpful?

A. I don't think so.

Q. Okay.

A. And another thing I would like and I know before they changed around the supervision area.

Q. Right.

A. The supervisors all were pipeline operators.

Q. Okay.

A. So when we had a problem we had someone we could talk to about it and help us make the decisions.

Q. Uh-huh.

A. Whereas now the decision is you know, it's either on,

well probably it's on the MDS guy but the decision is ours and sometimes the supervisor we're talking to is a terminal supervisor and he's only worked on terminals, he hasn't, you know, he doesn't know what we know about the line and so it's not -- we don't have that second person we can discuss the problem with.

Q. Okay.

A. Except for the other operators in the room and that's one thing we've tended to really start doing is depending on our console mate.

Q. Okay. And so I'm taking it that from your statement that it's not just like external, it's also your shift leads internal. Is that correct?

A. What's not external?

Q. Like you mentioned terminal operators that when you're calling to, or when you're asking around having pipeline experience from those people that would be involved in the decision. You mentioned supervisors but you didn't say what supervisors?

A. Well, I mean the ones in the room.

Q. Okay, so you're talking shift leads?

A. Yes.

Q. Okay. Would there be any other title?

A. No, I don't think so.

Q. Okay, I just wanted to make sure.

A. We call them names sometimes, but.

Q. When you went down the terminal operator path I wanted to make sure that you weren't also talking about people that you have to call out.

A. No. No, no. I'm talking the shift leads in the room.

Q. All right. Okay. Do you know if that's being discussed at all?

A. I have no idea.

Q. Okay.

A. That wouldn't be anything we would know until it was all decided.

MS. BUTLER: Okay. Well, I just want to take before I turn it back over, I want to take a few minutes to just say thank you because you know, you've been very forthright and very concise and I greatly appreciate the fact that you seem to know what we're trying to do is that to determine what went wrong and make sure we prevent it from happening again. So with that, I think it goes back you, Matt. And do you want to pull Curt back in or not. I didn't mean to.

MR. NICHOLSON: Yeah, we can pull Curt back in at this point. And Jay, acutally I think I neglected to include you in the rounds here.

MR. JOHNSON: No, you haven't. I have kind of been able to interject as it goes along. So that's fine, Matt. Thank you. Otherwise I'm vocal enough to let you know.

MR. CHHATRE: I just have a few follow up questions.

MS. BUTLER: I must say that's never one thing I worry about, Jay.

MR. JOHNSON: I didn't think so.

MR. NICHOLSON: I'm going to go ahead and questions. They're not -- no one's going to miss anything if they don't hear these but.

BY MR. NICHOLSON:

Q. I was going back. Karen was talking about the Stockbridge valve?

A. Yes.

Q. And pointing out that if we're seeing it in travel close, we should have seen a close command, right. And it does appear that on the 24th there was an instance where we see actually, close valve command to that same valve. But there's also a Stockbridge valve. I'm just curious, what's the difference. There's an XV and just a V suffix. What is that?

A. And XV and V.

Q. Yeah.

A. One would have been the delivery valve and one would have been the tank valve.

MR. JOHNSON: The XV is considered the cross over. Goes from six crossing over to 17. So that's where the XV comes in. That's a valve designation.

MR. PIERZINA: That's the delivery valve. Right.

MR. JOHNSON: Yeah.

MS. MACDONALD: And one them, V would have been the section -- well, not section.

MR. JOHNSON: So you'd close one valve. You'd open the crossover valve, you close one so you'd change the flow?

MS. MACDONALD: Yeah.

MR. NICHOLSON: It says Stockbridge is fed from 17 and?

MS. MACDONALD: No.

MR. JOHNSON: No. At Stockbridge you can go into the manifold and fill tanks or you can flow directly down line 17.

MR. PIERZINA: That's the start of line 17.

MR. NICHOLSON: Two-way valve. Three way. Okay. So it's a divert.

MR. JOHNSON: No, you can only go off of 6B into Stockbridge. You cannot come back in there.

MR. NICHOLSON: Right. But you either going to tanks or you're filling 17.

MR. JOHNSON: Correct.

MR. NICHOLSON: So it's a divert. It's either one or the other?

MR. JOHNSON: No, you'll close a valve on 6B.

MS. MACDONALD: Yep.

MR. JOHNSON: After you've opened up the valve, if you will, it's at a T.

MR. NICHOLSON: Right.

MR. JOHNSON: So you open up this valve, you close this

one. It flows.

MR. NICHOLSON: Yeah.

MR. JOHNSON: And then depending on where it's going.

MR. NICHOLSON: Yeah, that's what the V is the open, close.

MR. JOHNSON: The V is just basically -- the straight V is just closing off 6B?

MS. MACDONALD: Yeah.

MR. NICHOLSON: But the X is your--

MR. JOHNSON: Delivery guy.

BY MR. NICHOLSON:

Q. I got the station drawings here. I'd just have you point out to me what that was. It just came up in Karen's questioning. I thought here. If you could just show me on that station drawing where the transmitters are that you see? I didn't understand all the nomenclature on this drawing.

A. No. These will be the case ones.

Q. Oh, that's your -- which ones? All three of those?

A. Yeah. These two. One and two.

Q. Two. Okay those are case pressures.

A. All right. And discharge is down here. So here, right there where the little arrow is.

Q. Okay, that's discharge pressure there.

A. Yeah. And this --

Q. So where's the throttle? This is your throttle valve up

here?

A. That's your valve. We don't have a -- we have a transmitter for throttle.

Q. I'm sorry, where is--

A. That's the little dot.

Q. Oh, that dot. So every dot is a transfuser (ph.)?

A. Yeah.

Q. Okay, so you got it on the main line?

A. Yeah.

Q. And this is your isolation valve that you command shut?

A. Yeah. That would be our discharge valve.

Q. Okay.

A. That's your suction valve.

Q. Sectionalizing valve?

A. That's a sectionalizing valve.

MS. BUTLER: So, Brian?

MR. PIERZINA: Yes.

MS. BUTLER: Do you see the (indiscernible)

MR. PIERZINA: I am standing right behind Theresa.

MR. NICHOLSON: And actually let's go back.

MS. BUTLER: Well, you know those little dots are hard to see from here.

MR. JOHNSON: Not so easy to see from here.

MR. PIERZINA: I thought about trying to describe it verbally what we're looking at but if you just tell us. This is a

discharge transmitter here?

MS. MACDONALD: Yeah.

MR. PIERZINA: Okay. And where is the other discharge transmitter?

MS. MACDONALD: Here. Right here.

MR. JOHNSON: I may have those sitting in an email in PDF form.

MR. NICHOLSON: Well, they're in IR. This is an IR. We've got it. Karen.

MS. MACDONALD: And these are the suctions here. And here.

MR. PIERZINA: So you've got a suction transmitter on each side of the station suction valve and you have a discharge transmitter on each side of the station discharge valve.

MS. MACDONALD: And these are the case pressure.

MR. PIERZINA: And you have case transmitters upstream of the pressure control valve.

MS. BUTLER: So could you go to Stockbridge and show Brian the holding transducers.

MR. NICHOLSON: Don't think we have.

MR. PIERZINA: I don't --

MS. MACDONALD: Do we have a Stockbridge map?

MR. PIERZINA: I don't know if we have that readily at our fingertips. We were looking at the Marshall station.

MS. BUTLER: Okay. All right. That's fine. You can't

blame a girl for asking.

MR. PIERZINA: No, but that's certainly --

MR. JOHNSON: But he's probably got it.

MR. PIERZINA: Certainly available. Matter of fact --

MR. NICHOLSON: Well, tell me if it's on here. I'm not, this looks like all to me line sectionalizing. I don't know (indiscernible).

MR. PIERZINA: I think that's just the line sheet.

MS. MACDONALD: That's just a, this is a valve display.

MR. PIERZINA: Yeah.

MS. MACDONALD: It won't be on there.

MS. BUTLER: So while you guys are just asking some general questions like that, two things, Jay is it possible (indiscernible) to get the alarm when they're going to be reviewing the line 3 and line 17 to make sure we get them all. Is it possible to get that in Excel this time instead of text?

MR. JOHNSON: I can ask. I mean I really don't know.

MR. PIERZINA: That's probably what it comes from.

MR. JOHNSON: I just flat out don't know.

MS. BUTLER: Yeah, because what they did is when they sent those original files they put a header on the top and they put a rock character and it makes it really hard to split it out. So it would be helpful if we could get that in Excel.

MR. JOHNSON: Okay, I will certainly ask.

MR. PIERZINA: Karen, getting back to your question on

the Stockbridge holding pressure transmitter.

MS. MACDONALD: These are our case transmitters. And if the valve is partially close it shows up in our case.

MR. NICHOLSON: Okay. Your case pressure?

MS. MACDONALD: Yeah.

MR. NICHOLSON: It changes color or?

MS. MACDONALD: No. It's different than the discharge pressure. Case and discharge are usually the same.

MR. NICHOLSON: Oh, okay.

MS. MACDONALD: So if the case pressure starts going up.

MR. NICHOLSON: Right, you know this is a problem.

MR. NICHOLSON: We know that the valve is throttling.

MR. NICHOLSON: And is Niles different than Marshall?

MS. MACDONALD: Not really. No. There's your discharge. There's number two suction; second suction one. There's the two case ones. Pretty well the same.

MR. NICHOLSON: Okay.

MS. BUTLER: And while we have you guys just discussing general stuff, the alignment sheets that we had, you guys have sent us a set which we have looked through and we greatly appreciate. Are sectionalizing valves all supposed to be on those alignment sheets down at the bottom? Do you know, Jay?

MR. JOHNSON: The normal alignment sheets that I'm used to, you're going to see them in that plain view and then they'll also be in the pipe band down below if they're on the main line.

If it's a suction or discharge valve which are off the main line chances are they will not show up there.

MS. BUTLER: Is there a reference to them at all?

MR. JOHNSON: Normally there's not.

MS. BUTLER: Okay. Well, we were finding a mixed bag on that. We couldn't figure out what was going on. Like we had a couple of them but we were missing at least one.

MR. PIERZINA: Yeah, specifically we could not find 576.93 on the alignment sheet.

MR. JOHNSON: Normally if a valve has got in that case what is the mile post number that would mean it's on the main line. Otherwise it gets a station and a letter designation so if it's got that mile post number it normally would be found on the alignment sheet.

MS. BUTLER: Can you make a note to go look for that and tell us whether it's been left off or not?

MR. JOHNSON: Yeah, which one, Brian?

MR. PIERZINA: Yeah, 576.93. That's the --

MR. JOHNSON: 576.93.

MR. PIERZINA: That's the routine one that's closed on a shutdown. So it's a mainline valve.

MR. JOHNSON: And that's at what location?

MR. PIERZINA: It would be right at Minden.

MR. JOHNSON: Oh, at Minden.

MR. PIERZINA: I would have thought it --

MR. NICHOLSON: Just upstream.

MR. PIERZINA: I would have thought it would have been that mainline valve just outside of, just downstream of Minden station. But.

MR. JOHNSON: That's quite easy to find out.

MS. BUTLER: Thanks, Jay. Because if it is just not on there we'd like for that to be fixed and you not have to wait on anything in case somebody needs it.

MR. NICHOLSON: Jay did you have any other?

MR. JOHNSON: No. And then I believe also, and I don't know if you have those on the screens but the control center if I'm not speaking out of line here; has the valves that they can control on their screen?

MS. MACDONALD: Yes.

MR. JOHNSON: You also have a screen you can pull up with the hand operator valves?

MS. MACDONALD: Yes.

MR. JOHNSON: So they know where all the valves are even if they can't operate them. And the thought behind that is they can, they then when they're talking to like if they call up (indiscernible) in the middle of the night and he doesn't have his alignment sheets there he can say you know, we closed this valve and this valve but there's a manual valve in between if you can send a technician to there. So that's why they have that so the control center has those valves and I just need to make sure that

that valve is on the alignment sheet as requested. So just trying to give you a little idea of how they, "they" being the control center sees those valves.

BY MR. NICHOLSON:

Q. Yeah, I think I'm looking at that screen right here, actually. I see it says all main lines sectionalizing and block valves here. So some of the valves are blue. Some are green. One is red. Red is closed?

A. Right.

Q. Green is open.

A. Yes.

Q. What's blue?

A. Unknown.

Q. Unknown state?

A. Yes.

Q. And what is it with the valve tag number has got a blue background. What is that?

A. I'd have to look at it. It's right here. That's one of our, that's one of the valves that we close on a shutdown.

Q. Right.

A. That just tells us that that's what that is.

Q. The blue. So it's always got a blue background telling you what's normal and sectionalizing valve?

A. Yes.

Q. Okay.

MS. BUTLER: So you guys are going to have to tell me that. Brian?

MR. PIERZINA: I'm not watching.

BY MR. NICHOLSON:

Q. The gray outline I think is a com failure from other interviews?

A. Yeah.

Q. Okay. And that looks like it's a darker blue?

A. Yes. Than this one here.

Q. Okay, and what was the dark blue?

A. It's just a color that they use for them.

Q. For a loss of communication?

A. Yeah.

Q. Okay.

A. There is another valve status that you can actually put the details in and it shows all those valves that you were talking about.

MR. JOHNSON: The hand valves. The manual valves.

MR. NICHOLSON: I'm going to back just for a second for some things that Karen had said on the 25th.

MR. JOHNSON: This (indiscernible) say 93 and R shows 92 is that?

MR. PIERZINA: I don't know. It's at a station so it could be.

MR. JOHNSON: Okay. That helps a lot.

MR. PIERZINA: So I wouldn't want to make that assumption.

BY MR. NICHOLSON:

Q. Theresa, you said if you had a disparity, an oil pressure disparity, that would cause you to bring up another display? Station display?

A. Yes.

Q. So I think it was expected that you would have disparity alarms at Niles because it was bypassed?

A. Possibly, yes.

Q. But at Minden it looks like you get a discharge pressure transmitter disparity alarm as well?

A. Okay.

Q. This is before the mass balance alarm but after the LPM alarms?

A. Uh-huh.

Q. Would that have been something that would cause you to bring up a station on a shutdown?

A. It depends on how long it stayed. We have a certain time limit that we leave disparity alarms and it just happens to be 10 minutes.

Q. So will a disparity alarm clear?

A. Oh, yes. Because a disparity could cause just because the valve oscillates a little bit so the pressures can be different between the two transmitters and that will cause a

disparity alarm.

Q. And when it clears I'll see what?

A. That it's cleared.

Q. It'll say "disparity alarm cleared"?

A. Yes, I believe so.

Q. I don't see that here. Okay. I see an example of it earlier on but I don't see it for the Minden station.

MR. PIERZINA: You don't see it clearing?

MR. NICHOLSON: I don't see it clearing.

MR. PIERZINA: That's possible and I think that's one of the things that we were looking at is that it's possible that the transmitter may be downstream of that 576.93 which is closed. So in that case it wouldn't clear.

MS. MACDONALD: It wouldn't clear, yeah.

MR. NICHOLSON: That would make sense.

MR. PIERZINA: And that's why we're looking at the alignment sheet. See where 576.93 is so we can find it.

MR. NICHOLSON: Well, we have another line drawing that shows 576.93. It's this one. It's what we were talking about on the phone the other day. I can't tell you which I.R. this is, Karen. Here's Minden. So Minden is 576.90 so there's .93. So it is, it's just on the out.

MR. PIERZINA: But you don't know -- you won't know from that where the -- you wouldn't know from the alignment sheet where it is either but.

MR. NICHOLSON: Well, just in relationship to the station it's downstream of the station, right?

MR. PIERZINA: Yeah.

MR. NICHOLSON: It doesn't tell you with regards to the pressure transmitter where it is. Is that what you're saying?

MR. PIERZINA: Yeah. But I guess you would expect it to be similar to the other stations.

MR. NICHOLSON: So if we pulled up that SCADA screen for Minden like I was showing you earlier.

MS. MACDONALD: Uh-huh.

MR. NICHOLSON: We would see the sectionalizing valve and the pressure transmitter locations?

MR. PIERZINA: Yes.

MS. MACDONALD: Yep.

MR. NICHOLSON: Ravi, your turn.

BY MR. CHHATRE:

Q. Just a follow-up on my previous question about you are asking (indiscernible) once you heard that column separation I guess, so my question is in your opinion on the day of the accident do you see Dave do everything properly or right in your opinion as a mentor?

A. Yes.

Q. The last question is, after almost two and a half hours here, do we forget to ask you anything or should we be asking you something or should we know something that we haven't asked or

maybe you haven't told us that's would have an impact on an accident investigation? Anything that comes to mind you think of.

A. The impact on myself or upon your investigation?

Q. That we should, "Gee, guys you should know this or you haven't asked me, this is something you need to know"?

A. No, I can't think of anything.

MR. CHHATRE: Thank you for your time.

MS. MACDONALD: You're welcome.

MR. PIERZINA: I have no additional questions.

MR. NICHOLSON: On your end?

MS. BUTLER: Nope, I'm done.

MR. NICHOLSON: Hockey man, do you have questions?

MR. JOHNSON: I have no questions.

MR. NICHOLSON: Okay, with that I guess we'll conclude this interview of Theresa McDonald. I appreciate your time. It's getting pretty boring coming back and talking to us --

MS. MACDONALD: That's all right.

MR. NICHOLSON: -- on the same subject repeatedly, but I appreciate your time and your answers are greatly helpful so thank you.

MS. MACDONALD: Thank you.

MR. PIERZINA: Thank you very much.

(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 Theresa MacDonald

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.

_____

Amy Shankleton-Novess
Transcriber