UNITED STATES OF AMERICA

NATIONAL TRANSPORTATION SAFETY BOARD

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

Interview of: JAMES JOHNSTON

Enbridge Headquarters
Edmonton, Canada

Friday,
December 17, 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

ITEM		PAGE
Interview of James Johnston:		
By	Mr. Nicholson	5
By	Mr. Chhatre	16
By	Mr. Nicholson	28
By	Mr. Chhatre	30
By	Mr. Nicholson	37
By	Mr. Chhatre	38
By	Mr. Nicholson	43
By	Mr. Chhatre	44
By	Mr. Nicholson	53
By	Ms. Butler	74
By	Mr. Chhatre	78
By	Ms. Butler	87

I N T E R V I E W

MR. NICHOLSON: All right, good evening. Today is Friday, December 17th, 2010. My name is Matthew Nicholson and I'm an investigator with the National Transportation Safety Board in Washington, D.C. We are currently in Edmonton, Canada at the Enbridge Headquarters and meeting in regards to the pipeline spill in Marshall, Michigan that occurred on July 25th, 2010. This is case number DCA-10-MP-007.

Before we begin, Jim, I'd like you to please state your full name and whether we have permission to record this interview.

MR. JOHNSTON: Sure. My name is James Scott Johnston, and you have my permission to record.

MR. NICHOLSON: Thank you. Also if you'd like, you're permitted to have one other person present during these interviews. It's a person of your choice or no one at all. Can you tell us for the record whom that person might be that you've chosen?

MR. JOHNSTON: I understand, but I haven't brought anyone. I haven't elected to bring anyone.

MR. NICHOLSON: All right, at this time I'll go around the room and each person participating introduce themselves, state your name, the spelling, the organization that you represent, your title, and a business e-mail or phone number for contact.

I am Matthew Nicholson, M-a-t-t-h-e-w, N-i-c-h-o-l-s-o-n. I am the IIC for the NTSB on Marshall Michigan release. My

contact information is [redacted]

MR. CHHATRE: My name is Ravi Chhatre. That's R-a-v-i-n-d-r-a; last name C-h-h-a-t-r-e. I am accident investigator with National Transportation Safety Board, Washington, D.C. My e-mail is [redacted]. I am here to assist IIC Matt Nicholson in this investigation.

MR. JOHNSON: Jay Johnson, senior compliance specialist on the pipeline safety compliance crew for Enbridge, and for contact information is [redacted] and that's j-a-y.j-o-h-n-s-o-n.

MS. BUTLER: I'm Karen Butler. I am the PHMSA [redacted] supervisor here in [redacted] and my contact information is Karen -- [redacted].

MR. JOHNSTON: I am James Johnston. J-a-m-e-s, J-o-h-n-s-t-o-n. I am the training coordinator for control center operations at Enbridge Pipelines. My contact information is [redacted].

INTERVIEW OF JAMES JOHNSTON

BY MR. NICHOLSON:

Q. Okay. Thanks, Jim. I think what we'd like to do is just start by having you tell us when you started at Enbridge, a little bit of your background, maybe, you know, when you started, what capacity you started in, and what position you are in now.

A. I started with Enbridge in 1989 as a control center operator, one of our more remote control centers.

Q. Just gas or?

A. This was -- our Norman Wells Control Center is liquids.

Q. Okay.

A. Up in the Northwest Territories of Canada. Transferring to the Edmonton Control Center in 1994. I'm currently the training coordinator for control center operations. I've also held the position of training coordinator for Edmonton Control Center from 1997 to 2000, and from 2000 to 2007, a mix of control center operator and other training activities.

Q. Okay.

A. I've held my current position since 2007.

Q. Okay. So is it only training or are you also responsible for procedures?

A. It's a blend of duties. It's training. There's some compliance, consulting, and administration, procedures administration and related duties.

Q. So I don't understand. Do you actually write these procedures that we've seen today or? Okay.

A. I administer the process. So we have a quality management system that defines the process, and myself and one of my reports do the administration, the handling of the revisions and modifications.

Q. Okay, so if a new procedure is required, do you write that or do you just oversee the writing?

A. Well, we respond to change requests that are initiated

by people usually within our group.

Q. Okay.

A. And we take those change requests through the process of the quality management system until they're --

Q. Maybe you could explain that quality management process then?

A. Sure.

Q. And who -- you say someone in your group, so that's anyone in the control center, I guess, right?

A. Right.

Q. Is that your group?

A. Yeah, so any person within our group can initiate the procedural proposal, a request for change. Those requests are forwarded to our CCO compliance group, which is the two people, myself included, I mentioned earlier. After initial assessment, the procedure is formatted and sent out to the stakeholders for review. The procedures are posted, the comments are gathered, approvals are gathered, after which we notify the stakeholders again that the procedure has been approved, and it's in use; it's been established an a official procedure.

Q. So we heard a lot about this proposed procedure that got pulled up on the -- I guess it was the morning of the 26th. How would that proposed procedure have been available to somebody without being released?

A. Sure. So as part of the review process we post the

proposed procedures in sort of a discussion board format and let people make comments. In particular we are looking for comments from people who have been identified as reviewers from their respective areas within our group. We look at those comments and the individuals that are designated as approvers look at those comments and would make their decision to approve based on those.

Q. So this Gazelle, I think her name was, was an approver? Is that how she had --

A. No, she would have been --

Q. A stakeholder?

A. A reviewer. That's someone without approval responsibilities, but they can make comments.

Q. And I want to understand, this is all through Lotus Notes; it's an electronic system?

A. Yeah, that's where we post the proposed revisions.

Q. But it's unsanctioned that she bring that up and actually use it, right? As a proposed standard she should not have been referring to that as a --

A. That's correct, yes.

Q. Okay. Can you talk a little bit about the training that goes on for these procedures, how that's -- how it's performed and how you develop training plans for these procedures?

A. Sure. Well, the procedures of course contain work instructions for operators and also shift leads in the performance of their tasks in response to conditions that occur on the

pipelines or terminals that we operate. Exposure to the procedures begins at the beginning of our entry level training process for new operators. So we have an established program for new operators that includes usage of the procedures at different points along the training process.

Q. Okay. What about an already trained procedure and re-qualifying? How does that --

A. So that would fall into the category of ongoing review of procedures, which we have established as an ongoing process for all of our control center staff. We also do annual review of the procedures. We review them in annual training sessions, at least the emergency procedures are reviewed, and emergency response training is handled annually. They're also referenced in some of our other processes, hazard awareness programs and follow-up to incidents and that sort of thing.

Q. You say you review them yearly. You mean review them with the operators to ensure their understanding? Not review them for accuracy or?

A. Both.

Q. Okay.

A. As part of the annual procedure review process we review for accuracy all of the procedures in the database. In annual emergency response training we focus on emergency procedures themselves, primarily the ones if there's been any changes or anything that seems noteworthy about those emergency procedures.

Q. So the proposed changes that people will make, how do they route those to your group?

A. Typically, they'll look at a procedure in production if it's based on an existing procedure. If they look at it and have a proposal to make it more clear or if they see that there may be an error with that, they'll forward their proposed changes, in other words, modify a draft of the procedure.

Q. Okay.

A. Forward it on to CCO compliance analyst, and with changes highlighted and an outline of what the change is.

Q. Uh-huh. And then from there you do what? You bring in the stakeholders or? So if I'm changing the MBS alarm procedure, for instance, that affects both the control center operator and the MBS analyst, right? They're kind of two different groups. How do you bring all that together?

A. Sure. So after an initial assessment by the compliance group to see if it applies or if it is even close in the category of a procedure, then the procedure would be formatted and a notification would go out to a predetermined list of recipients based on the category of procedure in our manual. So normally we don't as a matter of quality management system distribute outside the group; the work instructions pertain to on-shift controllers or operators and shift leads. So that would be when the review by the control center staff would start and comments would be generated.

Q. From the shift leads and the who?

A. And the operators.

Q. Oh, okay. So the operators actually have input into this as well?

A. Right. They have input into procedures that are being proposed by others, and they can also propose changes as operators. The recipient list for -- depending on the type of procedure, it would also include stakeholders like our management group, our engineering group, our technical services group, and our training group.

Q. When I've gone through these procedures, what I've noticed is they don't have a lot of detail to them, and I think one of the shift leads brought that up as well as something he'd like to see. You know, when I looked at like shutting down a line or starting up a line, I mean it doesn't tell them, you know, how to -- which station to start with to drive the pressure control valves down first before shutting it. There must be a reason for that that you've left them kind of open to interpretation. Is that by design or is that --

A. Depending on the procedure. If it's one of our general standard normal operating procedures for a pipeline, for example, we wouldn't necessarily put a particular sequence of work instructions, they should start this pump then change this control valve setting. So that is by design to build in flexibility into the process, into the task, which if there's any need to have a

particular work instruction that maybe will apply to just one pipeline, we have another section in our manual that would have that console-specific work instruction.

Q. Those are considered work instructions, not procedures?

A. I guess I'm not -- the terminology I'm using is the work instructions would be the part of the procedure that tell the user what to do.

Q. And that would be a link -- if you wanted to get into something specific, it would be a link from a master procedure maybe? Is that --

A. Right. So there are master procedures in our sections A, B, and C of our manual, and then sections D and E contain supplementary console-specific procedures and additional instructions if something applies to just one pipeline or --

Q. That's section D and E?

A. Uh-huh.

Q. Okay. I don't think I have copies of D and E.

MR. JOHNSON: And if I'm not mistaken, and I know I get this somewhat from Steve and Lloyd also, is no one can just sit on a console and use the procedures to start up or shut down a line. These are already trained personnel that are on the console using these procedures. So there's, you know, steps in the simulators and everything else where they're learning the things behind the steps.

MR. JOHNSTON: Right.

MR. JOHNSON: So it's not like I could go in there or, Ravi, you could go in there, and start up a line based on that. These are procedures that give direction to people that are trained.

MR. NICHOLSON: So the answer is that the procedure is not meant to act in that capacity. Training picks up the details.

MR. JOHNSON: Procedures not -- yes, the training. So you have different training steps than procedural steps.

BY MR. NICHOLSON:

Q. Is that understood by the control center?

A. I believe it is. And primarily in the pipeline side as opposed to the terminal side, different conditions or line fill or initial pressures, for example, could lead to a different sequence in order to start a step.

Q. Right. You can't write a procedure for everything. I understand. I think it was Kurt, though, in his interview who said he was confident that the procedures were written such that nontechnical persons could make sound decisions in the control center, and I guess if you're a nontechnical person, you would maybe want to see a little more detail in the procedure to be sure you were asking the right questions or whatnot.

So I guess if I ask you, is that statement accurate? Do you think these procedures are written in a way that someone without a strong technical background can --

A. Well, the general steps could be used, I believe, to

accomplish a task. So the general steps might include things like before a pipeline started up to notify the other operators, open boughs before you start pumps, verify flow, and those sorts of things. But we wouldn't let somebody do that -- we wouldn't allow somebody to start a pipeline without having completed the training beforehand. So --

Q. I'm thinking more of shift leads. I mean operators are going to be probably more technically inclined just from training alone, right? What about shift leads? I mean, like here's MBS leak alarm, right? I mean is there sufficient detail in here for some of these shift leads to pick up and ask the right questions of an MBS analyst?

A. Right. So shift leads in our group are former operators, so they would all have taken the operator program in whatever form it existed in at the time they were operators, and achieved a certain technical background proficiency before becoming shift lead.

Q. So these procedures are written assuming that the person using them has at least some base level of training?

A. That's correct.

Q. That being the operator level?

A. (No audible response.)

Q. And then how do you tailor your training to the procedures as far as, I mean, what procedures you review annually and --

A. Right.

Q. I mean, some are probably verbal, some are simulator based, right?

A. Uh-huh.

Q. Okay.

A. So there's a number of different ways that we address procedures in the training. In the operator training program there are training modules that establish a foundation of knowledge that needs to exist before the procedures can be, I think, fully understood. So there are written training modules that describe the thought process behind many of the procedures that exist in our system. In addition, there are specific learning objectives within the training program where a trainee will review procedures with a mentor or an instructor. We also have the operators perform proficiency evaluations on the main procedures that they will do the normal operations, such as starting up a pipeline.

Q. Okay.

A. And observe the correct performance of the procedure as well as --

Q. On a simulator or at the console?

A. Both.

Q. Okay.

A. We tend to focus on demonstration of proficiency of normal operations in real operation towards the end of the

training. For abnormal operations, we tend to use the simulator more to trigger those events and observe the response.

Q. Okay.

MR. CHHATRE: I mean, if we want to do kind of an information exchange as you go along, then I can ask questions. I will let you finish and then ask questions, but do you prefer interaction?

MR. NICHOLSON: Let's do interaction.

MR. CHHATRE: Okay.

BY MR. CHHATRE:

Q. Okay. I have several questions for you. I'm not quite sure how your umbrella, what is included in your umbrella of training? Which departments, which personnel, which tasks?

A. Okay, we have a specific training program for new pipeline operators. We have a specific training program for new terminal operators.

MR. JOHNSON: One second.

MR. NICHOLSON: Go ahead. Okay, go ahead.

MR. JOHNSTON: Continue?

MR. NICHOLSON: Yeah, go right ahead.

MR. JOHNSTON: We have a training program for shift leads. We have other topical training that we do, such as when a new pipeline or terminal is brought into the control center.

BY MR. CHHATRE:

Q. But again the training will be for the operators --

A. Oh, I'm sorry.
Q. I'm just trying to understand which people are in your umbrella.
A. Oh, okay. Right, so the operators.
Q. Okay.
A. Shift leads.
Q. Okay.
A. We also have a training program for CCO, control center engineers.
Q. Okay. And these are all degreed engineers?
A. Yes.
Q. I want to make sure that it's not a loose title.
A. Right. Engineers are professional engineers who are working for us. They are engineering designation.
Q. Right. Okay, formal engineering education.
A. Yeah, that's correct.
Q. Compared to you can be an engineer and be just as -- what do they give you?
A. Sure.
Q. So CCO engineering, control room. Still so far I'm getting the gist that it's mainly a control room focused, the training.
A. Yes. It is absolutely, our training is focused on within the department and primarily with on-shift staff.
Q. Okay, so who would be your immediate supervision?

A. Blaine Reinholt (ph.).

Q. Okay, Blaine. And how many people are under your umbrella in terms of staff that report to you to take care of the activities?

A. Sure. We have three full-time training facilitators to help deliver the training. We have one full-time technical records administrator that helps with the procedure following management systems process.

Q. Okay.

A. So there is myself and four people.

Q. Four people. Now, you said training facilitators, meaning they are the ones who offer training, like instructors?

A. That's one of their duties. They would also help coordinate the on-the-job training, which is delivered by our experienced operators. We refer to them as mentors.

Q. Okay.

A. So they coordinate and track the progress of the on-the-job training as well.

Q. But they're not reporting directly to you?

A. The training facilitators report directly to me.

Q. Well, there were mentors (indiscernible).

A. Sorry?

Q. I'm getting kind of confused. So you said the three facilitators not only just do on-the-job -- they just don't instruct the whole group, but they also do on-the-job training and

then you mentioned facilitators, so I'm wondering if these three people who do the mentoring also are mentoring is done by routine operators?

A. Mentoring is done by operators on shift.

Q. Okay. All right. Now, if an employee operator wants, suggesting a change, or even the few personnel that are impacted by your control center, how do they get a change considered by you guys? Is there a standard form that they have to fill or you can take multiple requests or e-mails?

A. Our standard format is an e-mail request from people in our department. If someone outside the department has a request, they would generally go through our management group or technical services group for them to initiate the change.

Q. And the management group reports to whom?

A. Management group reports currently to Kirk Burdis (ph.). Well, and I'm including Blaine Reinholdt, Kurt Goeson.

Q. Okay. Is it management or some other group you mentioned, management and --

A. Our technical services.

Q. Technical services. What is that group?

A. That's a group of technical specialists with an operations background. They also report to Blaine Reinholt.

Q. So the other people, the (indiscernible) analysis and terminal analyst and that kind of stuff?

A. Yes.

Q. And is their training the same as the new operator, shift leads? So essentially they get the same training as the operators do?

A. Right. So all of the analysts and the people in the technical services functioning area are also former control center operators.

Q. Is that a requirement?

A. I don't know if it's necessarily a requirement. It's just the current state of --

Q. Okay.

MR. NICHOLSON: So if they weren't a previous operator, you would put a profile -- I mean, they'd have to take the courses that an operator takes?

MR. JOHNSTON: It hasn't come up yet, but I would say that that would be the best way to handle it.

BY MR. CHHATRE:

Q. So outside (indiscernible) goes through your management consultants or technical support if they're -- I mean, if there's an operator someplace that you feel that (indiscernible) should not be at this location, there's a problem or the solar system is not working or whatever the case may be, that will go through that thing. They cannot contact you directly?

A. They could contact me directly, but the normal thing, they have closer working relationships with our technical services, engineering.

Q. But it's not barred that they cannot contact you directly?

A. No.

Q. I got the impression that you said they had to go through management group, so.

A. Oh, no. I'm sorry.

Q. They give them directly to you?

A. Yes.

Q. Okay.

MR. JOHNSON: But then you would have to fill out a form to track it, right? So if they talked to you verbally, you would fill in the form?

MR. CHHATRE: No, no, I mean contacting the e-mail. I think he said he has -- an e-mail request has to come to him for any new changes, so I'm assuming that anybody within the company can get ahold of you through e-mails and (indiscernible) can track -- I'm not bulleting him with that.

BY MR. CHHATRE:

Q. I'm just -- initially the impression I got that if I'm not part of the operations and you're not here, then I have to go through the management or technical support, and what you're telling me, that is not the case.

A. That's not the case. However, I would generally -- if I had a request for a procedural change from outside the control center, I would generally refer that to someone in our technical

services area.

Q. That's fine, but that's your choice to evaluate, but they don't have to. Now, do they have to go through the supervision to make sure you don't get bombarded by 200 new requests which may or may not kind of muster, if you would; is there somewhat of check there or? They don't need their supervisor approval for sending you a request?

A. No, not for sending in a request.

Q. Okay. And what about the management? Either management, and I'm talking not talking about technical management; I'm talking about -- and I do not know what Enbridge considers management positions, but I guess all of these people, including you, I mean, post eventually to some person at a high level. Is the management being trained on what you guys are doing here? Are they familiar with the terms? I mean, if somebody says, "Well, I have a drainage," would somebody who is going to be responsible for that will know what the drainage means? Are you doing something for at least -- I'm using the term loosely as training but still it's a training. Is there a program for that or is it strictly limited to the operators?

A. If I understand correctly, we don't have a normal program for training senior management or people outside our immediate --

Q. I didn't really imply vice presidents and that kind of people. I'm just saying people who are not necessarily the

technical folks. To give an example, we just talked to Blaine before coming here, and he mentioned that he doesn't have technical background in pipeline, however, he's still making the decisions whether to do something or not, and is there some kind of a check or process? I mean I was literally surprised when he said he has no technical background in pipeline but he's still making the decisions. So how do you ensure that (indiscernible) will be able mandate --

A. We don't have a formal program for training the people like that.

Q. You can call it training. What do you call it? If it's not formal, then how do you enforce it?

A. I'm not sure that that's within my --

Q. Okay, so that is not part of your --

A. No.

Q. So where does your level stop in terms of training people? At what level it stops and anything beyond that is not your charter, per se?

A. Sure. So I have administrative responsibility for established programs.

Q. Like?

A. Like the operator and shift lead and engineering. I don't have any, I guess, direction to establish a program for others outside those two --

Q. So --

MR. JOHNSON: So Blaine --

MR. CHHATRE: And about --

MR. JOHNSON: -- and Kurt and Ian. If you -- two supervisors and the manager within this group, what is their background? Were they operators or --

BY MR. CHHATRE:

Q. No, I mean, I guess what I'm question, will they be part of your training responsibility or training them is beyond your responsibility?

A. It's not currently a responsibility.

Q. In your group. Okay. Now, then the follow-up question is, is there any procedure or program within Enbridge to train these people that you don't train, however still make the decision for the people who you train?

A. If I --

Q. If you don't know, you don't. That's a --

MR. JOHNSON: There's supervisory training and there's manager training.

MR. CHHATRE: Okay.

MR. JOHNSON: So within those groups, I think that would be, you know, and I'm speculating here, is where it would -- you know, if you need to make a decision, you need to get technical expertise to back you up.

BY MR. CHHATRE:

Q. Okay. So when the decisions are technical, not

managerial, there is no means for them to become familiar with the technical decisions they are making. I understand what you are saying. If it's a management decision, reorganizing, for example, to give a simple example, of moving people or whatever, promoting somebody, it's a management decision, but if it's a technical decision that -- whether it would exceed establish procedure or not and under what circumstances, I would imagine that you need to know what procedure you are breaking, and so is that a part of Enbridge somewhere? I mean, I'm not saying it's your responsibility, but do you know if there is a technician program for these people who are making technical decisions, however are not covered by your program to your knowledge?

A. Well, to my knowledge I'm not aware of --

Q. Okay, that's enough. That's fair.

Now, you said there's a stakeholder review of the process. Now, who picks the stakeholders? Are they already identified people that if the requests comes in this particular area then these are my four people, that are the same two that are randomly picked?

A. They're predetermined.

Q. Okay. Are they determined by you or are they recommended by their supervisors?

A. Those people are identified within the quality management system for procedures.

Q. They get people from your group?

A. From the department.

Q. Oh, from the department?

A. Yes.

Q. Okay. Now is there re-qualification for the people that you train, like leads, lead specialist, operator, shift, once you train them and they're working, then that's, they're deemed for training?

A. So there are different processes. One would be the operator qualification process for those individuals performing covered tasks. Every three years they re-qualify.

Q. So and then you train them at that time?

A. We do a performance evaluation and evaluate their qualifications.

Q. Okay, but there's no formal training at that time? It's just a review of the skills, not the formal training? It sounds like a continuing education type training.

A. There's annual emergency response training.

Q. Okay. That's mandatory?

A. Mandatory, yes. That's mandatory for shift leads and pipeline operators.

Q. Okay.

MR. JOHNSON: And the operator qualification program that Jim is referring to, which is a PHMSA rule, says every three years you need to check --

MR. CHHATRE: Well, yeah.

MR. JOHNSON: -- and verify the person's knowledge, skills, and abilities.

MR. CHHATRE: Sure. Yep.

MR. JOHNSON: So it's not just a review.

MR. CHHATRE: I understand.

MR. JOHNSON: They're becoming qualified again.

BY MR. CHHATRE:

Q. Correct. Okay. But it's a three year process. It's not like -- it's a review of something. Now what happens if you find out somebody is not getting up to snuff?

A. Then we would have --

Q. I'm not saying that is the case. I'm just saying, I'm just trying to understand the training process.

A. Sure. Really at any point during, if an employee is deemed unqualified.

Q. For the OQ criteria from PHMSA.

A. They would need to be suspended from the performance of covered tasks and individually.

Q. And then retrain?

A. And retrain, yeah.

Q. Okay. Now on your procedures, and I'm just speaking to one that I saw, and I'm definitely more familiar with nuclear than your procedures, but you got a revision number on it, when the first procedure will become effective, the duration that it will remain effective, and when, is there some kind of a documentation

that automatically, once you establish a procedure does it go through automatic review, that okay, my procedure is good from today and through three years, and then it must be reviewed again to get, is there some kind of a --

A. There's no predetermined duration for them to expire or anything like that. There is steps in the quality management system to do an annual procedure review each year. And so it's an annual thing.

Q. So it's a requirement? An annual review is required?

A. Yes.

Q. And that covers pretty much that.

BY MR. NICHOLSON:

Q. The training that these people have had, does that go on their internal learning history? Is that where your training ends up?

A. So the internal learning history, you may be referring to the title of a report that we generate from our management system, so that's one place where we can retrieve the records from current training.

Q. If I'm looking at best operating practices, advanced problem solving, static gradients, those are all your, you oversee that training?

A. That's correct.

Q. What is static gradients?

A. Static gradients is, there's a written training module

on the theory behind understanding the hydraulics of a non-flowing line, so the static refers to non-flowing and gradients refers to how we teach the material in terms of line head gradient elevation profile.

Q. So it is elevation profile?

A. Elevation profile is --

Q. It's head pressure on a line of different elevations?

A. Correct, yes.

Q. Is that a required class?

A. Static gradients is included in the terminal training program.

Q. Why not pipelines?

A. Pipeline operators have a little bit more stringent version of that training module. It includes calculation of static gradients.

Q. What is whole pipeline perspective?

A. Whole pipeline perspective is another written training module that describes an operational philosophy of looking at a whole pipeline rather than parts of a pipeline in isolation. So it introduces the topics that will be more fully described later in later modules in terms of what's happening on a whole pipeline; how one event can affect another and that sort of thing.

Q. And advanced problem solving?

A. Advanced problem solving can have a written module that goes through the thought process and decision making model around

some abnormal operating conditions.

Q. Are these all required though? Those that I mentioned?

A. They are.

Q. And how often are they required?

A. In the initial training program for pipeline operators.

Q. That's it?

A. Yeah. Those modules don't apply to terminal operations. Those are specific to pipelines.

Q. But there's no recertification of those? They don't have to take them yearly, is that what I'm hearing?

A. The concepts that are described in those modules are retrained and reevaluated, those skills are reevaluated in part of the annual emergency response training.

Q. They are? Annually?

A. Yeah.

BY MR. CHHATRE:

Q. Now, you said management approval required, once you go through your procedure of initially I guess your group kind of, once a request comes in your group will do the evaluation, then craft the procedure, then send it to the stakeholders for their comment, then come back, and then either accept, reject, whatever, and then prepare the procedure, and then who approves these procedures once -- did I describe the steps correctly as I understand it, or am I --

A. You know, I think it's pretty close, and when --

Q. No, tell me. Pretty close is not good enough.

A. Sure. So I wouldn't put it exactly that way. I will say the person initiating the change would do the initial draft of the procedure.

Q. Okay. All right. Then what happens?

A. Then an assessment within the --

Q. Your group makes the assessment?

A. And initial assessment -- does it apply using that procedure? Then it goes out for review to the --

Q. So do we keep -- reword it, change it before it goes, or just make a comment?

A. You know, before it's distributed it's formatted, I would call it. If there's nonstandard terminology, if we have a better standard in terminology --

Q. Okay, so they do that. Okay. But no substantial change in ordering a request?

A. No.

Q. Then it goes to peer review?

A. Yes.

Q. Go ahead, you tell me, what is the next step?

A. Sure. Then it goes to a predetermined list of reviewers.

Q. Okay.

A. Reviewers are invited to make comments in our online forum. Then the comments are reviewed and an approver --

Q. By your group?
A. No.
Q. So comments come back to you?
A. Comments are shared with everyone.
Q. Is it a continuously running document, so if you make a change everybody sees it, or if there was a suggestion, everybody in the review group sees that?
A. Right, as part of the list of comments. And then so my direct group isn't in approver of those changes.
Q. Right.
A. That responsibility is predetermined.
Q. So everybody makes comments. Then what happens?
A. Then the predetermined approver will again review the procedure, review all of the comments that were made.
Q. I'm assuming initially you have these reviewers that are reading the document now and making changes. Everybody's seeing that. Then what happens? Then who makes it, who accepts or reject these changes and prepares the pilot document?
A. So any changes that might accrue would have to be consolidated again by our procedure.
Q. So your staff does that?
A. Uh-huh.
Q. Okay. And then it's sent back again to the same people or different people?
A. The review continues.

Q. By the same people? Same group of people that initially went? Okay. And what stage something has to stop, so you say enough is enough and this is what it is going to be; I mean, everybody had comments. Where did the process stop?

A. Right. Depending on the type of procedure it is, there is a predetermined timeframe that we target. So for procedures in sections A, B, and C, it's 14 days. Now if for some reason it's taking longer and maybe there are more proposed changes, more suggestions, that sort of thing --

Q. Right.

A. -- it might take longer.

Q. Sure.

A. But when there seems to be a consensus and a consolidated procedure to approve, then the approver would step in and make their --

Q. Okay, who that authority is?

A. I'd have to double-check, but for section A it's control center management team. For --

Q. Management team meaning whole team has to approve it?

A. No, a representative from the team.

Q. Okay. But management team meaning which group?

A. Departmental management. So that would be the PML [sic], again, Blaine Reinholdt and Kurt Goeson group.

Q. Okay.

A. For sections B, C, it's a technical services leader that

has the approval responsibility. I would refer to --

Q. Okay, now are these the people who are authority, are they part of the review group initially?

A. Yes. So the, for a section, let's say a B procedure, the predetermined groups would each have a representative or more than one representative review and make comments. That may include CCO engineering, CCO training, CCO technical services, on-shift staff including shift leads and (indiscernible).

Q. And one of those people maybe have final approval either way. Okay. Now, does this go, once the team is approved, how do the people who are impacted know that a new change is coming? How would they get information today that there's a new procedure, the old procedure is revised or whatever the case may be, how will the people know?

A. There is a notification that occurs after the approval, and when the procedure is being moved into the production procedure.

Q. And who gives that?

A. The same, the stakeholders.

Q. The stakeholders.

A. Are the people that effect it.

Q. Does anybody in the management gives the notification that, hey, a new procedure has -- they may or may not even understand or know, but are they being told that something is happening upwards of you, that we are establishing new procedure

the procedure has been devised, something that -- they are kind of out of the loop?

A. They're in the loop.

Q. And how do they get notification that you have made some changes?

A. That would be in the same e-mail as the rest of the stakeholders.

Q. And up to what level of management it goes up?

A. For section A procedures it would go up to the manager of the control center operations. Section B and C procedures it would typically go to the supervisors of the department.

Q. Would it go up to Blaine Reinholdt or would it go beyond that or? I mean I'm not saying him personally but the level?

A. Right. So if Blaine Reinholdt leads the technical services group and he would be the approver for any procedure that --

Q. He would be an approver also?

A. Uh-huh.

Q. Okay. And so you are the one, I mean your group decides where the procedure is distributed because not all may be put (indiscernible). The final distribution list is decided by you, meaning your group, or?

A. No, it's predetermined and specified in the quality management system book.

Q. Okay.

A. So we can refer to that book.

Q. So you have no choice but to send it to everybody?

A. We have to at least send it everybody on our --

Q. Could you add people if you think --

A. Yeah.

Q. Okay. Now before you review the request of your own procedure going to any task or any area, do you need to know the duties of that particular position before you draft any procedure, or you don't need to know that particular job description's duties? See, in other words, if you felt that there's a possibility it affects operators, do you need to know what the Enbridge expects of a pipeline operator, what Enbridge expects of a terminal operator, what Enbridge expects of a lead, I guess lead operator or shift lead or whatever? Do you need to know all of these different titles' duties before you prepare a procedure or you don't?

A. Procedures as we use them contain work instructions for shift leads and particularly operators.

Q. Right, so.

A. So if a proposal is made that will include work instructions for those people, it would be most effective to understand what those people's existing work --

Q. Current tasks are. Okay.

A. So as part of the quality management system, we suggest that if a non-operator is proposing a change that they consult

with subject matter experts initially to double-check that it's --

Q. No, I'm just saying you have to, let's just say we are preparing a procedure for the pipeline operators, for lack of a better example.

A. Yep.

Q. And this is from scratch. Nobody's suggesting that you should have procedure. You group felt that, "Jee, you know, we need a procedure for these people follow," do you need their job descriptions and what is expected of them, or you define that? How does that thing get in? I mean you could, do you see what I'm saying?

A. Uh-huh.

Q. And do you need that or you don't need that?

A. One needs at least an understanding of what the role of a pipeline operator is.

BY MR. NICHOLSON:

Q. I want to clarify something, though. You don't write the procedures, right? They are proposed and given to you, right? Is that correct?

A. That's the general idea is that anyone can propose a procedure and write a draft proposal.

Q. Right.

A. I could, just like anyone else in the department --

Q. Sure.

A. -- could suggest a proposal and put it in the system,

but that's not --

Q. That's not really your role. Your role is to route it, I guess?

A. Yes. Get administrative --

Q. All right. I just wanted to clarify that.

BY MR. CHHATRE:

Q. Yeah, that, because who writes the procedures for differently than operators do, and when do they become effective? Or these procedures already existed in the company.

A. Right. So procedures have existed for many years for control center operators and it's a constant process of --

Q. Okay. So, now I want to go back to the mass balance specialist. Is that the correct title?

A. Analyst.

Q. Mass balance analyst. Are they covered by your procedures? Will those be the people that will impact (indiscernible) the distribution list of various procedures that you write?

A. Not generally, no. Since we shouldn't include work instructions for MBS analysts for example.

Q. Okay.

A. And the control center procedure.

Q. But you write the procedure for operator, you are telling them that if there is a mass balance alarm, that they have to contact two minute or what it is, five minute alarm, they will

tell the supervisor and/or the analyst. If it's ten minutes, they'll tell the supervisor. If it's two hours, they have to contact the analyst. That is what the, if I understand the procedures, one of the procedures here in control room is five minute, is it five minute, twenty minute, and two hour I think? Whatever.

MR. NICHOLSON: The shift lead is to notify the mass balance analyst, right?

MR. JOHNSTON: That's the way the procedure is written.

BY MR. CHHATRE:

Q. But the operator contact is at two hours, they are required to inform the analyst also directly. In other cases they're made from analyst. They may not have to, but they have been from the shift lead. So if you do not know what the analyst is doing for these people, why put that requirement in there?

A. So to include the work instruction to notify or for the shift leads to notify, for a notification to the MBS analyst.

Q. I understand.

A. The MBS analysts have their process, procedure they follow, to the best of my knowledge, to do the support technical analysis of the alarm that you're going to find.

Q. So when you ask the lead people to contact the analyst, if you do not know what the analyst is going to do for them, then why would you put that in your procedures? You said you do not, analysts you don't cover.

A. Right.

Q. Other job descriptions you know and the procedure is kind of -- but if this group who call them, I want to change the word I use in (indiscernible) and you don't write as much, and corners them, why would you put some requirement in the leads and operators' operating procedure or whatever to contact the analyst if you do not know what the analyst is going to do for them?

A. So the basis of your question is correct, the control center procedures don't specify work instructions for the analysts to do. We just specify the work instructions for the control center operations on-shift staff to do. Not, yeah, a notification to initiate the MBS analysis process.

Q. I mean, you're telling me the same thing. I still have a disconnect.

A. Uh-huh.

Q. If I was required to do something by procedure which is developed by some group, we need (indiscernible), but that group said that we don't know what analysts do or what their tasks are because they belong to somebody else, then why would you ask me to contact analyst if you do not know and I do not exactly know, I mean, I have hearsay, I don't have exact procedure.

A. Right.

Q. What is the advantage in doing that?

A. Control center procedures specify work instructions, steps to execute based on the outcome of the MBS analysts'

process. For example, if the process is taking longer than ten minutes, control center work instruction is to shut down.

Q. Right. But, I have no problem in the procedure that's control center operators report to the lead or what they do. My question, and I'm still kind of feeling the disconnect as to the procedure of what I understand, and if I'm incorrect then correct me, but I think they are required a two hour mass balance alarm, that they're required to report it to the analyst and following 20 minute, the lead is supposed to inform the analyst, but what you're telling me, you guys do not know what analysts can do for these people? There's no description of what analysts are supposed to do for these people in your, in control room procedure. So how would I know as an operator what to expect from this analyst and why I am doing this, or the lead for that matter?

A. Right, so I guess the way to describe the procedure is, and my understanding of the way it's written --

Q. Okay.

A. It's regardless -- will we be able to pull it up?

MR. NICHOLSON: Yeah.

MR. JOHNSTON: I've got it right here.

Yeah, that'd be great.

MR. NICHOLSON: Let's not even speculate.

MR. JOHNSON: Can we take five minutes here if we could go off of reporting for five minutes?

MR. NICHOLSON: Sure.

MR. JOHNSON: I have a request for Matt.

MR. NICHOLSON: Okay, let's take a five minute break.

(Off the record.)

(On the record.)

MR. NICHOLSON: Back on the record.

MR. CHHATRE: Back on the record.

MR. NICHOLSON: With Jim Johnston.

BY MR. CHHATRE:

Q. One, let me get the question from me is didn't you send somebody for mentoring, you mentioned mentoring different parts that you guys do, how do the mentor knows that somebody's being sent to him or her for training? Is there an official notification that goes from you or somebody from your department to the mentor, the lead, both?

A. Right. There's a couple of different circumstances that could apply. For the entry level operating positions, which is a long training program, I think six to nine months, somewhere in there.

Q. Oh, that long?

A. And if we dedicate a mentor to fill that role --

MR. NICHOLSON: I want to break in for a second because where we left off we were going to get into that MBS procedure.

MR. CHHATRE: Right. Right. Okay.

MR. NICHOLSON: So can I redirect us back there?

MR. CHHATRE: We can go back. Yep, sure. Makes sense.

MR. NICHOLSON: I've got notes to cover what we were talking about.

MR. CHHATRE: Go ahead and do it. Go ahead and do it. Yeah.

MR. NICHOLSON: So.

MR. JOHNSTON: Did I give you the procedure already or --

MR. NICHOLSON: You were going to pull it up I think.

MR. CHHATRE: With that break I completely lost track.

MR. NICHOLSON: I know. I just didn't want -- I wanted to try and finish this thought here.

MR. JOHNSTON: It may have turned itself off.

MR. CHHATRE: What does PADD stand for? What does PADD stand for?

MR. JOHNSON: We were talking about that yesterday. I don't remember what it stands for. It's a government term, but I don't know.

MR. CHHATRE: It looks like it's only applicable in the United States and not in Canada.

MR. JOHNSON: It's an energy department or defense department terminology.

MR. CHHATRE: Okay.

BY MR. NICHOLSON:

Q. Okay, so we'll open up the -- so Jim has brought up on the big screen for us, what are we looking at, Lotus Notes?

A. That is correct. Lotus Notes procedure database.

Q. And this is what the operators, shift leads, everyone has access to?

A. That's correct.

Q. Okay. Looks just like this with the tabs at the top. It looks like two tabs. One says ECC procedures, table of contents. The other is emergency procedures. That's it?

A. Right. So this tab, the table of contents can be still open while individual documents are accessed.

MR. NICHOLSON: Oh, okay.

MR. CHHATRE: Great.

MR. JOHNSTON: So here we're looking at MBS leak alarm, and Ravi, you were questioning notification to the MBS analysts?

MR. CHHATRE: Correct.

MR. JOHNSTON: What was your line of questioning on that?

BY MR. CHHATRE:

Q. The questioning was the five minute mass balance, 20 minute, the operator has to report it to his lead and may or may not report directly to the mass balance specialist. At least that is what the operators told us. However, two hour alarm he must report to the mass balance analyst, and that doesn't mean that he should not report to the lead, but that is an expectation from your operator; their two hour lead alarm he or she has to report to the specialist, is that correct?

A. Okay, so if any alarm occurs the pipeline operator notifies the shift lead.

Q. Okay.

A. Okay. The shift lead assesses the alarm.

Q. Uh-huh.

A. If the alarm is a two-hour alarm and there was no previous five or 20 minute alarm, they would go right to notifying the, or executing the analysis by MBS report procedure. Or, if from their analysis tool a condition occurs, in this case a green line drops below a red line in the one assessment screen --

MR. NICHOLSON: What is that box around that alarm assessment screen? That's a link?

MR. JOHNSTON: That has additional pop-up text.

MR. NICHOLSON: Okay. Oh, that's all that means? Okay.

MR. JOHNSTON: Or if there's doubt about the reliability of the model, then the analysis by MBS support is required. Now if these conditions don't occur, in other words from the alarm assessment screen if it appears that the alarm condition is temporary, it's going to clear by itself, then we don't go to the MBS support procedure. We go to the temporary alarm procedure, and these are links to those procedures.

BY MR. CHHATRE:

Q. Now, what are, these green lines, they are five minute or twenty minute alarm. Green is on another level?

A. So shift leads have an assessment screen where they can

basically check a trend, an imbalance type of a trend as I understand it, and it's set up for them to based on this condition, green line/red line, proceed either to further analysis or --

Q. What does the green line mean and what does the red line means?

MR. NICHOLSON: Aren't you really describing a five minute MBS alarm there when you write the green line on the alarm assessment screen remains below the red alarm line for five minutes, isn't that the same as a five minute MBS alarm?

MR. JOHNSTON: Okay, so I think of the red alarm line as a threshold and the green line as the imbalance or the current condition.

MR. NICHOLSON: Okay.

MR. JOHNSTON: Now, if the green line is below the alarm threshold for more than, for five minutes, I believe the theory behind that is to execute is to notify support so there's still time left to do additional assessment within ten minutes.

MR. CHHATRE: So there's the five minute alarm and 20 minute alarm essentially, and we are defining what a five minute alarm is and what a 15 alarm is. So then possibly we need to know what red line and green line means, but besides that it's still essentially you're identifying the different alarms in here, am I correct? Is that what we're on again, Matt?

MR. NICHOLSON: Yeah, that's what I was trying to say.

I mean, they've just kind of elongated five minute mass balance alarm.

MR. JOHNSTON: Right. Yeah, so the first bullet refers to the type of alarm, the five minute -- it refers to the type of the alarm, five minute, twenty minute, or two hour.

MR. CHHATRE: Right. Right.

MR. JOHNSTON: The second bullet refers to a time limit that the shift lead is going to use before notifying the MBS support.

MR. NICHOLSON: You lost me. Can you put the cursor over the five minute box for a second?

MR. JOHNSTON: Sure.

MR. NICHOLSON: Oh, after the initial MBS alarm. Oh, okay, so this is different.

MR. CHHATRE: Well actually it is a five minute alarm.

MR. NICHOLSON: So you're saying after you get the five minute mass balance alarm you wait an additional five minutes?

MR. JOHNSTON: So this first sentence refers to any alarm, five minute, twenty minute, or two hours.

MR. NICHOLSON: Okay.

MS. BUTLER: Matt, can you explain to me what procedure you're reviewing?

MR. NICHOLSON: We're looking at the MBS leak alarm procedure.

MS. BUTLER: Okay, thank you.

MR. JOHNSTON: She should have a copy, right?

MR. NICHOLSON: Okay.

MR. CHHATRE: You said execute MBS alarm analysis by MBS support procedure. What does that mean?

MR. JOHNSTON: Sure.

MR. CHHATRE: Can you put it --

MR. JOHNSTON: Sure. Stop it. So if after ten minutes an analysis of the alarm is not complete, so we're 20 minutes into it at that point.

MR. NICHOLSON: Did I get that first page correct? You could have a five minute mass balance alarm and then the shift lead can wait an additional five minutes for that to clear. Is that how --

MR. JOHNSTON: So the alarm is activated, and that alarm text might say five minute, twenty minute, or two hours.

MR. NICHOLSON: Right.

MR. JOHNSTON: From the previous procedure the shift lead may be looking at his tool for five minutes, up to five minutes watching the trend.

MR. NICHOLSON: Right.

MR. JOHNSTON: So he's, you've got doing this initial five minute.

MR. NICHOLSON: All right, so if it's a five minute alarm, then he's waiting another five minutes.

MR. CHHATRE: No, he -- the alarm came in with a text

that said this is a five minute alarm. So you have that time zero and the lead is watching you for five minutes.

MR. NICHOLSON: It depends on which side of that alarm you're looking because it took five minutes for that alarm to come in, right? It's totalizing for five minutes.

MR. JOHNSTON: Right. So we're --

MR. NICHOLSON: That's five minutes after the alarm came in.

MR. JOHNSTON: Yeah, we're not attempting to set a timer from an actual sort of beacon or imbalanced set. It's from the time of the alarm.

MR. NICHOLSON: Got you. So Ravi, I think it's the last two bullets that you were interested in, where the MBS support has to advise if the alarm is valid --

MR. CHHATRE: Oh, yes. But that is your procedure where it is not binding on the analyst. The analysts are claiming they're not going to classify it for someone. They're only going to tell if the model is working or not working. The two procedures are not jiving. Your staff is expecting something from analyst, and analyst is saying, "Well, our procedure is different. All we are going to do for you is just tell you if my monitor working, my monitor not working."

MR. JOHNSTON: I think I see --

MR. CHHATRE: Did I answer that correctly?

MR. NICHOLSON: No, I'm not --

MR. JOHNSON: Yes, but you know, so well, what's Ravi's asking is what we've heard here recently, and I believe that's been changed since, you know, what the MBS, since Marshall.

MR. NICHOLSON: The 25th.

MR. JOHNSON: I don't know that this has been changed to reflect that. I think that's probably your process between the MBS staff and the control center staff, Jim, where they're only allowed to give you X amount of information.

MR. NICHOLSON: So pre-Marshall, this would have been binding --

MR. JOHNSON: I think, well Jim can go into the modification history and tell you if this was, you know, pre-Marshall or if it's been changed.

MR. CHHATRE: Well, and I can, I don't know about Matt, but I'm considered mainly in pre-Marshall because that was the condition that the operators are expecting. So we don't worry right now with the changes --

MR. JOHNSON: What's the latest modification say -- what vintage is this, Jim?

MR. JOHNSTON: I can double-check this for you, but this is the procedure at the time of Marshall.

MR. CHHATRE: Great. And that's what --

MR. JOHNSON: Okay, perfect. Thanks, Jim.

MR. NICHOLSON: So Jim, just one second. You don't write the procedures for the MBS personnel, right?

MR. JOHNSTON: No.
MR. NICHOLSON: Who does?
MR. JOHNSTON: I'm not sure exactly who does that.
MR. NICHOLSON: Do they have procedures?
MR. JOHNSTON: I believe they do.
MR. NICHOLSON: Is this considered a procedure?
MR. JOHNSON: And would that be under Lorna's area?
MR. JOHNSTON: Yes.
MR. NICHOLSON: Can you spell Lorna?
MR. JOHNSON: Lorna, L-o-r-n-a Harron, H-a-r-r-o-n.
MR. NICHOLSON: Okay.
MR. JOHNSON: She's the manager of MBS.
MR. NICHOLSON: And this is what their procedure would be more of a flow chart, is that -- is this what they would call their procedure?
MR. JOHNSTON: That's the document that I've seen.
MR. CHHATRE: So your stakeholders, these people are not part of your stakeholders where the procedure goes for review?
MR. JOHNSTON: Not a standard part, no.
MR. NICHOLSON: But would they look at your procedure when they're writing their procedure so that the language is consistent? So when you get to a certain part of this flow chart the MBS analyst is using language that's consistent here, valid or temporary? Or is there really a disconnect?
MR. CHHATRE: I have for you one step before, are you a

part of approval or just like the other stakeholders group and they are not part of yours, are you part of their stakeholders group and they advise their procedures to you, would you be able to comment on it before anything goes into final format?

MR. JOHNSTON: Myself as an individual in my --

MR. CHHATRE: You're the training on the control room center, right? So anybody in the control center is, if not you, anybody who you designate, are they a part of their stakeholder review process and approval process of their procedures?

MR. JOHNSON: So do we have a voice or does CCO have a voice in the MBS procedures and vice versa ?

MR. CHHATRE: And vice versa. Vice versa, exactly.

MR. JOHNSTON: So yeah, the MBS isn't a standard stakeholder in our process.

BY MR. CHHATRE:

Q. And neither are you on --

A. Not that I'm aware of.

Q. Okay. So it's totally separate entities essentially? Not even closely at all.

A. Yeah, the entities meet on a regular basis, people from each group, and they hold regular --

Q. Now my curiosity is perked. I wasn't even going to go that far, but so what do you guys discuss in the meeting?

A. Okay, so myself I --

Q. No, I mean I think you have regular meetings.

A. Uh-huh.

Q. So what is discussed in the meetings?

MR. NICHOLSON: What are the topics?

MR. CHHATRE: Do minutes come out or --

MR. JOHNSON: To me that would be an IR and I'll put that down as minutes from those meetings. Matt, is that something you'd want?

MR. CHHATRE: I don't know --

MR. NICHOLSON: We don't need minutes. I think we just want to get a general idea.

MR. CHHATRE: Yeah, that's all.

MR. JOHNSON: Yeah, Jim's not one of those in the meetings.

MR. NICHOLSON: That's fine.

MR. JOHNSTON: -- don't got to that meeting.

MR. JOHNSON: Okay.

BY MR. NICHOLSON:

Q. But I can see here from their procedure that they're supposed to communicate back to the CCO that the model is indicating column separation and then it tells them to tell the CCO it's not reliable because there's two phase, and then it says tell the CCO they can start up but it's up to them. So I didn't, you know, there's nothing in this procedure I see that matches, you know, tell them it's valid or invalid. Are you familiar with this?

A. I've read it.
Q. Okay.
A. Yeah.
Q. Am I correct or am I missing another part that --
A. Yeah, I don't see a real good connection either.
Q. Okay. All right, well then that finally explains it.
MR. JOHNSON: Great, okay, yeah.
MR. NICHOLSON: Because we've asked the operators when they hear columns set back from the MBS is that valid or invalid, and we always kind of get a --
MR. JOHNSTON: I'm --
MR. NICHOLSON: Okay.
MR. CHHATRE: I'm good on this one. Go to the next one.
MR. NICHOLSON: So I think they took call-sep in this case to be a temporary alarm. Is that what you want him to click on?
MR. CHHATRE: Right. I want to find out really, because I think there's a phone conversation I think the specialist is claiming it to be a false alarm, is he not?
MR. JOHNSON: So that's where you want him to click on right there, Ravi?
MR. CHHATRE: Yeah.
MR. JOHNSON: Okay. So right now, Karen, what they're pulling up is the MBS leak alarm/temporary alarm.
MS. BUTLER: That procedure?

MR. JOHNSON: Yes. And while they're reading I'll read it because my voice carries. It says, "If the shift leader or MBS support determines that an MBS alarm is temporary, the pipeline operator, one, continue normal operations," with two bullet points, "No pipeline shutdown is required," or, "If pipeline was shutdown, resume normal operations."

MR. CHHATRE: Can you clear that up on normal operations rebooting requirement?

MR. JOHNSON: Sure.

MR. CHHATRE: Define abnormal operations. We went back to the schedule.

MR. JOHNSTON: I think that link isn't going to where --

MR. NICHOLSON: No, I've seen that. It's its own thing, but your link's not working.

MR. JOHNSTON: I can go there if, let's see. Okay, here we go.

MR. JOHNSON: And now, Karen, we've went to the tab where if that happened it would take you to abnormal operating condition reporting requirements, and that's the procedure. And it's for after responding to an abnormal operating condition, which the MBS alarm or MBS alarm temporary would have been.

MR. NICHOLSON: It's just, there's no requirement to do this on a false alarm. It just says related topics. Is that correct?

MR. JOHNSON: I would say --

MR. NICHOLSON: There's no requirement from the previous procedure to do this.

MR. JOHNSTON: Right, that's additional information kind of thing.

MR. NICHOLSON: Okay.

MR. CHHATRE: Okay. Can you come down? It looks like there are more topics now.

MR. JOHNSON: Were you interested in all of the topics?

MR. CHHATRE: No, I just -- that's all right. I'm good. Matt has everything.

MR. NICHOLSON: So you've got modification history here. That's how we could tell if this was pre-Marshall or --

MR. JOHNSTON: Yeah, I would, we have an actual modification log that I think would be the best place to look.

MR. CHHATRE: So this modification history will actually even tell when this procedure went into effect initially, right?

MR. JOHNSTON: Yeah, I would consider the modification log the best source. Rather than looking at sort of this field in this procedure, I would --

MR. NICHOLSON: That's a log you keep?

MR. JOHNSTON: Yeah, it's actually --

MR. CHHATRE: Can we go into, I'm just curious to find out what the modifications looks like; how often it's modified.

MR. JOHNSTON: It doesn't actually have that. It says --

MR. CHHATRE: Who did the last modification? Last time late 2006. The procedure has been --

MR. NICHOLSON: All you did in 2006 was added a link?

MR. JOHNSTON: Yeah, so I would, for changes, for each change I would tend to use the modification log instead.

MR. NICHOLSON: Okay.

MR. JOHNSTON: If you wanted to dig in.

MR. CHHATRE: These are histories, but the log is --

MR. JOHNSTON: Right. So --

MR. NICHOLSON: That's fine. Okay.

MR. CHHATRE: What is next for you, Matt?

MR. NICHOLSON: Well, that was one of them, but if you're done I've got some other questions.

MR. CHHATRE: I want to look at that, the 5 minute, 10 minutes, 20 minutes, I still wanted to dwell into that. I want to find out what that says because I think your point is well taken; are we really watching it for five minutes and then he would want it -- the alarm doesn't come for five minutes and he's watching for five minutes, and what we heard in the interview is not jiving with the procedure. That's why I wanted to go back to that because --

MR. NICHOLSON: Well, I think our takeaway from these interviews was that, and maybe Jim can talk to us a little bit, but first off one of my takeaways was a lot of people don't seem to know these procedures at all. Maybe that speaks to training a

little bit, but you know, they go, "Well, I think there's a procedure for that," or, you know, they can't name the procedure and maybe that's because of the way this is structured because it is so modular because there's so many sub-menus it's just hard to actually attribute an action to one particular procedure.

MR. JOHNSTON: Right, having the modular does result in more titles not procedures. So without having the table of contents in front of you it may be hard to remember.

MR. NICHOLSON: Well, let me ask it this way, because also what I heard is it's not really up to the operator to know the procedures as much as it's really up to the shift leads to be the ones to interpret procedures, is that how the control center is structured at all or not? Is that a wrong statement? The shift leads are to really know the procedures and the operators are supposed to rely on them for the execution?

MR. JOHNSTON: So the control center operators need to be able to find and access and understand and execute all of the procedures that have work instructions for them.

MR. CHHATRE: And do you have access, a terminal for this?

MR. NICHOLSON: They've got this.

MR. JOHNSTON: So if there's a work instruction intended for the pipeline operator, our expectation is that they will understand what to do and be able to follow the procedure and execute.

MR. CHHATRE: Can you go back on the screen, go back one step? No, go back one more.

MR. NICHOLSON: Oh, sorry.

MR. CHHATRE: I want to go back to the operator. Here we go. Okay. This is leak detection alarm, and I'm going to fix in on that. What does that mean? Is there a special thing that comes on the screen that says leak detection?

MR. JOHNSTON: It's a specific alarm that comes through the SCADA system in a similar fashion as other alarms.

MR. CHHATRE: Okay. It's quality protection?

MR. JOHNSTON: I believe it says MBS leak alarm, something to that effect.

MR. NICHOLSON: These are your 5 minute, 20 minute, 2 hour MBS alarms. Those are correct?

MR. JOHNSTON: Yep.

MR. NICHOLSON: Okay, so it's not --

MR. JOHNSTON: I thought when I saw these I --

MR. NICHOLSON: Okay.

MR. CHHATRE: So pipeline operator only needs to know from this procedure that he has to notify shift lead and he has to recall AOC and Facman. That's all he/she needs to know, correct?

MR. JOHNSTON: Yeah, that's the initial step.

MR. CHHATRE: That's all he needs to know.

MR. JOHNSON: No. That's what he's going to do and then the shift lead, and then the blue, is that not the things that the

shift lead and/or operator would do, Jim?

MR. JOHNSTON: Yes.

MR. NICHOLSON: And/or operator? I thought it was for the shift lead.

MR. CHHATRE: These are shift, I mean the titles say shift lead.

MR. JOHNSON: Is that -- okay. So then maybe it's my mistake.

MR. JOHNSTON: So it'd be the shift lead doing the --

MR. JOHNSON: The who?

MR. JOHNSTON: -- alarm assessment screen.

MR. JOHNSON: Oh, okay. My mistake. Sorry, Ravi.

MR. CHHATRE: So the operators in essence have created this, they need to know, and the lead needs to know in detail.

MR. JOHNSON: So what we're looking at, Karen, under MBS leak alarm, if a leak detection alarm occurs, the pipeline operator is to notify his shift lead and record the AOC and Facman, and then the shift lead is to assess the alarm and then his steps below say, if any of the following conditions occur, a two hour alarm is received by itself and not in conjunction with the twenty minute alarm, the green light on the alarm assessment screen remains below the red alarm for five minutes, and each one of the alarm screen and the five minute are boxed in, which would take them additional spots. The green line drops below the red line again any time within 20 minutes of the initial alarm or, and

finally there is any doubt about the reliability of the model, and then below that is execute the MBS alarm analysis by MBS support.

MS. BUTLER: So basically right now what we've got is a procedure that requires that entire assessment to be done by the shift leads?

MR. CHHATRE: That is my understanding of this procedure as it is displayed.

MR. JOHNSON: That is correct, is it not Jim?

MR. JOHNSTON: Yep. I would call that an initial assessment.

MR. NICHOLSON: But in reality what they're doing, from what I heard in the interviews is the shift lead gets a call and he immediately calls the MBS analyst. I've never heard anyone talk about any of the assessment. It sounds like they just hand it off to the MBS analyst, right?

MR. JOHNSTON: It assesses --

MR. CHHATRE: Let's get back to his screen because --

MR. NICHOLSON: And in fact, I don't even think, is a shift lead qualified to determine the reliability of the log?

MR. CHHATRE: That is exactly, that's what I was really coming to.

MR. JOHNSON: Well, I think, that last bullet point, if there is any doubt about the reliability of the model, his method of finding that out would be from the MBS analyst.

MS. BUTLER: All right, the MBS analyst has clearly

started on the record that their position as to indicate whether it's a valid model or not.

MR. JOHNSON: So I think you're correct in that the shift lead is going to go to the MBS person? And they would do this together?

MS. BUTLER: And furthermore, I'm really a little bit concerned about how they're supposed to do that if they're not reviewing the alarm queue.

MR. JOHNSON: Who is they, Karen? I'm sorry.

MS. BUTLER: Shift leads as they indicated today; that they don't really review the alarm queue, and so how would they ever know an MBS alarm comes in until they receive the call, right?

MR. JOHNSON: Well, I mean that's the first thing that the pipeline operator does is notify shift lead, so they wouldn't have to review them. The shift lead or the operators told them --

MS. BUTLER: Well, but how would they know, okay, aren't those other things like kind of contingent upon whether we're talking about a five minute, a twenty minute, or a two hour one?

MR. JOHNSON: It's telling the shift lead, number one, assess the alarm, and then tells him the steps below that of how to assesses that.

MS. BUTLER: Okay, but only from one screen, right?

MR. CHHATRE: No, it doesn't say anything about screen.

MS. BUTLER: Well, doesn't it say a red/green thing?

MR. NICHOLSON: Yeah.
MR. CHHATRE: Right.
MS. BUTLER: So aren't they looking only at one thing?
MR. NICHOLSON: Yes.
MR. CHHATRE: Yes, they are.
MS. BUTLER: Okay, so if an MBS alarm clears, the shift lead doesn't have to call, or the operator doesn't have to call them, right?
MR. JOHNSTON: Right.
MR. CHHATRE: No, but that --
MS. BUTLER: So --
MR. CHHATRE: But according to the procedure, that is not operator's task to monitor for five minutes.
MR. NICHOLSON: No, she said if it clears then the pipeline operator never has to notify a shift leader.
MS. BUTLER: Okay, so if it clears --
MR. CHHATRE: But that doesn't --
MS. BUTLER: -- is that red, because I'm not sure what you're looking at, so you've got to forgive me, but I'm trying to understand the process, is that red and green element going to change if the MBS alarm clears?
MR. JOHNSTON: Yes.
MR. CHHATRE: It is not up to the operator to wait for five minutes. The procedure says anytime he gets an alarm, operator has to inform lead immediately pretty much.

MS. BUTLER: Right, which they've been doing.

MR. CHHATRE: Well, no, I think the operator, if I have the interview correctly, I think they are watching it and then it clears itself so he didn't notify anybody. Is that --

MR. NICHOLSON: Yeah, the operator notifies the shift leads --

MS. BUTLER: And the operator has consistently in the interviews notified the shift leads.

MR. CHHATRE: Okay, so the lead is the one who --

MR. NICHOLSON: And the MBS. I mean, if anything they're jumping straight to item one down here.

MR. CHHATRE: Yep.

MR. NICHOLSON: It just seems like everyone defaults to this.

MR. CHHATRE: This one, yeah.

MR. NICHOLSON: Just to be safe.

MS. BUTLER: Okay, so in the event, so talk to me a minute. In the event that an alarm clears, they would have initially made the call, so the shift lead's supposed to be figuring these things out, and when the alarm clears, the display that you're looking at with the red/green line, it would clear, is that correct?

MR. JOHNSON: Maybe, and Jim jump in here, as I read it here when it talks about those four bullet points, Karen, where he would look at these various things, and if that does happen, you

would execute the MBS alarm. If none of these above conditions occur, then you execute the MBS alarm temporary, and I believe that would be when it goes away. Is that --

MR. CHHATRE: Yeah, it tells you to proceed as usual..

MR. JOHNSON: Yeah. Does that help, Karen?

MS. BUTLER: Yeah, it does.

MR. JOHNSON: Okay.

MS. BUTLER: I just hadn't got that far yet.

MR. JOHNSON: And well, and I didn't either, so I apologize.

MS. BUTLER: You don't have to. Sorry about that.

MR. JOHNSON: No, actually your question, it worked right into it, so I think it cleared it up now.

MR. CHHATRE: So the control room people clearly defines mass balance leak as a leak unless these things happen, right?

MR. JOHNSTON: Say that again?

MR. CHHATRE: Mass balance leaks to the control room folks as the procedure is written says leak has occurred.

MR. JOHNSON: Yes.

MR. CHHATRE: If a leak detection alarm occurs. So they're calling it a leak detection alarm pretty much. So unless these things happen, the leak is supposed to have occurred. I mean these steps are to eliminate that leak did not occur. I guess what I'm going back to is, a leak is presumed to have occurred when you get this thing, but what I understood up to this

point was it's a mass balance alarm and not a leak alarm, where your procedure clearly says it is a leak alarm. So leak --

MS. BUTLER: No, I think what's going on with that confusion just to interject and maybe we want to take this off the record for just a second, Matt.

MR. NICHOLSON: Why?

MS. BUTLER: Okay, what I think is being misunderstood is the fact that the leak detection system that they're talking about isn't so much that they're saying the MBS isn't a leak detection system. They're just saying it's one of several leak detection tools.

MR. CHHATRE: No, Karen, we are not looking at the same screen maybe.

MR. NICHOLSON: I think Karen is accurate. I think that was stated that they use it --

MR. CHHATRE: I understand.

MR. NICHOLSON: -- as another trigger.

MR. CHHATRE: But what I'm saying is, according to procedure it is not one of the, it is -- any time you get a mass balance --

MR. NICHOLSON: Yes.

MR. CHHATRE: -- leak is supposed to be presumed. You can look at other factors and eliminate that or whatever, but when this alarm comes, by default everybody has to treat this as a leak unless you do these things, and the leak is ruled out.

MR. NICHOLSON: Yeah, I was picking up on that too in the interviews. People hesitated to call this a leak detection log.

MR. CHHATRE: Yeah, they're all calling it a mass balance --

MR. NICHOLSON: But your procedure clearly calls it a leak detection alarm.

MR. CHHATRE: So the big disconnect is what I'm seeing here.

MS. BUTLER: All right, I think it was because it all started --

MR. NICHOLSON: Is this a holdover from --

MS. BUTLER: -- with Jim when he was talking to us about the MBS system, and he's the one that wanted the distinction, but the reason that he wanted the distinction, I'm positive, is because there is more than one type of leak detection tool.

MR. CHHATRE: Well, I'm not disputing that at all.

MR. JOHNSON: Actually, you know --

MS. BUTLER: Okay.

MR. JOHNSON: Everything would go away if it said MBS leak trigger, but right now it does say MBS leak alarm, and you have to rule out the fact that it's not a leak.

MR. CHHATRE: It is not by default -- it existed at Marshall incident it very clearly says.

MR. JOHNSON: It does say that.

MR. CHHATRE: It does say that.

MS. BUTLER: And what was the last bit? It does say what?

MR. CHHATRE: In the procedure, very top, it says MBS leak alarm, right underneath that before any bullet, it says if a leak detection alarm occurs, then you're following steps.

MS. BUTLER: Okay.

MR. CHHATRE: And the very last step is, if anyone of these things happen and alarm clears, then and then only you can go back to normal operation. Until that point you cannot go back to normal operation according to this procedure.

MS. BUTLER: All right, is the note about the temporary procedure ahead of the normal operations statement?

MR. JOHNSON: No.

MR. CHHATRE: No.

MR. JOHNSON: The first thing they ask you to do is rule out the MBS leak alarm.

MS. BUTLER: Okay.

MR. JOHNSON: And then it tells you what to do if you haven't.

MS. BUTLER: Okay.

MR. JOHNSON: And then it tells you if none of the conditions occur, execute the temporary alarm.

MR. CHHATRE: Essentially what it's telling the operator to go back and resume the operation as normal.

MR. JOHNSON: Yes. Don't shut down if he's running, and if you've shut down, you can resume operations.

MR. NICHOLSON: I mean it is, but it is incomplete if it's going to say leak detection alarm and it's truly presuming a leak.

MR. CHHATRE: (indiscernible).

MR. NICHOLSON: And fails to have anyone go look at the other leak triggers, and it doesn't give you a link --

MR. CHHATRE: I can get the point I'm saying. I mean, I --

MR. NICHOLSON: -- to another leak trigger document --

MR. CHHATRE: I guess what I'm hitting at is when it so clearly tells the operators, then they should be looking, if not anything, looking at the other triggers for leak if not for these.

MR. NICHOLSON: It doesn't say that though.

MR. CHHATRE: No, I'm not saying. Once they tell, see, they are to eliminate now that there is no leak before they can do anything.

MS. BUTLER: So is there anything in that procedure at all that says anything about the MBS system and the column sep.?

MR. CHHATRE: What? Say that again?

MS. BUTLER: Is there anything in that element or in that procedure at all that mentions if this in conjunction with the column separation?

MR. NICHOLSON: Not that I see.

MR. CHHATRE: I haven't seen anything yet, but I haven't seen all of these dropdown boxes either.

MS. BUTLER: Okay, thanks.

MR. NICHOLSON: Do you have a procedure for col. sep.?

MR. JOHNSTON: Yes, we do.

MR. NICHOLSON: One that was in existence prior to July 25th?

MR. JOHNSTON: Yes, we do. Yes.

MR. NICHOLSON: Okay. I'd like to see that. Because I actually didn't get a copy of that as far as I'm concerned.

When was this issued? Can you go to the modification history?

MR. JOHNSON: I think what Jim was saying is the best --

MR. NICHOLSON: No, I understand that.

MR. JOHNSON: Is probably the best way --

MR. NICHOLSON: I just wanted a quick peek at when it was created.

MR. JOHNSON: Oh, okay.

MR. NICHOLSON: I assume that created date is still accurate?

MR. JOHNSTON: I'm not sure I would go by that because it says the last update was earlier than the created at date. I can tell you that, you know, this procedure has been in existence in close to this form for many, many years.

MR. NICHOLSON: So let's walk through this one.

MR. CHHATRE: Can you go in the drop box for the ten minute?

MR. JOHNSON: You don't have a camera do you, Matt?

MR. JOHNSTON: I do. In my phone.

MR. JOHNSON: Oh, okay. I just thought it might be advantageous if you took pictures of the pull-downs. That's all.

MR. JOHNSTON: I think I sent --

MR. NICHOLSON: Can you do a screen cap?

MR. JOHNSON: Did you do some of that?

MR. JOHNSTON: -- PDF versions with popups.

MR. JOHNSON: Oh, okay, great.

MR. CHHATRE: Can you go to the dropdown again?

MR. JOHNSTON: Sure.

MR. NICHOLSON: I'm going to look at what you sent because I don't remember seeing suspected column separation.

MR. CHHATRE: So these are ten minute rule which is different. Now the question --

MR. NICHOLSON: It says on startup is what that ten minute rule applies to.

MR. CHHATRE: Right. But see, it says, what are the ten minutes from the significant increase in pressure at a location immediately upstream? What does significant mean to an operator?

MR. JOHNSTON: In training if I was evaluating somebody's execution of this procedure and if there was a column separation in the middle of a pipeline, and the operator was

starting pumps starting from the beginning pipeline and starting pumps moving towards the area of column separation, either when the pump started immediately upstream of the column separation, start the clock, the ten minute clock, or if there was a reliable enough pressure increase from the upstream pumps that you would consider, you know, evidence of a pressure increase at that location, it's basically telling the operators you don't start the clock from when you first started the pump at the very first station, it's when you've reached that point just upstream of the column separation.

BY MR. NICHOLSON:

Q. So you do that kind of training, I mean do you do that on a simulator?

A. Yes.

Q. And what are they using to determine their col. sep. on that training program?

A. Well, it's something we train and evaluate on in the entry level and manual emergency response training. It may take different, scenarios may be different variations or different locations or types of column separation.

MR. CHHATRE: And was this effective at the time of the accident?

MR. JOHNSTON: Yes.

MR. CHHATRE: Then correct me if I'm wrong --

MR. NICHOLSON: Well just one second. I'm sorry. I

wanted to hear that answer. He was --

MR. JOHNSTON: Right. I'm sorry, could you repeat the question?

BY MR. NICHOLSON:

Q. What I want to know is in that simulation when they go through that exercise you just described for this procedure, how are they determining col. sep. from what indicator on their screen?

A. Okay, there could be a number of indicators. One would be a low pressure read back.

Q. Where they get the blue background?

A. Yep.

Q. Okay.

A. Another -- you know, that's the typical way. You've got a pressure read-back at the top of a hill maybe, and it's showing that there's very little or no pressure. Another way would be if you've started a pump and you're expecting a pressure increase downstream within an expected period of time, the wave travel time that it would take to get there, and it doesn't occur within the timeframe that you're expecting it in, then that could make you suspect column separation or obstruction or some abnormal condition like that.

Q. What about liquid fraction screen, are they taught to go look at the liquid fraction screen?

A. No.

Q. Okay. Hydraulic, the elevation touching the hydraulic profile?

A. We might reference that earlier in the training prior to the evaluation. If we have those lines during the evaluation visible to the operator, it makes the condition too easy to diagnose.

Q. Okay.

A. They would be able to distinguish there whether it was a, they would be able to distinguish between a column separation and a leak or that kind of thing. So to --

MS. BUTLER: Hey, Matt? I've been holding a lot of things. Are you just wanting us to interject as we go through?

MR. NICHOLSON: Yeah, go right ahead. Yeah.

BY MS. BUTLER:

Q. Well, based on that, why don't you cover the liquid fraction display?

A. The liquid fraction display, it's probably best to mention that the simulator model and the MBS model handle calculations differently.

Q. Right.

A. So in the simulator where the model is generating all of the data and calculating what liquid fraction is modeled to be in a particular area, it's I suppose an interesting tool, but it's not something we use in training for the operators to --

Q. Okay, so if you can't simulate something, it doesn't

mean that it's automatically out of your training package, does it?

A. No, no, it doesn't, but the liquid fraction display isn't a tool that operators are expected to use in natural operations. Using --

Q. Okay, has the liquid fraction display ever failed? Like, has it ever shown, that you're aware of, has it ever shown a liquid fraction when it didn't actually occur?

A. I've never seen the liquid fraction display used in actual operations.

Q. Well, to me based on the quick overview of that screen, that is probably the simplest place to go and see a column sep. in a hurry, and the reason I say that is because it does show you pressures at the bottom, it shows you the event in where it's occurring, and while what I'm hearing from what you're covering right now, if they're not only working on one system, it seems to me that what you're going over with the simulation is going to be fairly difficult to remember, and the only reason I'm thinking that is if I've got four pipeline systems, is that something you're actually simulating is four simultaneous systems having problems at the same time?

A. We normally wouldn't do four. We may do two.

Q. Okay, but you would do two, and so on the two based on what I thought I heard you say, how are they supposed to be looking at what you're telling them to look at and deal with

simultaneous problems? I'm just trying to figure that out in my head. Maybe it's because I can't see.

A. I'm not sure I quite understand, Karen.

Q. Okay, well never mind. Just go on with your stuff. I'm just going to chalk it up to I can't see what you're looking at.

MR. NICHOLSON: All we're looking at is a suspected col sep procedure.

MS. BUTLER: So I thought I heard you say something about in the simulator, blah, blah, blah, blah, blah. So that's why I thought you were also looking at a simulation screen.

MR. NICHOLSON: No, we are not.

BY MS. BUTLER:

Q. Okay, so the procedure says what again on column sep? I'm sorry.

A. Okay, so it says in the event of a suspected column separation, and then the heading pipeline operator, the work instruction is notify shift lead. Then there's a conditional statement, if a column separation is suspected from incoming SCADA data, and the column cannot be restored within ten minutes, then there's a qualifier, if the column separation is occurring on startup, it qualifies it as ten minutes from a significant increase in pressure at the location immediately upstream of the suspected column separation. So in general, if the column separation cannot be restored within ten minutes, the work instructions for the pipeline operator are to notify the shift

lead, shut down the specific line, sectionalize, isolate, and execute abnormal operating conditions reporting.

MR. CHHATRE: Does this mean that the 20 minute startup that we looked at, on the 22 minute (indiscernible) for the significant increase in pressure at a location immediately upstream of a suspected column separation?

MR. NICHOLSON: This is the procedure they referred to this morning.

MS. BUTLER: Yeah, I think that's where I kind of headed down the path of liquid fracs because if you're running on multiple pipeline systems and you do have column separation possibly onto them, especially where it might be in one other one because 6B's down on a normal stop, it just seems to me that if they are, if it's in a normal pattern they probably know where the suspected column separation is, but if it's not in a normal pattern, how do they know where the suspect column separation is without checking all of the pressures and they could simply do that in a liquid fraction display all at once it seems, so that's where I was headed. Sorry.

MR. NICHOLSON: Yeah, I agree. The liquid fraction screen to me really pinpoints where in that segment the col. sep. is, right? Otherwise your pressure display is just telling you the nearest station, right?

MR. JOHNSTON: Okay, so the liquid fraction display as I understand it is calculating and interpolating and making

calculation between transmitters of what model thinks is the amount of vapor in the fluid. There's another display, the one that is up and in front of the operators all of the time that shows the full hydraulic gradient with the elevation profile and head profile and flow profiles.

BY MR. CHHATRE:

Q. So this procedure then as you the operator knows how to suspect the column separation or there is a different dropdown box that an operator can look and see what would indicate column separation?

A. Well, one indicator might be in the MBS, the display I just mentioned.

Q. Okay.

A. If the headline is touching the elevation profile, then that could be an indication of where the --

Q. I assume that the operator knows how to suspect the column separation.

A. Right. Yep.

Q. There is no other reference before that that just deals with how to identify column separation. There is nothing in your procedure that tells operator how to identify or suspect a column separation possibility.

A. It's primarily in the training.

Q. That's fine. I'm just asking so we're not missing anything in here. So going back to this dropdown window, which

says ten minutes from the significant increase in pressure at the location immediately upstream of a suspected column separation, so going back the 20 minutes start it started, A, I do not know when what the suspect significant increase means, but whether 50 (indiscernible) is significant or 100 or 200, but I'm assuming that the operator knows what significant means, but whatever the significant means, in our case with the 32 minute startup, did the pressure upstream of that column separation indeed increase significantly?

A. I mean, 280, I think, is what they got to.

MR. JOHNSON: Is that (indiscernible)?

MR. JOHNSTON: Then there would be the, yeah, then there would be the --

MR. CHHATRE: When it reached 280, and if it didn't reach 280 for the first ten minutes, then the original ten minutes, I thought it was procedure, the ten minutes doesn't start until you get a significant increase upstream.

MR. NICHOLSON: That's what they were saying.

MR. CHHATRE: So I think --

MR. NICHOLSON: That's part of what I clarified today, right.

MR. CHHATRE: So they are using the current, the procedure that was in effect at the time, not the wrong procedure --

MR. NICHOLSON: No. Where is, can we see the proposed

procedure that they were referring to? This is not, they were looking at a revision to this.

MR. CHHATRE: (indiscernible) clarified that.

MR. NICHOLSON: Yeah, okay.

MR. JOHNSTON: And I was going to ask to see that.

MR. NICHOLSON: And I did, I apologize, I did have that suspected leak procedure. I just missed it.

MR. JOHNSON: Well good. Well if you have it then Karen has it, so.

MR. NICHOLSON: Well I just e-mailed it to you too, Karen, so you can refer to it.

MS. BUTLER: And I'm sorry guys. On the procedures we downloaded some separate files on one data request, and then we've got the total O and M somewhere, and to be honest with you, trying to go through different sections, it was very confusing to me.

MR. NICHOLSON: I just e-mailed you the page we're looking at.

MS. BUTLER: Thank you.

MR. CHHATRE: What is the new one?

MR. NICHOLSON: This is the one that wasn't --

MR. CHHATRE: Approved.

MR. NICHOLSON: Approved, yeah. And where does it say -- will it say pending? I wanted to see where it --

MR. JOHNSTON: There is a syndication that it's --

MR. NICHOLSON: Okay.

MR. JOHNSTON: -- under review.

MR. NICHOLSON: This is basically what you would have seen when they submitted it to your group?

MR. JOHNSTON: This is what our group would send out by way of e-mail that there's been a new procedure modification that's been proposed. It would come with this initial message saying what the change is all about, who the initiator is, or the originator, talk about the review period, who the approver would be if it's approved and that sort of thing.

MR. CHHATRE: Okay. Ready to move on?

MR. NICHOLSON: Yep.

MR. CHHATRE: We are at the very top, right, at this point?

MR. NICHOLSON: Yep. Basically, yeah.

MR. CHHATRE: So the only thing that is different the way I see it is the dropdown menu is gone, correct? Or am I missing something?

MR. JOHNSTON: The new material here is shown in, or the proposed material is shown in red.

MR. NICHOLSON: So it gives you, the ten minute rule would then only apply after your calculated restoration time expired?

MR. JOHNSTON: Yes.

MR. NICHOLSON: If you calculate it, why do you need the ten minutes? What is the ten minutes for? It's just kind of a

buffer, right, for filling a column in? A typical, it must have been someone's best guess of what it should take?

MR. JOHNSTON: Well, it's a maximum limit of how long an operator can attempt to fill in a column.

MS. BUTLER: Could you read that to me what you just said, what your question was, Matt, in regards to?

MR. JOHNSON: So the portion of this procedure that's in red, and I'll go first, if a starting up into a known column separation, the pipeline operator notifies the shift lead, number two, calculate the amount of volume drained, and in parenthesis, from CMT tank levels, et cetera, number three, calculate a restoration time to restore the column separation from volume drain flow rate equals time. The shift lead confirm calculated restoration time with the pipeline operator, which we just discussed. Number two, request operator to start up the line into the column separation starting the ten minute rule when the calculated restoration time expires.

MS. BUTLER: Okay.

MR. JOHNSON: If the column cannot be restored under the above conditions, request the operator to shut down, sectionalize, and isolate.

MS. BUTLER: So they were busy cranking calc's because they knew they had a column sep. and they just didn't know when it occurred on that second --

MR. JOHNSON: I think what, as I read this one, correct

me if I'm wrong, anyone --

MR. NICHOLSON: No, this is what they used on the first attempt.

MR. JOHNSON: If we calculated a restoration time using the volume drain flow rate equals time, let's say that was 20 minutes, then they could start up and the minute that 20 minutes was over, then the ten minute rule went into effect, and so on and so forth.

MR. CHHATRE: That's how I read it. That's not how I read it. Completely independent to others here, confirm the calculations, just confirm the targeted time, then they're saying start up into the ten minute rule when the calculation restored time expires. They calculate ten minutes on the top of this, can they not? Is that what you're saying?

MR. NICHOLSON: That's what we're saying.

MR. CHHATRE: Okay.

MR. NICHOLSON: Yeah, additional ten minutes on top of what they calculated.

MR. CHHATRE: That's what you said? Okay, I'm sorry.

MR. NICHOLSON: And that's in agreement with what was said today in interviews.

MR. CHHATRE: So they did according to this new procedure.

MR. NICHOLSON: Which they were not supposed to apply. It's not an issue, it was never even approved, was it?

MR. JOHNSTON: No.

MR. NICHOLSON: Was it rejected?

MR. JOHNSTON: It was -- it didn't go through the complete review process all the way through to approval because not all the reviewers, including myself, agreed that this was a good modification in terms of the best way to deal with a column separation.

MS. BUTLER: So is this particular approval process like have a specific duration? Like do, when they have a revision you propose it and it starts around the reviewers and then it gets all the authorities signed off on it, is that supposed to happen within a specified timeframe?

MR. JOHNSTON: A timeframe is, yeah, predetermined. In this case it was --

MR. CHHATRE: Sometime in May --

MR. JOHNSTON: -- would have been fourteen days.

MS. BUTLER: So if they don't hear anything back in fourteen days and they knew that was the timeframe, could there be an assumption that it's been approved?

MR. JOHNSTON: When a procedure is approved there is a notification that it's been approved, so normally that would be the information that would trigger a person to know that it's been updated.

MR. CHHATRE: Can we go up a little bit if we may?

MS. BUTLER: Is that notification always was the same?

MR. JOHNSTON: It's a pretty standard notification, just very basic that the procedure has been approved and put into the production system, is in effect, that kind of thing.

MS. BUTLER: Is the revision and the actual in the same place?

MR. JOHNSTON: No, they're in separate databases.

MR. NICHOLSON: I'm sorry, you said this was in a separate database from?

MR. JOHNSTON: Yes.

MR. CHHATRE: You know, nowhere I see it says (indiscernible) procedure, do not --

MR. NICHOLSON: That's what I was asking for originally. That's why we scrolled to the top. Yeah, there's nothing there that says pending --

MR. CHHATRE: There is nothing that tells me, if I'm there on the floor, nothing in here tells me that --

MR. JOHNSON: Go back to where you had it, Jim.

MR. CHHATRE: -- that it's temporary.

MR. JOHNSON: Go back to where you found it. I think that will help you.

MR. CHHATRE: That will really help.

MR. NICHOLSON: Now in the interviews everyone seemed to understand it was --

MR. JOHNSON: Right there. It's found under suspended procedure modification.

MR. NICHOLSON: That's how it would have appeared?
MR. JOHNSON: That's where --
MR. NICHOLSON: That's how it's worded out?
MR. JOHNSON: Yeah, that's, right now that's, I mean that's where Jim went and found it right there.
MR. NICHOLSON: Jim?
MR. JOHNSON: This Jim.
MR. CHHATRE: So does that --
MR. JOHNSON: So if they found it --
MR. NICHOLSON: So Giselle went to a place called suspended procedure modification?
MR. CHHATRE: Does that mean the entire procedure suspended while you're doing the modification?
MR. JOHNSON: The procedure modification is suspended.
MR. NICHOLSON: It never got --
MR. JOHNSON: The procedure is still good that we looked at earlier. This is the procedure modification is suspended, meaning not approved for lack of a better term.
MR. NICHOLSON: Okay.
MR. JOHNSON: And, you know, I don't know that Giselle suggested using something that was suspended. I think she suggested taking a look at, you know, this revision that, you know, to come up with some times, to come up with some ideas to deal with this.
MR. NICHOLSON: Okay.

MR. JOHNSON: And, you know, and I'm speculating there, but so I don't think someone chose to use a suspended procedure, but it was something that additional thought process that went into as they're sitting around trying to figure out what was going on.

MS. BUTLER: That which, or --

MR. NICHOLSON: It sounds like they were --

MS. BUTLER: -- or it could have just been pulled up accidentally.

MR. JOHNSON: No, you would --

MR. NICHOLSON: No, you wouldn't --

MR. JOHNSON: Not accidentally. If you could see the screen, Karen, it's very clear.

MS. BUTLER: Now, wait a minute.

MR. JOHNSON: Sorry.

BY MS. BUTLER:

Q. What I'm thinking is are they allowed to copy procedures to their hard drives or do they have an active machine? Or get an e-mail so somewhere they've got some capability to store files?

A. That's correct, yep.

Q. Okay, so she's a reviewer, right?

A. Yes.

Q. If I recall she was on the reviewer list.

A. The reviewer list on this one would have included all on-shift staff.

Q. And from what we understood previously in one of the interviews that there's a couple that are appointed and she had been appointed.

A. Oh, okay.

Q. And so, you know, she's making modifications, she's making edits to the procedure and she stores it on her hard drive or at a location, then why are we so convinced that it wasn't just simple misunderstanding? She pulled it up, I mean, without talking to her we don't know.

MR. NICHOLSON: Yeah, but there is also a header that goes with this, so if she saved it to her hard drive it would still have this header that clearly says it's got all of the --

MR. CHHATRE: Suspended procedure modification.

MR. NICHOLSON: Yeah, I mean it tells you that --

MR. JOHNSON: You would have to go outside of the procedure database to get to this.

MS. BUTLER: Okay.

MR. JOHNSON: And if for some reason she saved it through an e-mail, then she would have left the Lotus Notes to go to Outlook to find it.

MS. BUTLER: Yeah.

MR. JOHNSON: So it isn't a simple, "I hit the wrong button."

MS. BUTLER: Okay, but so we just do need to know. Yeah, we need to ask her.

MR. CHHATRE: Can you go back to the procedure in effect at the time of the Marshall? Now that we have confirmed. See the ten minute rule dropdown? You say the ten minute clock, if I read this correctly, the ten minute clock begins when the operator decides I have a significant pressure increase upstream of my column separation.

MR. JOHNSON: Correct.

MR. CHHATRE: To me that's a very open-ended requirement because what is significant? The operating pressure is 600 PSI. Is 200 significant or is 500 significant? What is significant? When does his clock start at ten minutes? So I guess what I'm trying to figure out in the initial 22 minute, is it broken the rule or not broken the rule? Do you have pressure charge on that? When the pressure reached at that location? When it first started it was -- they started it, didn't have anything and then there's a continue another ten minutes. That was the first.

MR. NICHOLSON: Continue another 20 minutes.

MR. CHHATRE: Thirty minutes, okay.

MR. NICHOLSON: Based on the calculations.

MR. CHHATRE: Right. So if we have the pressure charge for the first ten minute and there is no pressure increase upstream of that column separation, have they done anything that it ruled as (indiscernible)?

MR. JOHNSON: I believe in their interviews they said they got to the ten minutes. So they were aware of the ten

minutes because they made their shift lead aware of it.

MR. NICHOLSON: Yeah, they called on ten minutes.

MS. BUTLER: Yeah, I think the issue is their understanding of whether they could run through that calculated time or not --

MR. NICHOLSON: (indiscernible).

MS. BUTLER: -- and I think they clearly --

MR. CHHATRE: So they didn't interpret the rule as something --

MR. JOHNSON: No. They didn't cheat the system --

MR. NICHOLSON: This part was, yeah, still good.

MR. CHHATRE: The reason I'm saying this, this time does give plenty of leeway.

MR. JOHNSON: Well, I mean once again this isn't verbatim. It isn't if you're on one line, you know, ten percent of a thousand is 100, that's part of the training in the simulator that Jim talked about --

MR. NICHOLSON: Okay.

MR. JOHNSON: -- that they get to know what significant is.

MR. CHHATRE: Okay, and I --

MR. JOHNSON: They run through that scenario so they don't -- it's not -- the procedure is not a do all, end all.

MR. CHHATRE: Now I understand this ten minute rule at least on this particular topic. I am okay with all the screens,

but you guys can --

MS. BUTLER: Okay, so can we take some other general questions or do we want to stick on this topic for a while?

MR. CHHATRE: No, I just want to look at the sectionalization or if we can isolate those two dropdown --

MR. NICHOLSON: Just a second here. Hold on.

MS. BUTLER: Okay.

MR. NICHOLSON: But all of these, the pipeline operator, the one through five, those still are on the modified procedure.

MR. JOHNSTON: We're looking at the production, the --

MR. NICHOLSON: Okay, which they did I guess. So that's all still consistent.

MR. CHHATRE: So can we look at sectionalize, what the operator was supposed to do?

MR. NICHOLSON: Close the sectionalizing down.

MS. BUTLER: We're absolutely certain no notification went out on that procedure, right?

MR. JOHNSON: That would be to you.

MR. CHHATRE: Are you still --

MR. NICHOLSON: Modification on the new procedure?

MR. JOHNSON: Karen just wants to verify --

MS. BUTLER: Yeah, I just want --

MR. JOHNSON: -- that there's no misunderstanding that that procedure went out in some form of a release.

MR. JOHNSTON: No, and I think would know, and I --

MR. JOHNSON: Actually, I think to the point where even maybe a better way to answer that clearer is the people that talked about using it knew it wasn't an official procedure.

MS. BUTLER: Yeah, I'm just trying to make sure that there wasn't, you know, sometimes the strangest things happen and there's two e-mails that look alike and some knew and some didn't, and so I just wanted to make sure from our perspective we have no reason to believe that there was anything that would have confused that matter.

MR. NICHOLSON: Well, to get that I think we need to talk to Giselle.

MS. BUTLER: I completely agree.

MR. NICHOLSON: Okay.

MS. BUTLER: I just wanted to make sure on Jim's behalf, because you kind of are the keeper, aren't you of procedures? Or are you just like the trainer so you have to keep them so to speak?

MR. JOHNSTON: Yeah, I need to monitor that the procedure quality process is running like it's supposed to and in our document, and so I don't approve, I don't necessarily write, but I believe I need to make sure that we're following a process to --

MR. CHHATRE: You're the gatekeeper?

MS. BUTLER: So who is the keeper, so to speak, of all procedures? Who is the procedure czar?

MR. JOHNSTON: Well, that's a, I'm not sure how to answer that.

MR. JOHNSON: I would say it's you, Jim.

MR. JOHNSTON: Really?

MR. NICHOLSON: You hold these procedures.

MS. BUTLER: Okay, well who do the e-mails come out from that indicate the attached or the approved new procedure or something? Who sends the notification out?

MR. JOHNSTON: That's normally one of my reports.

MS. BUTLER: Okay.

MR. JOHNSTON: Yep.

MR. JOHNSON: Under your direction?

MR. JOHNSTON: Yep.

MS. BUTLER: Okay.

MR. NICHOLSON: Okay.

MR. JOHNSON: You're the czar.

MR. JOHNSTON: I didn't mean to --

MR. CHHATRE: So going back now again, can you go back to this, because that tells me what the operator is supposed to do. He's supposed to close upstream, downstream valves and essentially he's telling him to close all the valves, is that correct? He is supposed to close the sectionalizing valves, and in addition he's supposed to go to all valves nearest two or address between locations, then he's supposed to close two upstream and two downstream valves.

MR. NICHOLSON: Well, this is an emergency shutdown.

MR. CHHATRE: Right, but --

MR. NICHOLSON: It's not --

MR. CHHATRE: Go back to that. No, let's go back to that previous screen. And that thing is coming from what the operator is supposed to do.

MR. NICHOLSON: Okay, that's if you cannot put the column back in in ten minutes.

MR. CHHATRE: In the event of a suspected column separation. It doesn't give them a choice.

MR. NICHOLSON: That's true.

MR. CHHATRE: It's telling the operator that they have (indiscernible).

MR. NICHOLSON: Supposed to isolate the station. According to that.

MR. JOHNSTON: Yes.

MR. NICHOLSON: I don't think that was done.

MR. CHHATRE: That's what I'm saying. If you go back, and that's why I was looking at those dropdown menus.

MR. NICHOLSON: If we go to sectionalize, it even said you had to --

MR. CHHATRE: Sectionalize pretty much said that you're to close almost all of the valves pretty much.

MR. JOHNSON: Sectionalizing, doesn't it give you a list of the valves when you sectionalize?

MR. NICHOLSON: Yeah, but beyond that it said close the station valves. Didn't it say on either side of the --

MR. JOHNSON: Why don't we go to it? Why don't we go back there, Jim.

MR. JOHNSTON: So to sectionalize?

MR. JOHNSON: Yes.

MR. NICHOLSON: Yeah, let's start there.

MR. JOHNSTON: Okay, it says close all the normal sectionalizing valves, okay, which there is a list provided.

MR. JOHNSON: So it'd be six.

MR. JOHNSTON: So close all of those.

MR. NICHOLSON: Let's talk about, what are all of these, because I got this on an IR. Do you know? What's EG?

MR. JOHNSTON: So that's the call center of the station called Edgewater.

MR. NICHOLSON: Which is on the inland side or?

MR. JOHNSON: 6A.

MR. JOHNSTON: 6A.

MR. NICHOLSON: Oh, this is 6A?

MR. JOHNSON: And then OW would be Owen.

MR. NICHOLSON: Also 6A.

MR. JOHNSON: Yes.

MR. NICHOLSON: In fact they're all 6A except for MD and SK.

MR. JOHNSON: NV I think is Niles.

MR. NICHOLSON: No, it's Mendon.
MR. JOHNSON: Mendon is MD. NV.
MR. NICHOLSON: Oh, I'm sorry.
MR. JOHNSTON: NV is --
MR. NICHOLSON: That's 6A. No, no, that's got to be 6A because --
MR. JOHNSON: Naperville. It's Naperville.
MR. CHHATRE: Okay, so you close these?
MR. JOHNSTON: Yes.
MR. CHHATRE: Then you're to go to the next --
MR. JOHNSON: So if you will, the last three valves are on 6B.
MR. NICHOLSON: What is LN? Is that Leonard?
MR. JOHNSTON: Yes.
MR. CHHATRE: And the other (indiscernible) at the bottom?
MR. JOHNSON: Yes.
MR. JOHNSTON: Yes.
MR. CHHATRE: Okay.
MR. JOHNSON: So that's that valve 576.93 we talked about.
MR. CHHATRE: So they're supposed to closed --
MR. NICHOLSON: These should be the same valves you shut on shutdown too.
MR. JOHNSON: Those are the ones we shut.

MR. NICHOLSON: I never saw a Leonard valve shut, did it?

MR. JOHNSON: That's because we didn't go past Stockbridge.

MR. NICHOLSON: Oh, okay, it was already shut. Okay, sorry, go ahead.

MR. CHHATRE: So if you go back again, so they're supposed to close these three valves?

MR. JOHNSON: Yes.

MR. CHHATRE: Or stakes. Then all the valves nearest to or addresses particular location in addition to the, then in addition to those two items, next two upstream valves and next two downstream valves. So it's almost pretty much close almost every valve in the vicinity of, I mean very little is left for imagination here.

MS. BUTLER: Matt, did we have a copy of that with all the list on it?

MR. NICHOLSON: Yeah, let me get that. I'm sorry, with all of the lists of the valves?

MS. BUTLER: Yeah.

MR. NICHOLSON: I think I've seen that somewhere.

MS. BUTLER: Okay, that's fine. I just, it's not popping in my head. That's fine.

MR. NICHOLSON: I could be wrong.

MR. CHHATRE: Can you go back?

MR. NICHOLSON: You might want to make that an IR request because I know I've got the page that says line one, two, three, four.

MR. CHHATRE: Go back. Go back. Go back.

MR. NICHOLSON: I don't think I've got the one that shows the six.

MR. CHHATRE: Okay, these are the ones we were here.

MS. BUTLER: Yeah, I don't remember seeing the list to match it up. I remember seeing a reference to it I think.

MR. NICHOLSON: Me too. That's where I'm getting, so we'll just ask for that. If it's an overlap, so be it.

MR. JOHNSTON: And the valve list is in section D, so if you didn't receive section D.

MR. NICHOLSON: See, that might be the problem. I don't think I have section D.

MR. JOHNSON: So I have a list of standard sectionalizing valves in section D, so that's my note to myself to get you.

MS. BUTLER: Yeah, so it may be that in most of our procedures we got the A, B, and C pat but not the D and E part.

MR. CHHATRE: See, the other item, and that's why I wanted to come back here, if you look at the very last thing the shift lead is supposed to do is issue the emergency notification and initiate the control, I mean, essentially he has them start leak procedures again according to those procedures. So after the

first 22 minutes, they had to treat this as a leak, don't they? According to this procedure?

MR. NICHOLSON: The first how many minutes? Ten minutes.

MR. CHHATRE: Right. But they could do it in 22 minutes and there really is, the first start of what's 22 minutes was 32.

MR. NICHOLSON: Thirty.

MR. CHHATRE: Thirty.

MR. NICHOLSON: Twenty-seven, 30.

MR. CHHATRE: So after ten minutes that's what they're supposed to be doing is going through, the very first thing they're supposed to do is treat this like a leak. I don't think there's a choice for them according to these procedures.

MR. JOHNSTON: Ten minutes from upstream pressure basically, yeah.

MR. CHHATRE: Yeah.

MR. NICHOLSON: No, there is no choice according to this.

MR. CHHATRE: According to this, there is no choice. They cannot --

MR. NICHOLSON: Well, I mean we could even go to the proposed one that they pulled up, and I think does it read the same after you get past your calculated time? Even then.

MS. BUTLER: So what are you claiming they can't do? I'm sorry. I missed --

MR. NICHOLSON: So even in the proposed one after 30 minutes they should have sectionalized, isolate.

MR. JOHNSON: Well, I think what happens, if we cannot, so if you go to the emergency notification.

MR. NICHOLSON: Well, but before that request operator to shut down, sectionalize, and isolate.

MR. JOHNSON: Oh, okay, my mistake. Yeah, just yeah. So you're --

MR. NICHOLSON: So in both cases they were wrong, right? Or they executed it correctly?

MS. BUTLER: Does it say request the operator, is this the shift lead that's to request or the call out?

MR. NICHOLSON: Yes, it is, exactly.

MS. BUTLER: So neither the call out nor the shift lead did request that?

MR. CHHATRE: I mean, that's why I wanted to go back to the screen because the procedure in effect at that time does not leave any wiggling room for not treating this as a leak.

MS. BUTLER: I think even following through and just listening to the things that we've been talking about, it's very clear that, you know, we're trying to figure it out and step through it, and we don't have the angst associated with wondering whether or not we've got a leak, and we're trying to figure out procedures, so I think there's some clarity that could definitely help.

MR. CHHATRE: This definitely helps. This definitely helps looking at this the way it is displayed.

MR. NICHOLSON: Yeah, I mean the format works being able to click the links, but --

MR. CHHATRE: Right.

MR. NICHOLSON: Yeah, it definitely could use some clarity.

MR. CHHATRE: And that is more of a reason for them to realize, and I'm even more convinced that to find out what kind of training the mid-level decision makers get on these procedures, because the mid-level decision has this procedure if he or she (indiscernible) get it on the computer. I don't think anything could be more clear than that. With this kind of, I mean anyone can see that even if a nontechnical person should be able to make the decision based on that --

MR. NICHOLSON: Hold on. I want to run the converse here because what if, say it's not a leak though, I mean what if you really do have a break in your column and you can't put it together in ten minutes, under this --

MR. CHHATRE: No choice.

MR. NICHOLSON: -- now you've shut down, you've isolated, sectionalized, how do I get out of this? How do I --

MR. CHHATRE: Permission to restart line when (indiscernible) pipeline control --

MR. NICHOLSON: All right, so now I've got to call

everyone out to go look for the, I mean, it hasn't sent me to leak triggers or anything here though, right?

MR. CHHATRE: No. I'm not saying, as we do all of that stuff --

MR. NICHOLSON: That's telling me to just go straight to contacting field personnel.

MR. CHHATRE: But it does tell you that if you cannot do it in ten minutes, no choice but to treat it as a leak and take the emergency procedures.

MR. NICHOLSON: I'm just surprised you wouldn't treat it as a suspected leak to begin with.

MR. CHHATRE: Unless previous procedure tells them to treat anytime you get a column separation or mass balance alarm it is a leak.

MR. NICHOLSON: Yeah, but only in the context of an MBS. It doesn't tell you to go out looking for pressure drop or anything else.

MR. CHHATRE: No, no. That part I agree. But still there's no choice, once you get a mass balance alarm, it has to be treated like a leak investigated further. This one tells you the same thing if you get a column separation, no choice, and if you cannot reconcile in ten minutes, not choice but to treat this like a leak and shut down.

MR. NICHOLSON: I can see why they resisted to go down the step. There's no incentive. I mean, if you can't put it

together in ten minutes, then the next thing you know you're calling field personnel, you're notifying regional managers. I mean, it's a big leap, and I mean, I would be hesitant just because I couldn't put my column back together in ten minutes, I'm not sure I'd be wanting to --

MR. CHHATRE: But I think that is where you have a little leeway out. Like Jim's saying, you can put in a degree in for it and say look, under this procedure, but in the meantime, the procedure being, I think the whole purpose of the procedure is to prevent the mishaps at the cost of some inconvenience, and I fully agree. I think it may be inconvenience for (indiscernible) routine column separation situation, which you may or may not be able to reconcile in ten minutes. And I think the ten minute rule, I mean I haven't seen any official documentation for it, but comes from experience. I mean it's not just pulled from thin air. I mean there are some experience basis for it.

MR. JOHNSON: Yes, it came out of a leak. It was findings from a leak.

MR. CHHATRE: So it's not like there is no basis for that.

MR. NICHOLSON: So the same ten minute rule that shows up on the column sep. procedure is based on that spill?

MR. CHHATRE: That's what I understand.

MR. JOHNSON: Back in '91, yes.

MS. BUTLER: Do you know, was there a column separation

in that 1991 leak?

MR. JOHNSON: Pardon me, Karen?

MS. BUTLER: Do you happen to remember, Jay, if there was a column separation involved in that 1991 leak?

MR. JOHNSON: I believe it was suspected column separation but I don't know that verbatim.

MS. BUTLER: Can you just check into that and let us know at your leisure as opposed to an IR request? Because if that is kind of a founding basis for all of this and yet there really wasn't the column separation at a startup condition, then you know, some of this may need revisited from that perspective.

MR. NICHOLSON: If that's your hard and fast rule, then you need to design your systems such that you can fill in any column separation in less than ten minutes. That's what it says.

MR. CHHATRE: But I mean, all I'm saying is that when I started reviewing it the procedure has some loopholes, but this is, you know, I mean no procedures may be perfect I guess. It can be improved all the time, but procedure as written, if it were to follow verbatim.

MS. BUTLER: Matt, what other procedures did you want to look at specifically before I ask a couple general questions?

MR. NICHOLSON: I didn't really have a list of them. I think, we've covered the big ones, the MBS and the col. sep. Go ahead, Karen, why don't you take the floor.

BY MS. BUTLER:

Q. Okay, so James -- can we call you Jim? I mean that's what everybody does?

A. Absolutely.

Q. Okay, so Jim, is there any procedure that you're aware of that seems to be constantly being revised?

A. Nothing springs to mind as something that's coming up over and over. I could sort of check for patterns and things, recurring ones.

Q. Is that something that you ever do is check for patterns on that?

A. Really, just sort of from my perspective, from memory, I don't have sort of a routine where I do that, no.

Q. Okay. So do we ever just spend time talking to the operators and asking them what they need in the procedures?

A. We do, I think one of the main times we do that is in the annual emergency response training.

Q. But isn't that kind of geared around the emergency procedure?

A. Yes, it is. Yeah.

Q. So do you ask them about other procedures?

A. There are I guess events that trigger those types of conversations. Some of them are when we review our operations awareness program, it's like a hazard awareness program, bulletin, or other conditions follow up after an incident or an issue would be another natural time that we review them.

Q. Have you done it yet as a result of Marshall?

A. Yes, we have.

Q. And what did they tell you?

A. Oh, okay, so I should clarify, what's happened so far are some proposals for change. The proposals so far have been leadership team proposals. Those proposals would then go out to the group for comments and feedback.

Q. So what topic areas did they cover?

A. So far the procedures would be column separation, MBS leak alarm, pipeline startup, pipeline shutdown. I think those are the key ones. There are some other related procedures that would also be impacted.

Q. Can we have an IR request made for all of them submitted to us, Jay?

MR. JOHNSON: So what would I ask for here, Jim?

MS. BUTLER: All procedures --

MR. JOHNSON: No, I'm going to ask Jim to define it to me.

MS. BUTLER: Oh, I'm sorry.

MR. JOHNSON: He understands.

MR. JOHNSTON: I think it would be draft versions of the procedures under current proposal or consideration for revision.

MS. BUTLER: And that should include any associated?

MR. JOHNSON: Sure. Draft versions of procedures currently under review?

MR. JOHNSTON: Yeah.
MS. BUTLER: So on --
MR. JOHNSON: Proposed, Marshall?
MR. JOHNSTON: Yeah, I think that would.
MR. JOHNSON: So that, when Bonnie sends it to you, you'll know.
MR. JOHNSTON: Yeah.
MR. JOHNSON: That's the key.
MR. JOHNSTON: Yeah.
MR. JOHNSON: All right, Karen.
MR. NICHOLSON: Well, that's going to post-Marshall but not necessarily as a result of --
MS. BUTLER: Only related to Marshall.
MR. NICHOLSON: Yeah. Don't we only want those related?
MR. JOHNSON: Yeah, there may be some 6B ones related too. All right.
BY MS. BUTLER:
Q. Okay, so when you use the term work construction, I think you've used that a couple times, what should that tell me?
A. Work instruction? That's --
Q. Oh. Is it work instruction?
A. Yes.
Q. Okay, what should that tell me?
A. Okay, so if we're using this suspected column separation procedure as an example, everything numbered or bulleted would be

a work instruction. So for example, notify shift lead, shut down specific line, sectionalize, isolate, execute, they typically start with an action verb like that and give instructions to the operator.

Q. Okay, so is that considered like more specific in your view?

A. I consider it, maybe it's just another way of saying that procedural steps of the work instruction.

MR. CHHATRE: Karen, what do you mean by more specific? I mean, to me the procedures are specific, period.

BY MS. BUTLER:

Q. Okay. So procedural steps is an acronym or a --

A. Synonym I think, yep.

Q. -- a synonym for it.

A. Yep.

Q. Okay, have you ever provided supervisory training on column sep.'s or leak detection or system problems or questions to ask when you're trying to recover from a column sep. or typical problems that could result in the control room?

A. Not, you know, packaged as a training piece for --

Q. Okay.

A. Yeah, no.

Q. Do the shift leads have any different training than the other operators from your group?

A. They do. Yeah, they complete a shift lead training

program.

Q. What does that include?

A. That includes approximately 15 to 20 learning objectives on topics that shift leads are expected to know and tasks they're expected to perform.

MR. NICHOLSON: Is that the learning curriculum there or is that, what are you holding your hand?

MR. JOHNSTON: I haven't found it yet, but I --

MR. NICHOLSON: Oh, okay. Because we'll just make that --

MR. JOHNSTON: I have a copy of the curriculum here.

MR. NICHOLSON: Perfect.

MS. BUTLER: Okay, so we want that too.

MR. JOHNSON: So you want the curriculum?

MR. JOHNSTON: Shift lead training program.

MR. NICHOLSON: Save us from reading it.

MR. JOHNSON: Why don't you just give it to us and I'll --

MR. JOHNSTON: Reading it on tape.

MR. CHHATRE: Now, is this a technical additional teaching topics or are they management topics?

MR. JOHNSTON: They're in four categories: administrative --

MR. JOHNSON: Here go ahead and take it.

MR. JOHNSTON: Sure. Administrative, interpersonal,

procedural, and technical.

MR. CHHATRE: One technical and the others are all nontechnical per se?

MR. JOHNSTON: So then there are half a dozen topics under technical.

MR. CHHATRE: And are they same topics as operators?

MR. JOHNSTON: No, they're different.

MR. CHHATRE: They're different.

MR. JOHNSTON: Separate.

MR. JOHNSON: So it's the management, or the training --

MR. JOHNSTON: The shift lead training program.

BY MS. BUTLER:

Q. So do you cover pressure trending in that?

A. Pressure, well, we've got a learning objective, flow and gradients, transient and incident analysis. Pressure trending is covered in the operator training, which the shift leads would have gone through.

Q. What about, do you cover how to recognize abnormal pressures or pressures out of typical ranges?

A. Again, definitely in the operator program and we also have that transient and incident analysis objective in the shift lead program.

Q. Okay. So do you cover what to do or how to report if a command doesn't show up with a corresponding alarm, or do you cover how the alarms and commands should go together?

A. In the shift lead program I don't believe there's a specific objective on that or any component of an objective on that. In the operator training program there are objectives on SCADA commands and SCADA alarms. I'd have to double-check to see if there's the connection between the two specifically that you're making.

Q. That might be a key takeaway because that is telling you something about how your system's performing that may not be obvious, and if they don't even think about looking for that over a time, things can get screwy and nobody know it. So do you go over with the shift lead from time to time the training on priorities for alarms?

A. Well, a learning objective for shift lead under procedural learning objective for SCADA problems and --

MR. JOHNSON: Don't type it all down, Karen. You're going to get it.

MR. NICHOLSON: Yeah, I was going to suggest that too. You know, we'll get a copy of this and maybe the IR.

BY MS. BUTLER:

Q. Okay, and then on the -- you covered all the meeting of various descriptors of alarms, either in the operator training or the shift lead training?

A. Do you mean, Karen, the alarm text?

Q. Yes.

A. So we cover in our training material, reference material

the severity levels, and for the alarm text themselves they may be referenced in specific procedures, but there's not a sort of distinct objective on alarm text itself other than sort of a general --

Q. Well, if we could have some information back. For example, when something comes in as a Marshall low section, there's obviously a lack of understanding as to whether that's coming from the RT or that's coming PFC or if that's coming from the SCADA system, and you know, things can get complicated and messed up and it would be good for them to have an understanding of what that text is actually telling them. The same way with the LBC, I'm sorry, the LPM program, to understand what invalid pressures means exactly. It's pretty important. So that should be an enhancement.

Anyway, do you know if they ever cover things like system alarms that come in and truly say in the text systems and what that means?

A. The alarm class would I think be covered in the description of an S2 or an S0. It's a 0 or 2 or alarm.

Q. Okay. Do you have any idea if in your shift lead specific training are you covering when it's acceptable to input pressure allowable limit changes and when it's not?

A. I'd have to check.

Q. Okay, and do you know if there's anything that as a result of input in pressure allowable limits requires them to

notify the operators of what they've just done?

A. I'd also have to check, yeah, the training and procedures on that.

Q. Okay. Do you cover at all when they need to reboot and when they don't?

A. So, yeah, shift leads don't actually reboot themselves, but we do have training items on SCADA problems and transfer of environment control.

Q. Okay, and does that also cover like when something was locked up, when it appears that a pressure is not moving what you should do?

A. Yes, and primarily I think that we have a specific procedure for that condition.

Q. Okay. Do they get training on just how to go through the process to request changes that need to be implemented in the control room?

A. I wouldn't call it a specific training objective. That is covered in terms of procedures in some cases.

Q. Okay.

A. And within other objectives.

Q. So, you know how the operators have to go through, revisit their qualification training every three years, do the shift leads have to do anything?

A. No, they don't perform covered tasks so they currently don't do OQ evaluations.

Q. All right, so they're not qualified?

A. No, they're currently designated as OQ evaluators, and they receive training as OQ evaluators.

Q. Okay, so you've got to tell me how that works. They're approving someone's ability to do an OQ task, but they themselves aren't qualified to do it?

A. That's right, they're not qualified; they don't go through the process because they don't perform covered tasks, but they are deemed knowledgeable in the tasks that they evaluate.

Q. Okay, so --

MR. NICHOLSON: Hey, Karen, I'm going to --

MR. JOHNSON: Karen, that's very standard from an OQ evaluator standpoint within Enbridge, not just in the control center.

MS. BUTLER: Okay, yeah.

MR. NICHOLSON: Have you got a lot more? Because I think we're going to try and wrap this up and maybe have to do a part two with Jim.

MS. BUTLER: I think I've got about ten fairly quick ones.

MR. NICHOLSON: You're not going to shift gears on us, are you?

MS. BUTLER: No, I don't think so.

MR. NICHOLSON: Okay.

MS. BUTLER: I've had this list for quite a while, so.

MR. CHHATRE: If you have ten questions, let's talk about minutes. How many minutes?

MS. BUTLER: Well, if I limit the answer, I can probably put this through in about five.

MR. CHHATRE: Okay, sounds good. Because we still have to pack up and --

MR. NICHOLSON: We'll give you six.

MR. CHHATRE: We'll pack up and get ready for tomorrow.

MR. NICHOLSON: Okay. Thanks, Karen. Proceed.

MS. BUTLER: So we're taking a break?

MR. NICHOLSON: No, no.

MR. CHHATRE: No.

MR. NICHOLSON: We'll give you six minutes to finish.

MS. BUTLER: Okay, all right. That's what I thought, but then it said, "Okay, bye," I thought. Okay.

BY MS. BUTLER:

Q. All right, so the AOC's, can you name what the AOC's are for the operator fairly easily?

A. Yes.

Q. Okay, and so --

MR. JOHNSON: Why don't you just ask for it?

MS. BUTLER: I was just getting ready to do that, Jay.

MR. JOHNSON: Okay, next question.

MR. CHHATRE: Do you have an LPM module training?

MR. JOHNSTON: Yes, we do.

BY MS. BUTLER:

Q. And do you have the CMT module training?

A. Yeah, so learning objective and web-based training for that.

Q. Okay, is the leak detection actually in that interface running with the simulator?

A. No, they're separate applications.

Q. Okay, does the operator actually get to see what that looks like with both of them running?

A. I'm sorry, see which looks like?

Q. The MBS system and the particular scenario?

A. So the simulator looks quite similar to the MBS system to the operator.

Q. Okay.

A. And they can see in their training what the hydraulics look like.

Q. Okay, so --

A. Go ahead.

Q. Do they simulate a leak event where an MBS alarm actually comes in?

A. No, we don't have currently the ability to trigger an MBS alarm on the simulator. We generally tabletop those scenarios.

Q. With the shift leads do you cover the term span of control in any of your conversations?

A. Yes, we do, and in procedures as well.
Q. You cover that with the mentors?
A. Yes, we do, and the operators as well, although we might not call it span of control. We might call it a, you know, explain what that means instead of calling it that.
Q. There's a volume calculator that I think Jim used that he mentioned, and I think one of the shift leads mentioned that they went in and used. Do you cover training on that? I can think of the term.
MR. NICHOLSON: I don't think that was a volume, that was a line loss calculator, wasn't it?
MR. JOHNSTON: Line loss calculator?
BY MS. BUTLER:
Q. I don't know what the specific term was.
A. We use that as a tool in some of our training.
Q. Okay.
A. We don't have a specific objective for it.
Q. And when you're covering things in a verbal manner with your trainees, do you have like a check sheet so that you make sure that each person receives the same coverage areas in their verbal training?
A. Yes, we do.
Q. And last one, when the controllers, currently they're out of the control room, if they were to come back as well as the shift leads, would they all go through a refresher course or not?

A. Yeah, they would. If it was a significant period of time.

Q. What is significant?

A. I think historically for an operator we look at about a three month period. There's other factors that come into play.

MR. NICHOLSON: I'm sorry. What was that question?

MS. BUTLER: That question was for the controllers that are currently out of the control room and the shift leads that are out of the control room, if they were to come back would they go through a retraining period.

MR. NICHOLSON: Okay. And that kind of speaks to Dave Scott's condition as well, right?

MR. JOHNSTON: Right.

MR. NICHOLSON: Okay.

MR. JOHNSTON: Yeah, so operators would, if they've been, and there's a rule of thumb, three months away, they would receive refresher training and possibly we would go through the re-qualification process with them as well. The shift lead is not the re-qualification and I don't think we've designated a particular guideline for shift leads being --

BY MS. BUTLER:

Q. Do you know if there was a reason from the very beginning, kind of a philosophy that you kept your start-up and shutdown procedures so generic as opposed to say keeping the very specific and putting in a general clause that would allow them to

be modified if unanticipated circumstances require it?

A. The section C procedures are very general by design to allow for flexibility based on conditions at the time, but they may be supplemented by section D or A procedures with more specific information on the pipeline or terminal that they're operating.

MS. BUTLER: Okay. I'm done.

MR. NICHOLSON: I think there's probably more to cover with Jim, and I could see us conferencing in with Jim when we get back to D.C. or something, so.

MS. BUTLER: That's fine.

MR. NICHOLSON: Okay.

MS. BUTLER: I promised five and I think I came close.

MR. JOHNSON: You did okay.

MR. NICHOLSON: Good. Thanks, Karen. Okay, I'm going to go off record now. This concludes our interview with Jim Johnston. Thank you, Jim.

MR. JOHNSON: Thanks, Jim.

MR. NICHOLSON: I really appreciate it.

MR. JOHNSTON: Thank you.

MS. BUTLER: Thank you.

(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 James Johnston

DOCKET NUMBER: DCA-10-MP-007

PLACE: Edmonton, Canada

DATE: December 17, 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.

_____
Kristen Shankleton
Transcriber