UNITED STATES OF AMERICA

NATIONAL TRANSPORTATION SAFETY BOARD

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

Interview of: JIM JOHNSTON

Enbridge Headquarters
Edmonton, Alberta
Canada

Tuesday,
November 15, 2011

The above-captioned matter convened, pursuant to notice.

BEFORE: MATTHEW NICHOLSON
Investigator-in-Charge

APPEARANCES

MATTHEW NICHOLSON, Investigator-in-Charge
Office of Railroad, Pipeline, and
Hazardous Materials Investigations
y Board

[redacted]

BARRY STRAUCH, Accident Investigator
National Transportation Safety Board

[redacted]

BRIAN PIERZINA, Accident Investigator
Pipeline and Hazardous Materials Safety
ion (PHMSA)

[redacted]

KAREN BUTLER, Supervisor
Accide ons
P

[redacted]

JAY JOHNSON, Supervisor
Audits and Inspections
Enbridge Pipelines

[redacted]

I N D E X

I N T E R V I E W

MR. NICHOLSON: Okay, this is NTSB Pipeline Case No. DCA-10-MP-007, Enbridge Energy July 2010 Crude Oil Release in Marshall, Michigan. These are the Human Factors Group interviews being conducted at the Enbridge Headquarters in Edmonton, Alberta, Canada. Today is Tuesday, November 15th, 2011. This interview is being recorded for transcription at a later date. Copies of the transcripts will be provided to the parties and the witness or review once completed.

For the record, Jim, please state your full name with spelling, employer name, and job title.

MR. JOHNSTON: Jim Johnston, J-I-M, J-O-H-N-S-T-O-N, Supervisor of Training and Compliance for Control Center Operation, Enbridge Pipelines.

MR. NICHOLSON: Okay, for the record, please provide a contact phone number and email address that you could be reached at.

MR. JOHNSTON: [redacted] and it's [redacted].

MR. NICHOLSON: Okay. Jim, you're allowed to have one other person of your choice present during this interview. This other person can be an attorney, friend, family member, coworker, or nobody at all. Please state for the record, if you would, who you've chosen to be present during this interview.

MR. JOHNSTON: I don't -- I'm not requesting any

additional person.

MR. NICHOLSON: Okay.

All right, we will now go around the room and have each person introduce themselves for the record. Please include your name with spelling, your employer's name, contact phone number, and email address. I'll start we'll progress clockwise, starting at my left. Matthew Nicholson, M-A-T-T-H-E-W, N-I-C-H-O-L-S-O-N. I'm with the NTSB. My number is [redacted]. I can be emailed at [redacted].

MS. BUTLER: Karen Butler, K-A-R-E-N, B-U-T-L-E-R. I work for PHMSA, [redacted]. My telephone number is [redacted]. My email address is [redacted].

MR. PIERZINA: And Brian Pierzina, B-R-I-A-N, P-I-E-R-Z-I-N-A, and I work for PHMSA [redacted]. And my phone number is [redacted], and my email is [redacted]

MR. JOHNSON: Jay Johnson with Enbridge, [redacted]. Cell phone, [redacted].

MR. STRAUCH: Okay, and I'm Barry Strauch with the NTSB, B-A-R-R-Y, S-T-R-A-U-C-H. My email address is [redacted], and my phone number is area code [redacted].

MR. NICHOLSON: Okay.

BY MR. NICHOLSON:

Q. Jim, just to begin with, since some of us aren't

familiar with your role here at Enbridge, if you could just start by explaining a little bit about your background, your educational background, roles you've had within Enbridge, and then talk about your current position, who you interface with, what you're responsible for, who you report to? Just give us a 101 on your position (indiscernible) --

A. Sure. Sure. So I completed high school here in Canada and went on to work as a control center operator at what at the time was Inner-Prevention Pipelines and became Enbridge, in our Norman Wells Control Center in the Northwest Territories. That was in 1989. I worked in that control center for about 5 years, and then transferred to control center -- to this Control Center, which pre-consolidation, which was about 1994, was four consoles. I worked as an operator and got involved in training projects internally and externally, and in 1997, became training and projects coordinator for the Control Center here. I did that for 3 years. Following that, I alternated between control center operator position and external training and consulting projects for other companies. I returned as training coordinator post-consolidation in 1997 as a training and compliance coordinator, and that's my current position.

Q. Okay. And in your position now, can you talk about a little bit, explain for us what it is you do?

A. Sure. I administer training programs within the Control Center, help to design, deliver, and track training progress and

requirements for our Control Center operators. I'm also involved in helping administer the training programs for shift leads and to -- in an administrative capacity, the CCO Engineering Program. I help to develop and deliver additional training on the side of programs as needed, as needs are identified. I have a staff of, well, one training coordinator that has a sole focus on training and reporting to her on three training facilitator positions. And then outside training, there's compliance (indiscernible) to my rule as well. I'm working towards tracking our compliance obligations, regulatory requirements in the jurisdictions that we operate in, and we have an additional compliance analyst that works in the same group as me. Those are the main areas. What -- is that enough detail or would you like a little more.

Q. I'd like to know more. Is -- what's your involvement with the procedures, (indiscernible) procedures?

A. We have a process, the CCO Procedures and Standards Quality Management System, which I supervise the process for procedures being proposed, reviewed, approved, and distributed to operations staff in the Control Center.

Q. Okay. And if we could just go back. You said you've got -- you're responsible for regulatory compliance. Is that OQ?

A. That was -- that's the main component.

Q. Okay.

A. That was the first element that was sort of part of my role, and now, of course, it's expounded into other areas,

primarily control and management.

Q. Okay. And is that on both the Canadian side and the U.S. side?

A. We're track our obligations on both sides of the border for my group. We ensure that the, you know, most stringent regulations that apply to us are applied across the board. So we don't, within the Control Center, tend to make a distinction between an operator in the U.S. and Canada, we just applied our policies uniformly. But we do track our Canadian specific obligations as well.

Q. The way you're executing that is most stringent is adopted?

A. Yeah, that's our philosophy.

Q. And the most stringent in the Control Center would be which?

A. The PHMSA requirements tend to be more stringent and the -- not to say the Canadian aren't, but we find that the U.S. regulations usually capsulate the requirements from Canada as well.

Q. Okay. All right, I guess I'll pass it off to Barry at this point and I'll let him ask a few questions.

BY MR. STRAUCH:

Q. Okay, let's talk about training.

A. Sure.

Q. And your area of responsibility, does that include

bringing new hires up to speed?

A. Yes.

Q. Okay. And how long have you been in this position, Supervisor for Training and Compliance?

A. In this particular position as a supervisor, well, 3 months --

Q. Three months. Okay.

A. -- and my previous role as coordinator since 2007.

Q. And you (indiscernible) training?

A. Training and compliance.

Q. Okay, that's all. So how many new hires, roughly, trained in -- from the time that you became coordinator till now?

A. Well, I hesitate to give a -- I'd have to check for the exact number, but a fairly large number. If I can approximate, I think it's nearing 100.

Q. Okay. So could you walk me through what type of training a new hire would receive from the time he or she starts till the time he or she is let go or considered good to go?

A. Sure. So we have a structured program consisting of five main phases. Phase I is primarily in the classroom lasting about 2 weeks. It includes onboarding; orientation type activities; and foundational training, usually written modules with exams; some simulations in the first 2 weeks. But it's generally foundation knowledge based on written material.

Phase II is in the Control Center and mostly it's a

structured on-the-job program. There are additional written training modules to be completed during Phase II, but there are predetermined learning objectives that are covered in Phase II by a dedicated mentor. That lasts about usually a moth. It's generally to, you know, continue structured learning, but also to get the first, like I said, the first experience in the Control Center environment.

Phase III, again, structured on-the-job training primarily. Phase III focuses a little more on hands on learning. Again, predetermined learning objectives; some classroom training, primarily if it's a pipeline operator. Really, there are two programs, each with 5 days as pipeline intermit. So Phase III lasts approximately 2 months.

Then Phase IV lasts about 2 months and it's a blend of on-the-job training and classroom time, simulator time. The focus in Phase IV is demonstrating proficiency in normal tasks and recognizing and responding to abnormal conditions, preparing for (indiscernible) qualification.

The fifth phase tends to be a final confirmation of proficiency and that the operator is able to perform independently. (Indiscernible) support, but without intervention. So Phase IV actually lasts about 2 months as well. That takes up to six. Phase V can last -- well, it can be -- if a person demonstrates intervention-free operation for a period of, I believe it's 10 shifts, there's some supplemental training that

goes on after that, and then at the end of Phase V, they are -- become qualified.

At each phase wrap-up we do an assessment type of activity and there may be other activities that are triggered by the phase wrap-ups that may involve other groups, shift leads or people in the room.

Q. Who does the assessment?

A. Well, different groups do different types of assessments. So some assessments are done by training staff. Those tend to be confirmation of completion of exams. Some of the simulator days have, you know, proficiency checks. The shift leads do assessments on a program we call best operating practices. It's a structured list of recommended practices, sort of communicated more broadly than procedures, good habits, that sort of thing. The dedicated mentors assess the structured on-the-job learning objectives and proficiency on specific tasks for that console. Each console has a list of -- we call them check lists. They're basically tasks that the mentor evaluates and records.

Q. How many mentors are there?

A. Well, there's one per trainee. So it depends how many trainees that there are, so, for example, I think we might have approximately 20 trainees right now. There's -- it's one-to-one.

Q. Okay. And who becomes a mentor?

A. We have a selection process where the shift leads

evaluate their training competencies, which include technical and leadership competencies, and based on the assessments of shift leads, we select a mentor to and assign them.

Q. And as I understand, there's two types of shift leads? There's people kind of shift leads and technical shift leads, is that correct?

A. Well, we're transitioning to that arrangement. You know, current state or up till very recently, it's in just been one level of shift (indiscernible).

Q. Which are primarily people-oriented shifts?

A. You know, that's a big part of their job, you know, performance management, those types of things. There is some technical aspects to their (indiscernible).

Q. But the shift leads are okay to determine whether someone is technically qualified to be a mentor?

A. Yes.

Q. Okay.

A. They rate the technical competencies of potential mentors. There are also OQ evaluators, so they're considered by the company as knowledgeable about the technical aspects.

Q. Mentors receive -- what kind of training do mentors receive to become mentors?

A. They receive a classroom session, typically, a four-hour classroom session (indiscernible) program, their responsibilities within programs for training and evaluating, and then ongoing

follow-up, you know, planned follow-up with the Phase wrap-ups, and then ongoing communication with training coordinators and facilitators.

Q. And who does the continuous follow-up evaluations?

A. Well, the follow-up with the mentors?

Q. Yes.

A. That would be the training coordinator. The facilitators work directly with the mentors and support them.

Q. Has it happened that people who have gone through mentor training are asked to leave because the follow-up activities show they really weren't doing what was expected of them or hoped for them?

A. We have occasionally switched mentors, if that's kind of what you're -- now, that may be for several reasons. You know, if the results weren't as expected, progress wasn't as expected, we may change a mentor. You know, regardless of whether that was, you know, sort of deficiency in the mentoring process or maybe something just wasn't working. Maybe a different style was going to be better. But we have changed mentors from time to time.

Q. Okay. And by change, you mean giving the person a different mentor?

A. Yeah.

Q. So those -- have there been mentors who have been taken out of the mentoring program?

A. You know, I don't think that's how we would usually

frame it, like having a program that you would put somebody in and out of. You know, I guess with -- we haven't disqualified somebody from being a future mentor based on past performance since we do have a structured selection process, at least we do now and during the last while have it. So we haven't disqualified anybody from being a mentor.

Q. Okay. The first, Phase I of operator training is 2 weeks of classroom training (indiscernible) foundations. Does that mean somebody stands in front and lectures them? Or, you know, how is the classroom training conducted?

A. Well, some of the elements are written training modules. So some of it's, you know, it's self-paced reading modules and taking exams. Some of it is interacting with the training facilitator on various aspects of either the workplace or their job. So it's sort of a blend of those two.

Q. And what proportion of trainees do not successfully complete the (indiscernible) first phase?

A. I don't think we've had many, or any that I can remember, people who haven't gotten through Phase I successfully.

Q. On the first time?

A. Well, they might not complete every exam on the first attempt, so in our system, we pre-configure a number of attempts that they can do. If they reach that number, then we can (indiscernible) individual assistance to help them understand the material.

Q. And what proportion of people proceed to use individual assistance?

A. It's hard to put a number on it. Individual assistance can take different forms, either (indiscernible), failing an initial exam, or just a question, they can review their answers, getting -- reaching the limit and not -- and then sort of needing that help to continue. I would say -- well, I'd be guessing, but I'd say maybe 10 percent or maybe 20.

Q. Then the second phase, they're introduced to the Control Center and they do both OJT and complete some training materials and then they're introduced -- then they start working with the mentors the first time?

A. That's right.

Q. Okay. The OJT that they have in this phase, is that structured or it's they just work with the mentor and are doing what the mentor would do?

A. It's structured in that there are learning objectives described with -- in what needs to be covered and evaluations step (indiscernible). The topic lends itself to evaluations done and (indiscernible) checked. In addition to those though, there would be things that just come up.

Q. Okay. What would be some of the learning objectives that would address Phase II?

A. Some involve navigating through the (indiscernible) system, things like introduction to CMT system procedures, those

types of introductory phase things. So, you know, for examples, I'd say, yeah, (indiscernible) navigation, looking at data, trending data, things like that.

Q. Okay. And before they go onto Phase III, they take an exam?

A. It's not an exam, it's more of an interview with the training coordinator facilitator. They do a knowledge check at that point of if the person's ready to move on or not, if they've got a basic understanding of, you know, how to access procedures, moving around the screens. And they also contact the shift leads to begin the process of the operating (indiscernible) routine.

Q. The interview sounds kind of like an oral exam.

A. Really, that's what it is. It's basically a check-in to see how the person's doing, see -- and make sure that the programs meet with their needs, and also, you know, they're meeting the needs of the programs so that, you know, the -- and that would include, you know, timelines every -- you know, track timelines, are there any issues with the training, are the objectives complete.

Q. And in Phase III, you -- more OJT, and this takes a few months. What are some of the some of the learning objectives in Phase III?

A. Learning objectives in Phase III would be more procedures (indiscernible) with the tracking. It's sort of a progression building on previous objectives. We have some

introductory work on abnormal operating conditions, which are covered fully in the next phase, but just so a person has some basis of understanding what's happening. There are approximately, oh, I would say a dozen structured learning objectives in Phase II. I could give you the exact -- I can, if you'd like.

Q. Yes.

A. I would say in general though, the main focus is practicing operating with coaching by the mentor.

Q. Okay. And you said primarily with routine operations.

A. Yeah. With some -- yeah, again, with some descriptions of (indiscernible).

Q. And Phase IV is only to get really the abnormal scenarios through the simulator, is that correct?

A. Through the simulator, through the mentor as well --

Q. Okay.

A. -- and that's when they're completing their proficiency checklist for the routine tasks as well.

Q. Okay. What abnormal scenarios do they -- are they (indiscernible) with?

A. So on the simulator --

Q. Yeah.

A. -- we would do leaks in various forms and conditions of structures, column separation, emergency alarms such as fire and gas. Those are the main areas and there's different variations on those (indiscernible).

Q. Okay. Now, when a student is presented with one of these scenarios, is there a basic process that they're taught to go through regardless of the scenario?

A. Yes. So for the exercise itself, we role play. So we, you know, instruct a learner to, you know, do the notifications and information sharing and gathering, just as you would in real life, with -- the facilitator would be anyone that the operator wants them to be -- that they have some criteria for, you know, being successful in simulation (indiscernible) operating procedures, and there are some time criteria as well that will need to be met for eventual certification. So if that answers your question. The structure of what the responses need to be for those AOC, abnormal conditions, are defined in the standard operating procedures.

Q. So they're taught to follow the procedures. And you said something about time also. How does that enter into the training?

A. Well, the final emergency response evaluation is based on time from the appearance of a for instruction. So, for example, for a full pipeline rupture, a pipeline running in steady state, the operating is to respond within one minute of the appearance of the triggers, we call them, or indications of the leak. The timelines get longer as the analysis becomes more complex. So if it's a partial rupture on a running line, I think -- I'd have to double check. I think it's 3 minutes from the

triggers. If it's partial during transitional state or a non-steady state, four minutes, that type of thing. And then if it's a suspected leak in a column separation location, they have up to 10 minutes to assess or respond to it.

Q. Okay. And how do they generally do at the end of this phase?

A. Well, they generally do well. The -- there's a practice session that's along the same lines (indiscernible) beforehand where there's, the training still occurs and there's not an evaluation. And if that one didn't go so well, we might schedule another one of those before going to the evaluation. So by the time we actually do the evaluation, (indiscernible) generally well prepared.

Q. Does the (indiscernible) students in these emergency scenarios misdiagnose the problem that they're presented with?

A. Yes.

Q. How often does that happen?

A. Well, it depends. I think, for example, some different conditions share some of the indications. So, for example, a leak, an obstruction, the downstream of both of those, you're going to see a drop in pressure. So if the individual responds --

Q. Then the response (indiscernible) seen to these different conditions?

A. So if a person responds, correctly shuts down the line immediately and does that. They may have thought it was a leak

(indiscernible) vice versa. From the standpoint of recognition of an emergency and responding quickly, that's okay. We'll review the conditions afterwards and (indiscernible). But sometimes, you know, people may take too long in practicing and analyzing and responding, or sometimes they'll respond when there is no condition just to be (indiscernible) expected in these scenarios. The individual is expecting something to happen, and then they overreact or -- and that's okay too. There's no penalty for that. That's not a fail if they -- so -- but it happens. People do misdiagnose what's going on.

Q. What is a failure?

A. Exceeding the time limit or not responding according to procedures.

Q. And how often does that happen?

A. Maybe 20 percent of the time. Again, we may schedule, before we get to the evaluation, additional practice. I think that reduces the number.

Q. Okay.

A. That might be a 10 or 20 percent incident.

Q. Okay. And then if they sign, they're sent out and kind of someone's looking over their shoulder to see how they do?

A. They still have the supervision during Phase V of a qualified operator and that operator is documenting if they have to intervene.

Q. And you said 10 consecutive shifts of non-intervention

and they're good to go?

A. Yeah. There are some other learning elements in Phase V as well that need to be completed, more written or on-line modules, some other activities as well. But that, you know, is the, I guess the main one. And I should mention that Phase V wrap-up is particularly important because at that point we not only (indiscernible) the other requirements are met, but we also get agreement between the three parties other than the learner. A training staff member, a mentor, and a shift lead all need to agree that not only is the person proficient, but has all of the ingredients and communication skills and everything required to operate independently. That really is the final exam (indiscernible) requirements for (indiscernible).

Q. Does it somebody that somebody does successfully complete 10 consecutive shifts, but the team of three that has the final say will say no, this person still needs additional training?

A. It seems to me that has occurred where a shift lead or a mentor has -- it really takes the form usually of saying, you know, we should do another set or two just to give the person a little more time, and that's what we do.

Q. And what will cause that?

A. Well, it could be a number of things. If an individual is feeling anxious, I guess, would be, you know, could lead to that. If they just don't -- it's in some intangibles, I guess, if

they just don't seem to be functioning quite right, if they're -- with the people they interact with, a general lack of confidence in the person's abilities, they need to (indiscernible).

Q. What percentage of people who start the training complete it and they're sent down to service operators?

A. I would say about 80 to 90 perecent.

Q. Okay. And that 10 to 20 percent who don't complete it, what are the reasons why they didn't complete it?

A. In some cases, it's recognized that the person wasn't making adequate progress in the training or has, perhaps, job fit issues that they need to (indiscernible) parting of the ways. The person is let go. In other conditions, the individual themselves realize it's not a fit for them and they move on, they leave the job. Those are the main --

Q. Training is conducted in front of each person working in a -- on the -- in the control center on their own. Of course, they're talked to (indiscernible) on their own and taught to operate the system on their own, or how is that done?

A. I'm sorry, I -- maybe could you say that again?

Q. Okay. As I understand it, in -- the Control Center is operated by teams of two individuals?

A. Consoles are usually arranged in groups of two.

Q. But is the training conducted in groups of two individuals or singles, single --

A. Single.

Q. -- operators?

A. Single operators.

Q. Okay.

A. So the goal is for the operator to operate independently, but also with support of other team members.

Q. Okay. Do they get any training in working together as a two-operator team?

A. There are elements of that in some of the simulator sessions and on-the-job training. I can't think of an explicit course that we offer or an objective that we offer on that particular topic to (indiscernible).

Q. Now, when will the person leave the OQ to the service (indiscernible)?

A. At the end of the program.

Q. At the end of Phase V?

A. Yeah.

Q. Is there a written test they take as well, or it's they complete the scenarios you've described and they're signed off by the team (indiscernible)?

A. No, it's -- so there is a written component, but it's a separate program from the training program in that training has to be completed to contribute to a qualification. But the qualifications are done by a trained OQ evaluator, operations -- operator qualifications evaluator, and the elements of that are observed proficiency of a task with verbal knowledge checks during

that, a verbal AOC knowledge check on recognized responding to abnormal operating conditions (indiscernible), and then a written test on abnormal operating conditions as well.

Q. And when they complete this written exam and the oral exam, then they're qualified?

A. Then they're qualified.

Q. Okay. What proportion of people don't successfully complete the -- this series of exams to qualify?

A. That would be fairly little. It's normally in the 5 percent range.

Q. Okay. Now, once they complete all of the written exam or if they're signed off, they're qualified, they have passed their OQs and they're qualified, when do they get recurrent training?

A. We -- there are some elements of Phase V that extend past the time we track, so we plan to have them do some refresher training in the first year after they complete. If they haven't done a field visit within the initial time period, they would do that. A field visit is part of the program.

Q. That would be visit one of the stations?

A. Yeah. Then there's annual emergency response training on the simulator for all operators and shift leads.

Q. Everybody gets that?

A. Yeah.

Q. Do they get the same emergency?

A. No. They're varied. There are some criteria for what needs to be included in each session, but they're varied from session to session and person to person so that, you know, they're fresh and --

Q. Is the ability to distinguish between a column separation and a leak one of the emergency scenarios they might get?

A. The response to a suspected column separation is -- or maybe the best way to put it is that they are presented with column separations and leaks. The difference in the response is the number of indications in a leak and the time period, time duration involved. So both conditions need to be shut down, but we don't say ahead of time or anything what condition they'll see.

Q. So let's say in a person who's qualified and then he or she continues operating for 5 years, within a 5 year period, how many times will that person be presented with a simulated leak scenario and their response to that will be evaluated?

A. They're have at least five turns at the simulator and those turns would be either leaks or obstructions. We tend to do more leaks than obstructions, so three or four would be the average.

Q. But under this system, it's possible that someone can go 5 years and not be presented with an emergency leak (indiscernible) or with a leak scenario?

A. It wouldn't be possible for them not to see one. So the

way that emergency response sessions are is you may have a group of six people and three simulators and -- or six people and (indiscernible) simulators. Each person takes (indiscernible). And so within those sessions, they would at least see one leak and be part of the role playing and analysis of that leak and the debriefing afterwards. They may not be sitting in the -- when they're sitting -- when it's their turn to sit in the chair that particular year, they may see a leak order instruction. So I suppose it is theoretically possible, yeah, for each of the 5 years to operate the simulator construction and just see leaks, but it's not possible for them to not see any leaks at all.

Q. Since the Marshall accident, have there been any changes to this training program that you've just discussed?

A. Yes, there have been a number of changes. I think, most significantly, we're increasing the amount of annual training going from one emergency response session per year to four scheduled training sessions per year. Two of them will be emergency response training with a simulator component, and two of the other sessions would be -- the other two sessions would be human factors, including fatigue and lessons learned type of session. The other would be about hydraulics. So that would be a minimum of four classroom sessions scheduled per year with plans to increase that number as we go. We have -- we did conduct additional hydraulics training this year. Two more classroom days were added this year for all pipeline operators. We've had added

column separation analysis training.

Q. Excuse me.

A. We're developing additional material balance system training. I've got other packages that have --

Q. And each of these, one could argue, was identified as an issue in the Marshall accident, but not the human factors part.

A. The human factors part has been, and particularly fatigue, has been appropriated in our programs in various ways. So partly as an identified need to increase our training and partly in response to the CRM rule that is partially in effect -- well, the procedures are in effect, so we -- our plan is to reflect that as well for fatigue training.

Q. But it's not so much that this was identified as issue with the Marshall accident so much as there was a change that required this kind of training?

A. Yeah. Again, it's something that I'd say we were doing already. We just want to make sure that we schedule it at a (indiscernible).

Q. Okay. Do you also conduct non-technical training of leadership training?

A. Not from within my role. Leadership training tends -- well, it generally comes from our human resources operational effectiveness.

Q. So you wouldn't be involved with that?

A. We do have leadership elements in our shift lead

training program --

Q. Okay.

A. -- that are specific for shift leads.

Q. Okay. And then is that also applied to supervisory and mentor training as well and that'll be primarily done through the HR?

A. Yeah.

UNIDENTIFIED SPEAKER: And we could -- INR, we could you a list of that training that's offered, if you'd like.

MR. STRAUCH: Yeah, if you can, just a description of the --

BY MR. STRAUCH:

Q. Let's go back to the emergency scenarios. What do you see as the key elements that you expect people to take away from emergency scenario training both initial and recurrent?

A. Well, the structure approach to recognition and decision making and response, adherence to procedures, team work in terms of getting help for analysis, responding in a timely fashion.

Q. Of those, which do you consider most important? You identified responding in a timely manner, analysis, problem-solving procedures, and so on. Is there any one that you strive to teach in terms of the highest priority in training or they're all (indiscernible)?

A. Well, the focus tends to be on procedures because the other elements that I mentioned tend -- are, in a way, embedded

within those procedures. So, for example, the time limits are included in the procedures for different types of conditions. So that tends to be the focus area.

Q. But aren't -- wouldn't procedures be secondary to problem solving and analysis? I mean, if you don't -- if you haven't identified the situation correctly, then there's a real chance that you're following the wrong procedures.

A. There is. But I think the way the procedures are written is that if you have indications of a problem that could be considered an emergency, the instructions are to shut down. You don't need to know exactly what it is. You can finish your analysis after the shutdown. You just need to know that something unexpected and abnormal is occurring and you (indiscernible) participant and that that's a requirement.

Q. Okay. But when you say procedures, what you really mean is shut down and then analyze it --

A. Uh-huh.

Q. -- if in doubt?

A. Right.

UNIDENTIFIED SPEAKER: Wouldn't the procedures also sometimes lead to telling you what that -- it kind of walks you into the problem solving at the same time it takes you to shutting the line down. I know some of the procedures which you'll be able to see, if it's any of these things shut down and it will tell you.

MR. STRAUCH: Okay.

MR. JOHNSTON: So for example, if you have one (indiscernible), we call them, indication, but have normal unexplained event, you have 10 minutes to -- up to 10 minutes to have analyze and two -- for two you have 10 minutes, but three you don't have 10 minutes (indiscernible).

BY MR. STRAUCH:

Q. Okay. And as part of your development -- well, let me rephrase the question. How do you determine the particular abnormal operating conditions to present to the students? How are they developed? What makes you select this particular scenario and not another one?

A. Primarily risk and experience. So the high-risk scenario for weeks get top priority, obstructions also. (Indiscernible) do with pressure, if possible, and firing down some (indiscernible) as well.

Q. Yeah. Do you go through accident reports and look for scenarios that way?

A. We do. Typically, we include at least one detailed incident review in a GRT session. So we may select a published accident report and go through the events, you know, list all of the contributing factors, illustrate how we're moving one of those factors and, quite likely, avoided the accident and use that type of format.

Q. Could you describe some of the accidents that you've

used in your scenarios?

A. We've used the accident at Reedy River (indiscernible), among others. We tend to use the NTSB accident reports as a basis for those. We've also reviewed on the pick.

Q. Okay. What about Canadian accident reports, CTSB?

A. Less so. Less so. We -- I think the -- we just -- the format, we're a little accustomed to the NTSB format (indiscernible) --

Q. Okay. Do you present elements with the Marshall accident (indiscernible)?

A. Elements, yes, in that we've now included a leak on shutdown as one of the requirements for each ERT session which we didn't explicitly state before. We haven't gone to the steps of trying to recreate it partially because there may be more value in seeing the same element in a different context anyway.

Q. Okay. Okay. We're going to (indiscernible) -- we're going to talk to someone else about procedures which (indiscernible).

MR. NICHOLSON: Jim is our man for procedures, is that not true?

UNIDENTIFIED SPEAKER: That's (indiscernible).

MR. STRAUCH: Why don't we shift geers now and go into procedures.

MR. NICHOLSON: Do we want to give these people a chance to --

MR. STRAUCH: Sure, yeah. Why don't we (indiscernible).
MR. NICHOLSON: -- finish up on the training side?
MR. STRAUCH: Yeah.
MR. PIERZINA: Yeah, maybe that'll be (indiscernible).
MR. NICHOLSON: It looks Brian's ready to go.
BY MR. PIERZINA:

Q. Oh, and I don't have that much, just a couple of things. What -- in the five phases of the training, what phase covers the shift change procedures, the rundown?

A. I believe it's Phase III where the individual is -- starts to conduct the shift change and is evaluated on their performance. It's also an element of the best offering practicing practices program that we talked about a little earlier.

Q. All right. Maybe I should have asked this question first. So at some point, an individual is being trained and the training is fairly generic, and so at some point, the training deviates for terminals versus pipelines, right?

A. That's at the very beginning.

Q. Okay. So it'll be at the very phase --

A. Phase I.

Q. Phase I?

A. Uh-huh.

Q. Phase I, you're going down the terminal path or by plane?

A. Yes. Some consoles have a mix of both. In that case,

that would do both.

Q. Okay. And then at some point, the training becomes specific to a pipeline or maybe to a console. Which would it be?

A. A console --

Q. Okay.

A. -- that would be -- have pipeline specific elements. So, for example, in the console that we were looking at on 6-17, we'd have a specific efficiency checklist for that console. So that would be the main difference.

Q. Okay. And what phase of the training does that become solely geared towards a console?

A. Well, in reality, it starts in Phase II right away because they're with the dedicated mentor that just works at that console. So that's what they're being exposed to day after day.

Q. All right.

A. Yeah.

Q. Okay. So we've heard -- you mentioned, you've mentioned best operating practices or Kurt Gosen (ph.) mentioned best operating practices. Is there a distinguishment in your mind between best operating practices and procedures?

A. I -- to me, there is in that best operating practices are less at a task level and they're more about good work habits. So, you know, best operating practices are categorized in -- according to what you do when you first come in, you know, the kinds of activities you're doing, the kinds of checks and things

you're looking at, and then in different types of operations (indiscernible), you know, the kinds of activities that are good to do that, you know, checking things and, and then in maybe offset conditions, and then preparing for the end of shift. It's more about really effective work habits than executing particular operational tasks. So, to me, that's the difference. Best practice is the good habits.

Q. Okay. So -- now, you're the procedure guy. Maybe that's something that, you know -- and I don't want to segue into that yet, but -- so procedures have a well-defined process for development, for modification, you know, a review process involving many different departments. What type of process do the best operating practices, you know, what do they get subjected to?

A. Right. The best operating practice is fairly new and the process for development of those was identifying basically best practitioners in a way, identifying some operators that exhibited really good really work habits and didn't seem to have a lot of issues, asking them to -- asking them what they do that makes them perform well, capturing that and working it into a presentable format for reference in a checklist. So it was really that development came directly from operators. So in terms of updating, we don't have (indiscernible) about that kind of established process for updating that. We do have, I guess, workshops from time to time thinking about best operating practices, but they tend to be fairly common sense things and they

don't change that much, to be honest with you.

Q. Okay. And the best operating practices are written?

A. Yes.

Q. Are they line specific?

A. They're pipeline or terminal.

Q. Okay.

A. So they're best operating practices for pipelines and for terminals.

Q. Okay. Are they regulated?

A. Are they regulated?

UNIDENTIFIED SPEAKER: You need to define regulated.

MR. PIERZINA: By (indiscernible) 195.

MS. BUTLER: Are the facilities that they're on or are the procedures (indiscernible)?

MR. PIERZINA: The best --

BY MR. PIERZINA:

Q. All right, so there's a -- I can see a fine line between best operating practices and DOT procedures --

A. Uh-huh.

Q. -- and I want -- I, you know, I would be concerned that best operating -- you know, so that your DOT procedures are kind of generic and maybe not necessarily -- you know, they address code requirements, but you can't necessarily do a task by them, but your best operating practices, you know, detail the task.

A. Oh.

UNIDENTIFIED SPEAKER: I would say almost the opposite.

MR. JOHNSTON: Yeah, yeah. So in best operating practices, it might be a description of, you know, when you first come in, you should do an overall inventory of all your screens and, you know, for preparing for shift changes to start, you know, writing things down throughout the shift rather than waiting till the very end, things like that that are very generic.

BY MR. PIERZINA:

Q. Okay. And they are written, right?

A. Yeah.

Q. Can we get that as an IR, please?

A. Sure.

MR. BUTLER: You took the words right out of my mouth.

MR. PIERZINA: Oh, yeah.

UNIDENTIFIED SPEAKER: Most likely, you'll probably go in and show them and also?

MR. JOHNSTON: Yeah, I'd be happy to.

MR. PIERZINA: Okay.

UNIDENTIFIED SPEAKER: We'll still get them for you though.

BY MR. PIERZINA:

Q. And just so you know, I've seen it the opposite --

A. Yeah.

Q. -- where, you know -- for instance, doing a valve inspection, you know, there's procedure kind of generic for doing

a valve inspection, but the actual work is done by best operating practice which, you know, is really and truly the procedure, you know.

A. Yeah.

Q. And so, I appreciate your help in clarifying that --

A. Sure, yeah.

Q. -- because that would be a concern of mine is that you have a less detailed procedure and then this is how we really do it, you know --

A. Yeah.

Q. -- because that leads to problems.

A. Yeah, sure.

MS. BUTLER: (Indiscernible).

MR. PIERZINA: Okay, we'll get it.

MS. BUTLER: Okay.

BY MS. BUTLER:

Q. Common right-of-way and priorities. We heard out there today that there is alarming that goes on between consoles if they're on a common right-of-way and they hit a priority 8, I believe.

A. Uh-huh.

Q. Is that something you train on?

A. Yes, because the fire alarm is one of the things we train on and that particularly involves a shutdown of all the lines on the right-of-way that have a station on their line. So

we need to make sure that the proper notifications are happening in our role playing for that evaluation.

Q. Do you train on all of the different priorities or is that something they get on the board?

A. There are a couple of places where it's embedded in the program. In Phase I, you know, there's some material on alarms (indiscernible) and including the SCADA operator's manual which describes them. That's the main reference for what they are and ongoing reinforcement of that when they're on board.

Q. Okay. I know that you've added training modules since Marshall. Have you increased the number of controllers?

A. We have new controllers since Marshall.

Q. And instead of saying it --

UNIDENTIFIED SPEAKER: Number-wise?

MS. BUTLER: Yeah. Instead of saying new, have you increased the number? I know we added a console for line 3, I think. We split out line 3, so that would add controllers. Have we --

UNIDENTIFIED SPEAKER: Operators during a shift --

MS. BUTLER: yes.

UNIDENTIFIED SPEAKER: -- has that number gone up? Maybe you can't answer that one.

MR. JOHNSTON: Well, we did add -- not since Marshall, I don't believe. So line 3 went to an existing console.

BY MS. BUTLER:

Q. Oh, not a new one? It just traded?
A. Right.
Q. It went off of line 6B console and went to a different one?
A. Yeah.
Q. Okay. I misunderstood that. Thank you for the clarification.
A. Yeah.
UNIDENTIFIED SPEAKER: Where to --
UNIDENTIFIED SPEAKER: It doesn't mean we haven't, but maybe Jim's not the right one to address that. We could probably ask that tomorrow of Kurt --
MS. BUTLER: Okay.
UNIDENTIFIED SPEAKER: -- when we're in the Control Center. He would be upset if we didn't ask (indiscernible).
MS. BUTLER:
Q. I just assumed that they would have to go through the training program, so you would know whether you had increased the total number for the control room or not.
A. Right. So we did in moving line 3 over to an existing console and cross-trained those operators on line 3 operation. Yeah.
Q. So you're really not aware of whether we have or haven't?
A. I'd have -- I'd --

Q. Okay.

A. Well, there's quite a bit of (indiscernible).

Q. That's (indiscernible).

A. I don't think we have, but we'd better confirm that.

Q. Okay. All right.

UNIDENTIFIED SPEAKER: Is that an IR or you just want to ask that? It's a pretty easy IR.

MS. BUTLER: Right.

UNIDENTIFIED SPEAKER: Okay.

MS. BUTLER: Okay, great. I'd also like an IR, while you're writing them down, for your SCADA operations management.

BY MS. BUTLER:

Q. Okay, is there a module that is actually trained or part of the training package regarding how to avoid column separation?

A. Column separation appears in four of the written modules and the, I guess the knowledge that the pressure has to be maintained above (indiscernible) pressure is embedded in that training. The proficiency -- I should it put this -- within procedures we have minimum holding pressures that are established to help an operator avoid column separation, particularly in the absence of a midline pressure transmitter at the column separation location. But even if there is one, minimum holding pressure is our -- established in the procedures database.

In terms of the on-the-job training, that would be, you know, something the mentor would work with them on, and then the

process is to -- I mean, running lines (indiscernible) for shutdown as well.

Q. So earlier today, we had some conversation around the fact that column separations can be avoided by keeping a higher pressure on the line in general and timing of activities, so do you discuss those in combination together in your training anywhere as methods by which you can avoid column separation?

A. I would say that timing tends to be line specific based on station spacing and elevation profile and, as such, it tends to be something that is covered with the mentor on the job. As the person is practicing shutdowns, that, the mentor would coach and then evaluate on their timing (indiscernible).

Q. Okay. Consoles are different, so do you develop specific modules or do you rely on the mentor and on the board to cover those differences?

A. A mentor and the on-the-job is really where we look for the console specific -- line specific training.

Q. Is there anything specific that you do regarding training that's not on the board that would take into account elements that are more difficult? So, for example, it's my understanding that line 6B's console and its grouping are two of the more difficult consoles in the room to run. That's based off of interview information. Is there anything that you do specific to those consoles regarding training?

A. We have dedicated simulators for lines -- and when I say

dedicated, I mean they're SCADA integrated, they're full-fledged trainers, I guess you'd say --

Q. Okay.

A. -- simulator systems for lines 4 and 6. Not -- I guess not -- we don't have that level of custom trainers for every line. That's one thing that we do so the person can practice when there's nothing going on. The portable trainer that can be rolled into the room, people can use that on shift. So I think that's a key element to letting people practice and as part of how we identify which trainer is to be accustomed. When I say trainer, I mean a simulator --

Q. Right.

A. -- that has SCADA hooked up to it.

Q. I grabbed that --

A. Okay.

Q. -- when you were talking about you had line 4 and line 6 pretty specifically modeled.

A. Right.

Q. Is that fair?

A. Yes.

Q. But you wouldn't necessarily have the other elements on that console, like line 17?

A. Yeah, we have added line 17 to be integrated with line 6.

Q. Okay. Okay.

UNIDENTIFIED SPEAKER: Would you say those are chosen because they're more difficult and would challenge the person training on them?

MR. JOHNSTON: Yes, I would. Because, you know, in the past, we have gone full-SCADA integrated. We've done some less complex more easy to operate pipelines and we find if we focus on the more difficult ones, they can always stand in, in a way, for the easier ones, so it's a factor in choosing this.

BY MS. BUTLER:

Q. And does everybody go through that or just people assigned to those consoles?

A. Everyone goes through simulator training, but for consoles that don't have their own custom trainer, we pick the next closest one and maybe either move some complexity or, you know, bypass some stations and that sort of thing.

Q. So let me make sure I paraphrase this correctly. Tell me if I'm wrong.

A. Okay.

Q. Not everyone that becomes a controller goes through the training package, goes through simulations that would be applicable to 4 and 6, it's a subset?

A. I think it may be a little more accurate to say that not every console has a dedicated custom simulator system that --

Q. Okay.

A. -- exactly mimics their line.

Q. Okay, fair. So based on that last statement, to clarify it one more time, would everyone that's in the training group at any one time eventually go through line 4 and line 6 simulations?

A. Yes, if that's the closest simulator for them. For example, we have also have custom simulators for our Athabasca system. We have a dedicated system trainer for line 1 and line 5 and line 21 and that sometimes develop a custom trainer. They may not be fully SCADA integrated, but have a mockup user interface, similar user interface for future pipelines, like the Southern Lights line, which was the line 13 reverse. So they got a custom trainer before they -- before the line was operational.

Q. Okay, so Southern Lights, let's use that as an example. You've resent pipeline, developed a new simulator. Do they go through line 4 and 6 or just did they stay customized to Southern Lights?

A. We gave them both. So we said --

Q. Okay.

A. -- let's -- you guys use your custom Southern Light trainer to the windows interface, so it still (indiscernible) sort of looks like and acts like the SCADA system. Well, let's also give you line 4 because it's got the full SCADA package. I can't remember if it was 4 or 6, but a fully SCADA integrated --

Q. Okay.

A. -- trainer system using (indiscernible).

Q. So I'm going to say there can be combinations.

A. Yeah.

Q. Is that fair?

A. Yep.

Q. All right. Historical trends, do you give any shift lead training on historical trends and what to look for?

A. Because it's in the operator program and all the shift leads were previous operators, we don't give it again, I don't believe, in the shift lead program other than they do get any additional module called Transient and Incident Analysis which has some, I believe, you know, elements like that and it also serves as a refresher for incident analysis for them.

Q. So in the -- all right, so let me back up and rephrase it. Shift leads have previously been operators, but they've not necessarily operated every console in the room, so shift leads may not recognize what a typical trend would look like specific to pressures along the specific pipeline that they are actually overseeing. Is there anything in the training package that compensates for that lack of training?

A. What we do, I guess, to -- it doesn't take that form where we don't have an objective that focuses on trends that takes that form. We have an element in the shifting program that involves working at a selection of different consoles within the room so they become more familiar with what's happening at each one. So I guess that's the approach that we would take for (indiscernible).

Q. Okay. All right. When you mentioned that there is timing involved in one of the things you monitor for that someone's successfully completing a phase -- I believe I heard that -- was that just associated with, say, a 10-minute rule or was that associated with the time it takes you to respond to an alarm, the time it takes you to say set up a batch? Is it various elements of time?

A. So I think when I speaking about timing before, in my mind, I was thinking of pipelines, startups, and shutdowns and, you know, timing the unit stops and starts in order to have the optimum result.

Q. Okay. So you weren't necessarily looking at the amount of time it takes you to diagnose a problem?

A. The time it takes to decision make or diagnose a problem are evaluated and tracked in the emergency response exercises in the simulations.

Q. Okay. Regarding your timing -- your -- excuse me. Regarding your training associated with the 10-minute rule, does your training emphasize that they need to start a timer on the board?

A. Yes.

Q. No leadership training already that -- you don't do that right? You mentioned that in answering one of these questions.

UNIDENTIFIED SPEAKER: We could do it, just not through Jim's (indiscernible).

MR. BUTLER: Right, just through someone else or a different department.

BY MS. BUTLER:

Q. Do you monitor after or during someone's on-the-board training the number of stops of the pipeline versus what you think would have been required?

A. So the number of routines shutdowns that occur on the job?

Q. No. I'm thinking more they've got into a situation, they're not sure what to do, they stop the pipeline, and then you go back and review that. Do you track the number of times that that might occur when it wasn't necessarily what you view as the appropriate action?

A. Not from the training group perspective.

Q. Okay. Okay. Does your training require a member of the public to confirm that there's an odor before they think leak?

A. No.

Q. Is there anything that you would point to in your training that emphasizes the point to think leak first?

A. Yes. The --

Q. Can you explain for us?

A. Yeah.

UNIDENTIFIED SPEAKER: What? That wasn't good enough?

BY MS. BUTLER:

Q. That's great. I want to understand what it is.

A. Yeah. The conditions that we call leak triggers, abnormal and unexplained, that could cover a broad spectrum of conditions that we categorize as explicit leak triggers. The -- and just the presence of even one leak trigger requiring a shutdown as a basis to, you know -- for one to complete the evaluation in their simulation session and to be carried on in their job is, I believe, when we would do that. The -- we use a decision making model with a flow chart of the thought process when something occurs. The first box is the question is a leak trigger. The, I guess the flow of the procedure is that there's a direct need to go to shut down rather than go through a particularly drawn out analysis process or get information process emphasizes the need to think leak first, those types of things. So in --

Q. Yeah.

A. I'd say probably a key reference is the decision making motto with that initial thought which appears in many of the written modules, as well as classroom training.

Q. Do you have it in any power points or routinely talk think leak first, think leak first? Do you emphasize that?

A. I just developed a training program and I wrote those very words and distributed it.

Q. But prior to Marshall (indiscernible)?

A. Prior to Marshall, in those words, it tends to be maybe an informal motto, it tends to be, again, a decision making motto,

something we want to make, I guess, more explicit in our (indiscernible).

Q. Are controllers trained specifically to shut down if their supervisors tell them to start up or trained to say, no, I'm not going to because I'm not comfortable X? Is that something you emphasize in your training?

A. We do --

Q. (Indiscernible).

A. -- more so nowadays (indiscernible).

Q. Okay. So now you do?

A. Yeah. And in the past, we did, maybe not to the extent that we do now. So, for example, in our simulations as, you know, a facilitator would role play an unqualified person, whether it's a supervisor somebody else, you know, routinely, we would say, you know tell them not to shut down and make sure that they shut down anyway. But we have also explicitly included in our hydraulics training that we recently conducted and in other places as well.

Q. Okay. Do you have -- do you do any training for the MBS (indiscernible)?

A. We're just in the process of developing a joint training program. That's the matter of fact program that I just alluded to earlier with think leak first, and then the audience would be analysts, MBS analysts on pipeline operation (indiscernible).

Q. So you will be doing that?

A. Yes.

UNIDENTFIED SPEAKER: Who are you working with on that?

MR. JOHNSTON: Tina Czykowski (ph.) is my counterpart and PSLD. She is doing the technical review from (indiscernible) perspective now.

BY MS. BUTLER:

Q. Is there any specific list of things that would cause you lose your qualification as a controller or a shift lead, for that matter?

A. Yeah, there are. They're outlined in our OQ plan and I think, most concisely, in our 15.2 Form for Reassessment Review of Operator Qualifications, criteria that could lead to suspension of qualification.

MS. BUTLER: An IR for 15.2 Form.

MR. JOHNSTON: Sorry.

UNIDENTIFIED SPEAKER: No, I just started writing. You spit out numbers, it's going to cost me.

BY MS. BUTLER:

Q. 15.2. And then I would guess -- is there a specific thing that would cause you to go through requalification as opposed to disqualification?

A. Right. Yeah. So, of course, the time limit or a prolonged period away from the console (indiscernible) or (indiscernible).

Q. Is that specified anywhere?

A. Yes. We have a couple of places where we have prolonged

period of waiting documented as a reason for requalification, one being the Enbridge OQ plan, one being our console eligibility -- console assignment eligibility criteria, which covers not just a period of waiting, but if you're await from a console, how long you're can be away and still be assigned to that console.

Q. Was that in place prior to Marshall?

A. That eligibility criteria?

Q. Uh-huh.

A. No, that's new.

Q. Okay. Is that the result of the CRM (indiscernible)?

A. It's related to that, yeah.

Q. Okay.

A. We have also considered suspension of OQ if an ERT simulator evaluation isn't successfully completed. So if an individual doesn't shut down within the established time period or according to procedures, we would suspend their qualifications and take steps to requalify them.

MR. NICHOLSON: Are we finished?

Jay, have you got anything?

MR. JOHNSON: Actually, I snuck in my questions as we went along, so --

MR. NICHOLSON: Smart.

UNIDENTIFIED SPEAKER: I was going to shift over -- just follow up a little bit and shift over to procedures, but I was going to ask do you want to take a break at this point or --

MR. NICHOLSON: What I'm going to -- well, if we want to take break, and I'll think I'll turn Paula loose because we're not going to get to her night.

UNIDENTIFIED: Well, why don't we just take a short break.

MR. NICHOLSON: Sure.

MR. JOHNSTON: Okay.

UNIDENTIFIED SPEAKER: If you go anywhere --

MR. NICHOLSON: Okay, we'll take a break. Off the record.

(Off the record.)

(On the record.)

BY UNIDENTIFIED SPEAKER:

Q. You also (indiscernible) talked about, if I go back to this, you're given annually for operators who are qualified?

A. They're given initially at the end of the initial training, and then within every 3 years.

Q. Every 3 years. And regardless, every year now, post-Marshall, every operator will get several different kinds of emergency scenarios that they will have to go through?

A. Yeah. So we had annual emergency training going way back. Going forward, now we'll have two ERT trainings per year and additional scheduled training as well.

Q. What is the -- what do operators have to do to qualify on the, I guess, the tri-annual OQ? What do they have to -- what

are they tested on and what (indiscernible)?

A. So they're -- they need to demonstrate proficiency on each of their tasks. So cover tasks again identified according to the OQ rule, and then -- and so they need to demonstrate proficiency in the actual performance of that task both demonstrating on the job or in simulation, but typically on the job; verbal description of -- that reinforces the demonstration of proficiency of that task; verbal description of recognition response to abnormal conditions that could occur and that could be tasked; and then a written evaluation of the same.

Q. Okay. And who administers the oral parts of this OQ?

A. Shift leads.

Q. All right. And does everyone take the same written exam?

A. No. The shift lead can pick from the list of abnormal operating conditions and choose one that, you know, is actually applicable to that task and --

Q. Okay. How many questions are on the written exam?

A. At least two.

Q. Two? And what's the nature of the question? Is it an open-ended question or is it multiple choice, true/false?

A. Yeah. So the format would be something like how would you recognize and respond to (indiscernible) deviation and flow (indiscernible) task.

Q. I see. Now, the number of -- the frequency of the OQs

every three, that's dictated by the rules, is that correct?

A. Yes.

Q. What about the number of questions on the test? Is that dictated by any rules or that's your choice?

A. I don't know that it's dictated by the rules. It's dictated by our OQ plan that addresses the rule. I mean, that's what we go by in terms of --

Q. Okay. And by the OQ plan, you mean the three things that you just described, the observation of performance, the oral test, and the written test?

A. So the OQ plan that I'm referring to is a document that is our plan to comply with the rule.

Q. And it's reviewed by PHMSA or NEB?

A. Yes. PHMSA.

UNIDENTIFIED SPEAKER: Not -- yeah. Not NEB.

UNIDENTIFIED SPEAKER: Not NEB?

UNIDENTIFIED SPEAKER: PHMSA did a team OQ audit 2 years ago on both the CCO program and the one for our maintenance personnel (indiscernible).

UNIDENTIFIED SPEAKER: And we'll cover some of that, I guess, when we talk to --

UNIDENTIFIED SPEAKER: Okay.

UNIDENTIFIED SPEAKER: -- the other person.

BY UNIDENTIFIED SPEAKER:

Q. What percentage of operators fail to successfully

complete the OQ once they're qualified?

A. A very low number fail to complete it.

Q. Successfully?

A. Yeah.

Q. There are how many operators here?

A. Maybe about 140 (indiscernible) shift leads.

Q. So it's about 45 or so every year that would -- how does that -- so in any 3-year period, how many fail to qualify?'

A. Other than initial qualification --

Q. Yes.

A. -- I can't think of an occasion where someone's failed to qualify.

Q. Okay. And is that because the operator is so knowledgeable or because the OQs are -- don't adequately cover what they're supposed to cover? (Indiscernible) two (indiscernible) because people aren't very qualified.

A. I think it's because we do the annual exercises that help prepare people for the AOC part of the --

Q. Okay. All right, I'm going to shift now into procedures. And some of this Karen should cover (indiscernible) training, so just bear with me if I cover stuff you've already covered. What's the worst scenario that could occur to -- that a pipeline operator could reasonably say -- most -- by worst I mean that would cause the greatest damage from the lost (indiscernible)?

A. So, a rupture is the worst condition --

Q. Okay, a rupture.

A. -- which could be made worse by fires.

Q. Okay. Was Marshall a rupture?

A. Marshall was a rupture.

Q. So Marshall was the most serious you could face out of the rupture and the fire?

A. (No audible response.)

Q. Okay. So, of course, you've got to have the rupture first before you have the fire?

A. Generally, yeah.

Q. Okay. And this rupture can also be disguised to an operator as a column separation?

A. They're difficult to distinguish because it's difficult to distinguish between the two conditions.

Q. Okay. Are there are any conditions that would be difficult to distinguish that would be considered serious?

A. Well, as I mentioned a little earlier, the indication of an obstruction and a leak can be similar downstream (indiscernible).

Q. Okay. So in order to verify that it's a rupture and not a column separation, what does an operator have to do?

A. The operator investigates current and historic lines and conditions for indications or rupture and, based on the results of that investigation, may determine that it's a rupture rather than

a column separation. These indicators, if they're sudden and unexplained, have a, what we call a weak signature, or it doesn't look like a leak. But in either condition, the -- our run line timing is 10 minutes in the event of either condition to (indiscernible).

Q. Okay. And what tools does the operator have to determine this one way or the other?

A. So the operator has historical SCADA data which is a primary source of information to look for these leak triggers. So if they have indicated one -- if they've identified one possible indication, they can look back in time and upstream and downstream for others. Because if they have one or two indications, they do have the 10 minutes, but they need to make sure that they don't three or more. But in that case, they don't have 10 minutes (indiscernible).

Q. And what would these indications be?

A. They could be sudden decreases in pressure; sudden -- and these are unexplained -- increases or decreases in (indiscernible); sudden explained change in control, and what that would mean is PCV, pressure control valve, position or VFD speed that's not expected; unit shutting down unexpectedly; an MBS alarm (indiscernible) trigger; those kinds of things.

Q. Now, are any of those specific to leaks or are they common to both leaks and column separations, those triggers?

A. With a column separation, you may not have a trigger.

It may be something that evolves more gradually and you don't have this sudden, abnormal, unexplained indication of a leak.

Q. Uh-huh. Now, is the operator expected to reach this decision on his own or does he have other people that he's expected to contact?

A. The operator is expected to get some help and notify. That decision, the analysis, will be the responsibility of the operator. So, yes, there's an expectation to go get some help and look for any historical data and notify the shift leads so that they're in the loop, but it's the authority and the responsibility of the line operator.

Q. Okay. So let's just say MBS alarm sounds. According to procedures that were in place at the time of the accident, what does an operator do?

A. The operator notifies shift lead. And I'd have to refer to, you know, procedure at the time for the specifics, but either the operator or shift lead would from there notify the MBS analyst (indiscernible) and the analyst would go through an assessment of the alarm and provide an assessment of the alarm, was it valid or temporary to the operator.

Q. And what would be the nature of the MBS analyst's input to the operator? What form could -- what forms could it take?

A. So the analyst could, at the time of the accident --

Q. At the time of the alarm?

A. Sir?

Q. Not at the alarm?

A. At the time of the alarm?

Q. Yeah, and at the time of the accident.

A. Right. Before giving a response, the analyst would analyze the alarm.

Q. Uh-huh.

A. At the end of that analysis, the responses can include invalid alarm, temporary alarm (indiscernible) clear also, and at the time of the accident, column separation is also sort of a response.

Q. Has this changed since the accident? Do you know what an MBS analyst can provide in an (indiscernible)?

A. The CCO procedure has changed to be in closer alignment with those responses and we currently have new procedures at the later stages of the review process that, I guess, add more clarity to what that communication is what goes behind as part of that analysis, how that analysis is determined.

Q. The MBS analyst? And by clarity, what do you mean?

A. By clarity in the -- and this is a draft procedure. It's --

Q. So that means it's not finalized yet?

A. No. It's reached the end of its minimum review duration. We've gotten operator feedback and MBS analyst feedback and it's (indiscernible) going to go through.

Q. All right.

A. The -- so the responses would be valid alarm, invalid alarm, or analysis not complete. And then criteria for determining validating or invalidating alarm will now be published to the operator.

Q. Now, as I understand it, the requirement is that if there's any doubt, shut the line down.

A. That's it in a nutshell, yeah.

Q. Okay. And what effect will that have on alarm?

A. On the alarm?

Q. Yes.

A. Well, the alarm may clear. The alarm itself may clear. Now we're looking at other conditions other than the alarm, particularly column separation. So the response is to shut down the line. What happens after that to the alarm is less important than, you know, conducting the shutdown in response to the alarm.

Q. But, of course, if you're asking somebody to analyze an alarm and the alarm shuts down because of the condition that generated the alarm, that caused the alarm to cease, won't that -- what would that person's evaluation be on?

A. So if the question if the alarm has ceased --

Q. Because you're asking the MBS analyst to analyze an alarm, but the condition that generated the alarm caused the alarm to cease and one real interpretation of that is that condition that generated the alarm cleared because the alarm was already generated. So how can the analyst analyze an alarm that may very

well have cleared not because the condition ended, but because the alarm shut down as a result of the condition?

A. At that point, the response has been executed to the alarm. We're no longer, I guess, needing to analyze the alarm itself anymore because we responded to it already. Does that make -- I'm sorry. Does that answer the question at all?

Q. Yes, sir.

UNIDENTIFIED SPEAKER: And we're talking about MBS response? Are we talking -- so if that's --

UNIDENTIFIED SPEAKER: MBS alarm.

UNIDENTIFIED SPEAKER: Right.

UNIDENTIFIED SPEAKER: Yes.

UNIDENTIFIED SPEAKER: It may be a column separation and it may be a leak.

BY UNIDENTIFIED SPEAKER:

Q. Yeah. So those procedures are actually MBS procedures which are outside of your realm, correct?

A. Right. So I don't have direct --

Q. Right.

A. -- responsibility for MBS procedures.

Q. Okay. Well, I guess I was focusing on (indiscernible).

A. Okay. You know, we do have established a stronger stakeholder relationship in the development of those MBS procedures, but, really, you did. It is --

Q. Okay. Okay. So what does an operator do if the MBS

analyst is getting information that turns out to be incorrect?

A. Incorrect in that the analyst said it was valid and it was not, for example? Or --

Q. The analyst says it's a column separation when, in fact, it's a leak.

UNIDENTIFIED SPEAKER: At the time of Marshall or now?

UNIDENTIFIED SPEAKER: Both.

UNIDENTIFIED SPEAKER: Okay. Because there's -- I think there's a difference in the direction.

MR. JOHNSTON: So, I guess, initially or at the outset, the ability for MBS to distinguish between a leak and a column separation -- well, I haven't seen that demonstrated, the ability to distinguish between the two justifying the system, so -- but if at the time of the accident the MBS analyst came back with a response of column separation, the operator would need to execute the column separation procedure and could have 10 minutes to -- before adjourning or trying to further analyze the current problem. That 10 minutes is common to the column separation procedure and the MBS.

BY UNIDENTIFIED SPEAKER:

Q. Okay.

A. (Indiscernible) the leak procedure.

Q. And if this happened today, what would be different?

A. Today? Well, the procedures in place today, the operator would explicitly go to the column separation procedure

and shut down within 10 minutes. In the proposed procedure, the analyst wouldn't say column separation, the analyst would say valid or invalid, removing some of the maybe gray areas around column separation versus leak.

Q. Valid or invalid why? Is it possible to have an alarm that the analyst says is invalid that turns out to be valid?

UNIDENTIFIED SPEAKER: Or is that a question for MBS? Do you think?

UNIDENTIFIED SPEAKER: Oh, okay.

BY UNIDENTIFIED SPEAKER:

Q. What is the -- your experience -- how do column separations occur? And (indiscernible), say, in a year? Let's say one in 6B.

A. At the time of the accident, I believe line 6B would experience a column separation on all shutdowns. If not all, almost all. So it would be dependent on the number of shutdowns.

Q. So it sounded like that was in routine turns.

A. Yeah. Well, it would be -- yeah. The minimum holding pressure -- I'm sorry. The maximum allowable limit of holding pressure at the delivery location at the time was lower than the minimum holding pressure to maintain the Gulf on stream.

Q. Okay. How often did a leak occur in your line 6B?

A. None that I can recall. So --

Q. Had a leak ever occurred before in line 6B in your experience?

A. Certainly not a rupture that I can recall.

Q. So it would reasonable to expect then that if somebody gets an MBS alarm, their assumption would be that it's a column separation and not a leak by its frequency and the ratio of column separations to leaks. Is that right?

A. Right. The column separation in itself doesn't cause the MBS alarm. In my understanding, you could have a column separation without an MBS alarm. The MBS alarms are caused by imbalances rather than the condition of column separation.

Q. And given the infrequency of leaks, it sounds like it's a pretty good assumption that you don't have any if you're using just (indiscernible) evidence, right?

A. I don't know if I'd put it that way. The frequency of leaks is low.

UNIDENTIFIED SPEAKER: I wonder if it's not important to distinguish where along the pipeline the column separations historically occurred versus where the failure occurred because I think it could be confused. I don't want to see you get confused, you know. Where Jim is talking about it occurring, you know, very traditionally is at the end of the line at Sarnia, where it goes down a big hill. Where this failure occurred, you know, 150 miles upstream of that where there's no deliveries, you know, taking place and I think maybe one -- at one point in the previous 3 years did the pressure to where there would be a column separation somewhere. Is that right?

UNIDENTIFIED SPEAKER: That's correct.

BY UNIDENTIFIED SPEAKER:

Q. All right, so when you're looking at column separation, you have to look at the location --

A. Uh-huh.

Q. -- and the evidence, the historical evidence for that one location?

A. Yes.

Q. And based on what Brian said, that location was not one where you could say that a common separation was routine.

A. That's not the location, yeah.

Q. Okay. Now, how does one ultimately verify that it's a leak and not something else? What information do you need to say now I know it's a leak?

UNIDENTIFIED SPEAKER: In order to shut down or to say it's a leak?

UNIDENTIFIED SPEAKER: The latter

UNIDENTIFIED SPEAKER: Just to say it's a leak?

UNIDENTIFIED SPEAKER: Yeah, just to verify the evidence.

UNIDENTIFIED SPEAKER: Okay.

BY UNIDENTIFIED SPEAKER:

Q. What do you need to verify your evidence?

A. Ultimately, you need to physically see the leak.

Q. No other way to do it other than to have someone on site

say -- look at it say I'm looking at a leak?

UNIDENTIFIED SPEAKER: If the line is shut down until an operations person will go out there, report the oil, and/or turn (indiscernible), walk it, fly it, or whatever, and then say there is not release.

UNIDENTIFIED SPEAKER: That's the only way to do it?

UNIDENTIFIED SPEAKER: Yes.

UNIDENTIFIED SPEAKER: I'm sorry. I hope this doesn't mess things up. I thought I saw, when I was going through your procedures, that a certain number of triggers requires the operator to execute it, confirm the leak, right?

UNIDENTIFIED SPEAKER: Yeah.

UNIDENTIFIED SPEAKER: And that's without any outside source saying we've got oil in the ground. They're -- you can execute or confirm a leak just based on your SCADA data, right?

UNIDENTIFIED SPEAKER: That's correct. That's the language we use.

MS. BUTLER: And that's the three triggers --

MR. JOHNSTON: Right.

MS. BUTLER: -- is that correct?

UNIDENTIFIED SPEAKER: That's correct.

MR. JOHNSTON: Yeah, that's right. That -- and we use that language to reinforce that if you've got three triggers, you might -- you need to consider it a confirmed leak. Now, we actually do that procedure more often that we have leaks, the

actual leaks, but I --

UNIDENTIFIED SPEAKER: So the terminology confirm leak is still hypothetical until boots run (indiscernible)?

BY UNIDENTIFIED SPEAKER: So if I am understanding this, three triggers gives you an assumption of the leak, the actual onsite verification gives you confirmation of the leak? Is that a good way to say it?

UNIDENTIFIED SPEAKER: That's -- yes.

UNIDENTIFIED SPEAKER: Okay.

UNIDENTIFIED SPEAKER: I think the thing we want to make sure that it's very clear is we're not waiting to shut the line down until the people see the oil. The line is going down sometimes after one leak trigger, but for sure at three.

MS. BUTLER: Procedurally, we're not waiting --

UNIDENTIFIED SPEAKER: (Indiscernible).

MS. BUTLER: -- to have it called in.

UNIDENTIFIED SPEAKER: Okay. That gives --

MS. BUTLER: And a clarification, just so you know, is when they do receive a call and they have someone say that there's oil, if you look through what happened, then they did not call it confirmed by their terminology in the logs until they had someone from the station actually see oil on the ground.

UNIDENTIFIED SPEAKER: Okay.

MS. BUTLER: So there is a bit of a misnomer there between what they call the procedure and the words they use in

their logs.

UNIDENTIFIED SPEAKER: Okay.

BY UNIDENTIFIED SPEAKER: Well, let's say under the new system you have three triggers, so the assumption is a leak. Then you have -- and in the meantime, the problem is not still a mystery or still -- it's an assumption, not a confirmation. Somebody on the ground looks at it says no oil and that person turns out to have been wrong. There was oil, but he just doesn't see it. He calls back and says I don't see any oil. What happens then?

UNIDENTIFIED SPEAKER: His management -- so, if you will, the first responder would have to go to his management, region management. They're the ones that have to call back.

UNIDENTIFIED SPEAKER: Okay, the region management then takes this information to the person that went out on site --

UNIDENTIFIED SPEAKER: Right.

UNIDENTIFIED SPEAKER: -- and says our guy says no oil. The problem is still not diagnosed. It's still kind of an uncertainty and it turn out this guy was wrong, which I believe is what happened in Marshall. So under the new system, what would happen there, onsite person gets it wrong?

UNIDENTIFIED SPEAKER: It didn't happen in Marshall.

MS. BUTLER: Yeah.

UNIDENTIFIED SPEAKER: They never dispatched the personnel to go look for a leak.

UNIDENTIFIED SPEAKER: Who is this, who is the emergency responder?

UNIDENTIFIED SPEAKER: The first responder.

UNIDENTIFIED SPEAKER: The first responder who got it wrong.

UNIDENTIFIED SPEAKER: Enbridge's the first responder --

UNIDENTIFIED SPEAKER: Okay.

UNIDENTIFIED SPEAKER: -- was not sent out.

UNIDENTIFIED SPEAKER: Was that in the course of procedures?

UNIDENTIFIED SPEAKER: I don't believe so.

UNIDENTIFIED SPEAKER: Okay. So what would the procedures -- what do the procedures call for for the onsite verification (indiscernible)?

UNIDENTIFIED SPEAKER: People on the ground or a flyover, I believe, is what it is.

UNIDENTIFIED SPEAKER: And it must be somebody from the company?

UNIDENTIFIED SPEAKER: Correct.

UNIDENTIFIED SPEAKER: Now, let's say it occurs at night. Will a flyover still provide you with that information?

UNIDENTIFIED SPEAKER: No.

UNIDENTIFIED SPEAKER: Well, what happens then?

UNIDENTIFIED SPEAKER: It most likely will not go up until daylight hours.

UNIDENTIFIED SPEAKER: And what happens in the control room?

UNIDENTIFIED SPEAKER: The line is down.

UNIDENTIFIED SPEAKER: Okay. So under the new procedures, is there any way that that line could be started up if the person on the ground has not confirmed a leak?

UNIDENTIFIED SPEAKER: That's not their procedures. That would be, you know, that would be a Leon question.

UNIDENTIFIED SPEAKER: Okay.

UNIDENTIFIED SPEAKER: But they would have to go against procedures to tell the Control Center to start it up during -- at night.

UNIDENTIFIED SPEAKER: Okay.

UNIDENTIFIED SPEAKER: But I think -- you know, and I know where you're going with that and I think that I can say that Leon was on Thursday. That's the Operations folks.

UNIDENTIFIED SPEAKER: Okay.

UNIDENTIFIED SPEAKER: I report to him.

UNIDENTIFIED SPEAKER: (Indiscernible).

MS. BUTLER: To clarify just one moment. When you said you didn't think that it was according to procedure, that's because the region was contacted in the call that we indicated this morning happened, right, that we have a voice recording of --

UNIDENTIFIED SPEAKER: It was actually after that.

MS. BUTLER: -- Ted?

UNIDENTIFIED SPEAKER: My understanding of the transcripts are at one point in time, I think the second startup --

MS. BUTLER: Okay.

UNIDENTIFIED SPEAKER: -- they called region management --

MS. BUTLER: Right.

UNIDENTIFIED SPEAKER: -- who authorized the Control Center to restart the line based on factors that are in that transcript.

MS. BUTLER: Okay. So in addition to Blane (ph.) (indiscernible) --

UNIDENTIFIED SPEAKER: No, I don't see it. What I see in that conversation is Blane says if it's false, do we have to contact regional management, and I think it's Jim Kinetson (ph.) that says no.

UNIDENTIFIED SPEAKER: It was the second time. There was a call --

UNIDENTIFIED SPEAKER: (Indiscernible) Blane did it the second time.

MS. BUTLER: And that was the second time.

UNIDENTIFIED SPEAKER: There was a call made --

UNIDENTIFIED SPEAKER: Blane is the second time.

UNIDENTIFIED SPEAKER: -- if you will, the third time.

UNIDENTIFIED SPEAKER: I'll find it. You guys just keep

talking.

MS. BUTLER: Yes.

UNIDENTIFIED SPEAKER: I'll find it.

UNIDENTIFIED SPEAKER: You know what I'm talking about, right, Brian?

UNIDENTIFIED SPEAKER: Yep.

MS. BUTLER: This would have been where they contacted the region.

UNIDENTIFIED SPEAKER: It's the next morning, and Tom Ferdell (ph.) asked can we send someone out to look farther out from Marshall, and Tom Ferdell says no, we haven't gotten any calls in yet about a leak.

MS. BUTLER: Yeah. That's what you're talking about, right?

UNIDENTIFIED SPEAKER: That's after the startup. That's after the second shutdown, I believe.

MS. BUTLER: Yeah, it is.

UNIDENTIFIED SPEAKER: Well, okay, Brian's got the (indiscernible) --

MS. BUTLER: But, nonetheless, that's what you're referring to, right, Jerry?

UNIDENTIFIED SPEAKER: That's what I'm referring to.

MS. BUTLER: Okay. I just wanted to clarify that we knew what everybody was referring to and, obviously, I'm glad I did because there's a timing.

UNIDENTIFIED SPEAKER: Yeah. And I think Brian's going to pull it all through, you know.

MS. BUTLER: Yeah, he is, because I know he's listened to it --

UNIDENTIFIED SPEAKER: I went through all that stuff. I just had to --

MS. BUTLER: -- because we talked about that.

UNIDENTIFIED SPEAKER: My understanding is the -- and Brian's going to look in here -- is they were looking to start again, ask region management. The call came in from the other utility company --

MS. BUTLER: Right.

UNIDENTIFIED SPEAKER: -- in between that --

UNIDENTIFIED SPEAKER: That's way --

UNIDENTIFIED SPEAKER: -- in between.

UNIDENTIFIED SPEAKER: Oh.

MS. BUTLER: They had called --

UNIDENTIFIED SPEAKER: Now, that's the first I've heard that.

MS. BUTLER: They had called that time.

UNIDENTIFIED SPEAKER: So they were thinking of starting it yet again on third shift?

UNIDENTIFIED SPEAKER: No. I don't (indiscernible).

UNIDENTIFIED SPEAKER: Can we go off the record?

UNIDENTIFIED SPEAKER: Yeah, let's -- we're off the

record.

UNIDENTIFIED SPEAKER: Okay.

MS. BUTLER: Yeah, this happened somewhere between after Blane had given permission for the second (indiscernible) start, right? And when the recognized the release having received the CMS or CMS pole, is that right, the person calling in from the gas company confirming that they saw oil and a leak?

UNIDENTIFIED SPEAKER: It's just before that, yeah, right.

MS. BUTLER: Yeah. It's somewhere, I think --

UNIDENTIFIED SPEAKER: (Indiscernible) 9:00 a.m.

MS. BUTLER: Yeah, it's somewhere in between those two timeframes.

UNIDENTIFIED SPEAKER: All right.

UNIDENTIFIED SPEAKER: Correct.

UNIDENTIFIED SPEAKER: Yeah.

MS. BUTLER: Right. And so, technically, by procedure, once that call was made, then we should have been out looking for the release prior to receiving the gas call.

UNIDENTIFIED SPEAKER: Yes.

MS. BUTLER: Yeah. Okay.

UNIDENTIFIED SPEAKER: I mean, we're out. You sent Brian out once, right, to talk to the lead?

UNIDENTIFIED SPEAKER: He's at the station, Brian Whitaker (ph.), right, at this time?

MS. BUTLER: That's where --

UNIDENTIFIED SPEAKER: Right, at the station.

MS. BUTLER: That's the reason I wanted to clarify this.

UNIDENTIFIED SPEAKER: That's not considered (indiscernible).

UNIDENTIFIED SPEAKER: Now I'm confused and I thought I was, I thought I understood.

MS. BUTLER: Yeah, because --

UNIDENTIFIED SPEAKER: It was in the station.

UNIDENTIFIED SPEAKER: Tom Ferdell has to issue the boots on the ground.

MS. BUTLER: Because when you go out to a station, you're just looking right there --

UNIDENTIFIED SPEAKER: At the station.

MS. BUTLER: -- and this would have happened between stations, okay, so you would have to intentionally dispatch people to look between stations.

UNIDENTIFIED SPEAKER: That's actually Brian's question.

MS. BUTLER: Yeah. So that's why we emphasized -- I wanted to go back and clarify what Jim was really saying.

UNIDENTIFIED SPEAKER: Okay, okay.

MS. BUTLER: I know I have (indiscernible).

UNIDENTIFIED SPEAKER: Towards the end, there would be the --

MS. BUTLER: We'll find the timeline.

UNIDENTIFIED SPEAKER: All right.

UNIDENTIFIED SPEAKER: -- recordings in the Control Center --

MS. BUTLER: I know you've got them.

UNIDENTIFIED SPEAKER: -- that's in there, Matthew, in the --

UNIDENTIFIED SPEAKER: No, I've got them right here.

MS. BUTLER: Yeah.

UNIDENTIFIED SPEAKER: No, I'm looking at them. I've been reading them --

MS. BUTLER: Yeah.

UNIDENTIFIED SPEAKER: Okay.

UNIDENTIFIED SPEAKER: -- and I scratch my head where Tom Ferdell was in the conversation with Blane and Jim and it's not there.

UNIDENTIFIED SPEAKER: It's towards the end.

UNIDENTIFIED SPEAKER: It's page 26.

MS. BUTLER: And is this the voice recording transcript?

UNIDENTIFIED SPEAKER: This is the voice recording -- this is Enbridge's printed transcript of the voice recordings.

MS. BUTLER: Okay. Because we heard it. I know we heard that call.

UNIDENTIFIED SPEAKER: But it was much later. It wasn't on (indiscernible), as far as can tell --

MS. BUTLER: Yes, it was not on --

UNIDENTIFIED SPEAKER: If I'm wrong, I want to know because I don't have it.

UNIDENTIFIED SPEAKER: Well --

MS. BUTLER: Because we have it in the (indiscernible) file, I'm pretty sure. Because I had it and didn't quite know what was going on and I said, ooh, Brian. And I think you brought that to my attention also afterwards.

UNIDENTIFIED SPEAKER: (Indiscernible).

UNIDENTIFIED SPEAKER: Well, I can finish my questions then.

UNIDENTIFIED SPEAKER: No, it's page 17.

UNIDENTIFIED SPEAKER: Page 17?

UNIDENTIFIED SPEAKER: So you don't need regional, Blane says. Darren, no. The only time we would need a guess would be verified. Yeah, so if it's valid, the operator shut down. But it's -- so he -- Blane says up here, so you don't need regional, and Darren says no. That's in the second startup conversation.

MS. BUTLER: (Indiscernible) after that though?

UNIDENTIFIED SPEAKER: Yeah, I -- what I found, Kelly Sopervich (ph.) talked to Tom Ferdell at --

UNIDENTIFIED SPEAKER: Right.

UNIDENTIFIED SPEAKER: -- 10:16 Eastern Daylight Time, discussing the shutdown and restart. The four pilots at Marshall shut down, restarted the second time. So I don't think they talked to region management until after the second restart.

UNIDENTIFIED SPEAKER: Right. That's what I'm saying.

MS. BUTLER: Right --

UNIDENTIFIED SPEAKER: That's, and that's kind of --

MS. BUTLER: -- but before the confirmation from the member of the public --

UNIDENTIFIED SPEAKER: Exactly. Right.

MS. BUTLER: -- (indiscernible) the gas leak.

UNIDENTIFIED SPEAKER: Yeah. Because they're talking about being kind of at a loss and Tom didn't think they needed to check the mainline. It seems line something else is going wrong, blah, blah, blah.

UNIDENTIFIED SPEAKER: Right.

UNIDENTIFIED SPEAKER: Okay.

UNIDENTIFIED SPEAKER: So Tom gave his okay to go --

MS. BUTLER: Yeah.

UNIDENTIFIED SPEAKER: -- but go where?

UNIDENTIFIED SPEAKER: To go? What's that mean?

MS. BUTLER: That would mean to put back the lineup, not go out, right?

UNIDENTIFIED SPEAKER: So that's a third -- that would have been a third startup?

MS. BUTLER: But they didn't do it --

UNIDENTIFIED SPEAKER: Right.

MS. BUTLER: -- because of the call.

UNIDENTIFIED SPEAKER: Okay, I didn't see that.

UNIDENTIFIED SPEAKER: Yeah.

UNIDENTIFIED SPEAKER: Okay. Okay.

UNIDENTIFIED SPEAKER: Yeah.

UNIDENTIFIED SPEAKER: Are we back on the record?

MS. BULTER: Thank goodness.

UNIDENTIFIED SPEAKER: Back on the record?

UNIDENTIFIED SPEAKER: Interesting. What time is it, 10:16?

UNIDENTIFIED SPEAKER: 10:16 Eastern Time, so that would be 7:16 Control Center Time.

MS. BUTLER: I hate that three thing, that 10 (indiscernible).

MR. NICHOLSON: Okay, we'll go back on the record.

MS. BUTLER: Okay.

MR. NICHOLSON: Back on the record.

UNIDENTIFIED SPEAKER: So in terms of getting somebody on site to verify that there's leak, since a lot of the pipelines traverse unpopulated areas, how long would you reasonably expect somebody to go out and verify at night that there's a leak?

MR. JOHNSTON: How long --

UNIDENTIFIED SPEAKER: Maybe I didn't understand the question. I'm sorry.

UNIDENTIFIED SPEAKER: Well, since many pipelines go though unpopulated areas, presumably, the person who dispatched to them would be some distance from those areas, right? So what

happens in that case when it takes a long time for someone just to get out to a particular site when he's not going to -- he or she isn't going to know if something -- the pipeline may go through uninhabited areas (indiscernible)?

UNIDENTIFIED SPEAKER: Chances are, at night, they won't go out because you're going to require a second person. There's safety procedures that are going to require you to have a second person. If you do into an area when it's dark that has potential vapors, you're going to need to wear Scott Air Packs. So, for the most part, you're not going to go out and walk the line at night and you can't fly the line at night.

UNIDENTIFIED SPEAKER: I think that does it for me for questions at this point.

MR. NICHOLSON: Okay, Brian, you're up.

MR. PIERZINA: Karen, go ahead.

BY MS. BUTLER:

Q. To -- I heard some things that reminded me of a couple of training and procedures that I'm going to cover, okay --

A. Sure.

Q. -- not just procedures. And one was you mentioned that you're -- you teach them that it could be a rupture or, conceivably, an obstruction.

A. Uh-huh.

Q. What are the types of obstructions that you cover?

A. We may close a valve without any indication that that

valve is closing. We may close a valve with an indication, but that's not a very challenging exercise.

Q. Yeah.

A. We may simulate a stuck pig by shrinking the pipe (indiscernible). We -- you know, in the debriefings, we would say that, you know, that the simulation was (indiscernible). What we're really doing in the model is we're shrinking the pipe, we're reducing the amount of oil that can flow through a valve, or just closing the valve and suppressing without indication that it's closed to the operator.

Q. So as a general train of thought, for an obstruction to be in the pipeline, would it not typically be there a malfunction of some type of mechanical device, like a valve or a pig or a piece of pig? Is there anything else that you can think of that would actually be an obstruction type of element?

A. No. It would actually be a valve of some type or, you know, a pig of some type.

Q. So there's nothing that you're teaching about, like grit or something in the pipeline, building up over time and clogging something, like a valve port?

A. Yeah. Not typically in a simulation session.

Q. Okay.

A. We do have partial obstructions in simulation sessions, but they would tend to, again, be more of a mechanical type of thing.

Q. Okay. Is there anything that you do in your training that would have been similar to conditions at Marshall, maybe not exact, regarding the fact that you (indiscernible) pigs, you've got power controls coming it effect at a location, and maybe even you have maintenance outages? Is there anything that you've done to combine those three elements?

A. Yes. One -- so our general approach is to have the emergency vent in the simulator, a destructor, and a routine condition. There's -- that's kind of a standard combination that -- one of the simulations that we do in the final emergency response evaluation and the practice is request for field maintenance which involves pressure restrictions. During that, we need to check that the person knows how to do that and we would also include an emergency as part of that. So to give you an example, we may have a scenario, you know -- a very common approach would be to have a scenario where we've got temporary pressure restrictions in place early on in the session. Those are in place, some other maybe routine things happen, and then the emergency, and the person has to respond to all three conditions, including evacuating the people from the (indiscernible).

Q. So in your emergency training, you would go through that. Do you cover with the controllers that when a station is down, their pressure transmitters may be locked in behind a closed -- locked valve or a valve such that they're not reading actual line pressure?

A. So my initial response would be, you know, that's embedded in the routine and in on-the-job type training. We do have specific simulator session called scheduled bypasses, which is just practicing bypassing stations on the simulator, and that would involve bypasses that, I guess, for power maybe, or also bypasses that would isolate the station for a (indiscernible) bypass. You know, I can't think of a point in the instructor's guide or any of the supporting material that specifically points to that, but it would be a part of the scenario where those pressures are locked in.

Q. Okay. So it's not in any site specific elements?

A. I'd have to double check. It's our -- the MB -- the joint MBS and opportunity and development, for example.

Q. Okay.

A. There might, there may be other examples where it, but I just can't think of any.

Q. Okay. So I'll just note that it's in development. Is that fair?

A. Yeah, yeah.

Q. Okay. All right. What might cause you to rethink an existing procedure?

A. A number of things. One might be just a request by an operator to rethink a procedure, and so, there, you know, power to go through the process to propose procedures changes. One may be in follow-up of an abnormal operator condition where would see if

a procedure was effective and that can lead to procedure changes. One would be an actual more full-fledged investigation where we would realize that the procedure has room for improvement or efficiency of some kind. And, you know, especially getting up to the area of a report where they're (indiscernible). So it can be just as simple as somebody thinking this isn't clear enough to the result of an investigation.

Q. Is there --

UNIDENTIFIED SPEAKER:

Q. Well, one of the things that ties right into OQ -- and people are OQ'd every 3 years --

A. Uh-huh.

Q. -- but because of the cycle when they come in, they're -- people are constantly OQ'ing on these procedures --

A. Uh-huh.

Q. -- and one of the questions asked is the procedure appropriate for the task you're (indiscernible) to.

A. Oh.

Q. So that really, that, it just forces the issue probably on a monthly basis. I don't know how often you'd OQ someone Jim.

BY MS. BUTLER:

Q. Well, I would assume that that only addresses OQ covered task elements though, right?

A. Yeah, it would cover, you know --

UNIDENTIFIED SPEAKER: Correct.

MS. BUTLER: Okay.

UNIDENTIFIED SPEAKER: But that's a lot of them.

MR. JOHNSTSON: Yeah, there's opportunity to improve procedures then. I think where we see it may be a little more often than that is in the emergency training sessions themselves. So we have had procedures (indiscernible) coming out of those debriefs of the scenarios and doing it that way.

BY MS. BUTLER:

Q. Is there a formal process by which that can happen? Like, if the controller notes something, oh my gosh, today, I saw this and that's needs to be a caveat in some procedure or --

A. Yeah.

Q. -- that needs to be changed, can they formally -- how do they formally do that?

UNIDENTIFIED SPEAKER: Right.

MR. JOHNSTON: Yeah. So we talk about some of the times where it's normal to be reviewing procedures here, and then how to do it is in our quality management system.

UNIDENTIFIED SPEAKER: Well, what are we looking at, a new procedure, or was this in place in 2010?

Mr. JOHNSTON: This was in place in 2010.

UNIDENTIFIED SPEAKER: Okay. This is the process by which a procedure is revised. I think it was covered in one of the interviews in some detail, so I don't --

MS. BUTLER: Yes, but I don't think --

UNIDENTIFIED SPEAKER: Well, she --

MS. BUTLER: -- we got (indiscernible).

UNIDENTIFIED SPEAKER: -- Karen didn't have the benefit of being here.

UNIDENTIFIED SPEAKER: She was on the phone, more or less.

MS. BUTLER: And I, actually, I thought that out of the interview, there was a very distinct element that said there really wasn't any controls on how a revised process document was controlled.

UNIDENTIFIED SPEAKER: Okay.

MS. BUTLER: Does that make sense? That the -- as -- what I recall coming out of those interviews taking notes long distance was the fact that I think I asked how did a revised procedure, but not approved procedure get in someone's hands who's the, and I said, used the word, I think, zar (ph.) of procedures, and there really wasn't an answer, if I remember correctly.

UNIDENTIFIED SPEAKER: Okay.

MS. BUTLER: So I'm trying to use this method of questioning to either determine if that actually was the case or if we just didn't quite ask the questions right, if that makes sense. So --

UNIDENTIFIED SPEAKER: Are you looking for the subject matter experts to review -- that review the revision request?

MS. BUTLER: The first element in the questions that is

how can a controller submit an idea, and that's what you're clarifying.

UNIDENTIFIED SPEAKER: Yeah.

BY MS. BUTLER:

Q. Okay. So they do it through this process which they click on the link, they can type it in on any procedure. Okay, that's the first element. The second element is we've revised the procedure, but we haven't approved the procedure. How does control happen as far as where that is and who it's distributed to, okay?

A. Okay. So when we say revised, we're saying --

Q. Proposed amendment.

A. Right, uh-huh, yeah. So that is also outlined in this document that covers the initiation of proposing a right through to approval. So the process is, using the example of an operating (indiscernible) would be that they're talking amongst their workgroup, submit a written change through this process. It would go through just a brief check to see if this really a procedure or if this is something else, and then go into the review process. The review process includes an initial notification by email to predetermine reviewers that this review is starting with this proposed procedure. The email contains the body of the procedure and normally with changes in red, and in that notification there's kind of a standard message at the beginning that says this is the -- the submitters -- this new submitter reason for change, review

period duration and approval of reviewers, and that the comment on the procedure in our operations forum during the review duration. So that email goes out, and then we place the course procedure in our operations forum for written comments, feedback suggestions from the operator and other reviewers. As that process goes through, it needs to -- unless it's considered and imminent safety hazard, it would go through that review period. Once there's been some feedback or review of that procedure, then the predetermined approver can designate that it's approved, typically in the same form as the comments go, and then that approved procedures goes into this production database that we're looking at here.

UNIDENTIFIED SPEAKER: And what Karen didn't get a chance to see last time, and you asked about it when Brian was gone, is, you know, the draft procedure for column separation and how we -- how when you go in there, it's very clear that that's not approved procedure and, you know, that those drafts and -- or procedure that are under revision -- so I know you went in last time and you said, you know, here's the procedures and here's the drafts or the revision requests.

And like I say, you were asking those questions last time --

MS. BUTLER: Exactly.

UNIDENTIFIED SPEAKER: -- and you didn't -- weren't able to see them.

BY MS. BUTLER:

Q. Well, even in just hearing this, I didn't hear -- what I heard was someone submits and idea. It gets incorporated into a document. At the top of the document is some type of indicator that it's a draft. It goes out to a specific email group that have been predetermined as being reviewers.

A. A set of email groups.

Q. Okay. And then it also goes into an area where you said anyone can comment on it? I didn't -- I mean --

A. Anyone within the department, yeah.

Q. Okay. So there's two methods there, the individual emailer and this area where anybody can comment on it, right?

A. That's correct.

Q. Okay. And then I heard that after the comments are looked at, the designated list can indicate that it's approved.

A. The designated approver can --

Q. Now, is the designator approver in the email string? Is anybody in the email string a designated approver? That's how I needed to ask it.

A. The -- no. Well, let me put it this way. Maybe it's just easiest to show you (indiscernible).

Q. Okay.

UNIDENTIFIED SPEAKER: Yeah, what you --

MS. BUTLER: Okay.

UNIDENTIFIED SPEAKER: Here you go, Jim.

MR. JOHNSTON: So this is our current list of reviewers

and approvers. So the approvers are in -- (indiscernible) marks.

UNIDENTIFIED SPEAKER: Thank you.

MR. JOHNSTON: So the -- and right now at current state is that CCO management is approved for all procedures. Different sections still have different standard reviewers which are these, basically, email groups.

MS. BUTLER: Uh-huh, got you.

MR. JOHNSTON: So these are the -- the reviewers are the groups that would receive the notification now, including the on-shift staff.

UNIDENTIFIED SPEAKER: So shift leads do not review it?

MR. JOHNSTON: We separate -- the on-shift staff includes shift leads and console group --

UNIDENTIFIED SPEAKER: Okay, okay.

MR. JOHNSTON: -- and that's kind of described earlier in the document, but that's because these sections affect multiple consoles. And so, basically, we send these types of procedures out to all consoles and shift leads. But if it's one of these console-specific procedures (indiscernible), it just goes to the shift lead and the specific console.

BY MS. BUTLER:

Q. Gotcha. Okay. So it's gone out. Now what?

A. Now -- so it's gone out in email format -- it's -- with the descriptor, the message, the details of written review, then it goes into the Control Center Operations Forum, which is and

(indiscernible) and what type format --

Q. Uh-huh.

A. -- for the duration of the -- at least in (indiscernible) the review period. So during that period, you're getting comments that is applicable back from the groups that got the notification. And then if the -- you know, after the review period, approval will look at it, look at the comments, look at the procedure change itself, and if there it is an improvement, then they'll go ahead and approve it. So --

Q. So what happens if the primary approver hasn't approved or not approved within 7 days for the section that falls to the console (indiscernible) shift leads?

A. The -- a couple of things could happen. They could continue the review period and get more comments, give it additional thought. That sort of thing passes in 7 days, 7 days minimum. So they may stay in the operations forum under the review sections until such a time where a decision is made on it or they may have the procedure review based on the comments that may be suspended and the review wouldn't continue and the procedure wouldn't get approved and moved to the database.

Q. Okay. So we're going to go through two scenarios, all right? The first one is that everything works like clockwork and people get it reviewed and nobody submits a negative comment. Then is it automatically -- what happens next to indicate it is now an approved procedure?

A. Okay. So the approver, even if there are no negative comments, still has the authority to say, well, I've seen something here that nobody else did and that'll be --

Q. And you're saying -- when you say approver, you mean primary approver?

A. Yeah.

Q. All right.

A. So they don't automatically need to approve it if there's something in there that they identify as not safe, for example. But -- so, let's use your scenario which (indiscernible), it's a good change, everyone likes it, the primary approver would note approved typically as a comment to the procedure. Our administrative compliance type people would then take that change, put it into the procedures data -- production -- official procedures database with another notification that this procedure has been approved effective -- this is now --

Q. And the notification goes to?

A. All the reviewers that were originally contacted, which would include all of the users of that procedure.

Q. Okay. So they would receive a separate email that says it's been approved?

A. Yes.

Q. How does it get out to everybody else?

A. The list of approvers would -- okay, so it would be the people directly affected or have the most --

Q. Right.

A. -- knowledge about that. There isn't another notification or people that aren't directly affected aren't notified by email because they're in the original set of reviewers. So, for example -- if this clarifies -- say it's a procedure that only affects line 6.

Q. Right.

A. Line 6 console would be getting the initial notifications on review, as well as technical services and shift (indiscernible).

Q. Okay. So that's -- somebody puts together the email list when they're getting ready to send it out, is that right? So it's not automatically pre-populated like you --

A. Right.

Q. You select which consoles it goes to and that automatically sheds out an email?

A. The person that notifies the person (indiscernible) basically says, okay, I need to --

Q. Okay.

A. -- include these people.

Q. So there's a human that determines who it actually goes to?

A. Yeah.

Q. Okay. So now let's go through the scenario where it doesn't work like clockwork and the primary approver doesn't

provide comments back within 7 days, but the console group does. The console group believes that it's been approved based on their comments. Is there a time lapse by which it goes into either approved or not category?

A. There is not sort of a defined time period where it's not approved that we would just suspend it and discontinue the review. It's -- it could vary. So --

Q. Okay. Let me ask if there's a negative that happened at all (indiscernible). Is there a negative email that said, comes out and says this procedure has not been approved?

A. No.

Q. Okay. All right. I think two others to wrap up. One was did they ask you to review the shutdown that actually happened on Marshall as to whether it was a hard shutdown or not?

A. No, I wasn't asked to review that.

Q. Okay. So has there been any amended training as to what goes into a shutdown since Marshall?

A. The -- yes. Not in the nature of hard versus soft, but in the nature of assessment that is done after the shutdown is complete.

Q. Okay. That was it.

BY UNIDENTIFIED SPEAKER:

Q. A couple of quick questions, Jim. Is this table accurate now with the split between terminals and pipelines?

A. Yes.

Q. It's still (indiscernible)?

A. Yeah.

Q. Okay. And the proposed column separation procedure, that was, my understanding is that was around for a few months. Is that accurate, do you know?

A. Oh, the one --

Q. The one that was grabbed when looking at how long, you know (indiscernible) column separation?

A. Right. I think there were a couple of draft procedures that went -- that were reviewed around the May timeframe, and then suspended probably around the June timeframe, (indiscernible) 2010.

Q. Okay. Was this draft procedure or proposed column separation procedure suspended?

A. Yes.

Q. Okay. I didn't recall that. I thought it was still in review.

MS. BUTLER: Yeah. And when it's suspended, does it get a different header?

MR. JOHNSTON: Yeah.

BY UNIDENTIFIED SPEAKER:

Q. Oh, so it stays in the operations forum?

A. Uh-huh.

Q. Even if it's suspended? Why would it even stay if it's no longer under consideration?

A. If people wanted to check what happened to it or look back and look at some of the comments (indiscernible).

Q. Oh, so it's, I guess, apparently, somehow or another you -- if you -- if it gets removed from there, you lose all history, I suppose on it?

A. Yeah. I guess you'd -- it's -- I -- just to -- yeah, it gives people a little bit of a portrayal to see why things are the way they are.

Q. Okay. So in the scenarios that Karen was asking you about, so there's a 14-day default review duration that -- does somebody have to physically suspend it, you know, physically tag it as suspended in the operations forum?

A. Yeah, somebody needs to go in and change it's --

Q. Okay.

A. -- category from -- to suspended.

Q. And who does that?

A. It could -- it's (indiscernible) one on my team. It could be myself or it could be our compliance analyst that handles the document management for that type of thing.

MR. NICHOLSON: I think we'll wrap it up there. If we have any follow-ups, we can --

MR. STRAUCH: I have a follow-up question on a different subject.

MR. NICHOLSON: All right, Barry.

BY MR. STRAUCH:

Q. As I understand the Marshall incident, the procedures there were (indiscernible), is that correct?

A. That would be my assessment, yeah.

Q. Okay. And now you have new procedures, right?

A. Yes.

Q. So why were these procedures -- these follow -- why are these procedures more likely to be followed that the procedures that were in place and not followed the night of the accident?

A. There are a number of reasons, I think, why. One would be the accident itself.

Q. Okay.

A. The training has occurred to reinforce the importance of procedure compliance. Training has gone into place to better establish roles and responsibilities between the people. The -- those different types of training, we plan and attract them. There's also a multitude of informal communication or more formal communication that's been issued regarding the importance of complying with procedures. The main reason is that nobody wants this to happen.

Q. Okay. All right. Will there be a review or reviews of operator performance to determine if they're following procedures or not? I mean, other than training that (indiscernible) that everybody knows there was a big accident because these procedures weren't followed, right? Is the oversight going to change at all to ensure that procedures are in fact followed?

A. Yes. I'm not the best person to talk about the -- how, you know, how that's going to work, but I believe the short answer is yes.

Q. Okay. Who would be the right person, Leon?

A. Because procedure compliance is, I think, recognized as a line management responsibility, that would be someone in line management. It would go from operator to shift lead to manager to director.

Q. All right, and that's Leon then. All right, I don't have any more questions.

MR. NICHOLSON: Okay, maybe we should wrap this up.

Jay, did you want to make any closing?

MR. JOHNSON: As usual, I cheat the system and asked when Jim was there, so I appreciate that, you bearing with me.

MR. NICHOLSON: Okay, I think we'll wrap it up then. This concludes the interview of Jim Johnson.

Thanks.

UNIDENTIFIED SPEAKER: Thank you very much.

UNIDENTIFIED SPEAKER: Thank you, Jim.

UNIDENTIFIED SPEAKER: Thank you, Jim.

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 - LINE 6B RUPTURE IN MARSHALL, MICHIGAN Interview of Jim Johnston
DOCKET NUMBER:	DCA-10-MP-007
PLACE:	Marshall, Michigan
DATE:	November 15, 2011

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

_____
Karen M. Galvez
Transcriber