THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF SOUTH DAKOTA

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IN THE MATTER OF THE APPLICATION OF
TRANSCANADA KEYSTONE PIPELINE, LP FOR A PERMIT UNDER THE SOUTH DAKOTA ENERGY CONVERSION AND TRANSMISSION FACILITY ACT TO CONSTRUCT THE KEYSTONE PIPELINE PROJECT — HP07-001

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Transcript of Proceedings
December 10, 2007
Volume VI, Pages 1,257-1,495

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BEFORE THE PUBLIC UTILITIES COMMISSION,
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GARY HANSON, VICE CHAIRMAN
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TRANSCRIPT OF PROCEEDINGS, held in the above-entitled matter, at the South Dakota State Capitol, Room 412, Pierre, South Dakota, on the 10th day of December 2007, commencing at 9:30 a.m.

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MR. SMITH: Good morning, everyone. It's 9:30, and this was the appointed time for the reconvening for the hearing in Docket HP07-001, and that's the application of TransCanada Pipeline, Keystone Pipeline, LP to construct a crude oil pipeline through the State of South Dakota.

We recessed about 3:30 or so on Friday, and at the time we recessed we were in the midst of WEB Water -- Intervener WEB Rural Water System's direct case. And we then took an individual Intervener.

And at this point in time, Mr. Rasmussen, I think we're at the point where it's time for you to resume your direct case; is that correct?

MR. RASMUSSEN: That's correct.

MR. SMITH: Please proceed.

MR. RASMUSSEN: Call Curt Hohn.

(The witness is sworn by the court reporter)

DIRECT EXAMINATION

BY MR. RASMUSSEN:

Q. Could you state your name, please.

A. My name is Curt Hohn, H-O-H-N, from Aberdeen, South Dakota. My address is 822 South Washington, and I'm the general manager of WEB Water.

Q. You are also an individual Intervener in this matter?

A. Yes.

Q. And your testimony today is being presented in both your

capacity as the general manager of WEB Water and as an individual Intervener; is that correct?

A. That's correct.

Q. We have marked as -- well, you filed prefiled testimony with regard to this matter?

A. I did.

Q. And we have marked as Exhibit 7 and just handed out a document which includes your prefiled testimony plus exhibits you've prefiled marked as attachments to your prefiled testimony as Exhibits 1 through 39.

You've marked that entire document as Exhibit 7; is that right?

A. Yes.

Q. If you were to be asked the same questions today as are included in your prefiled testimony, would you give the same answers?

A. Yes, I would. But I do have a few changes or corrections.

Q. And we've marked as Exhibit 12 some typewritten corrections that you made to your testimony; is that right?

A. Yes.

Q. Has that been handed out?

A. No.

(Mr. Moeckly distributes exhibit)

MR. RASMUSSEN: At this time I would offer WEB Exhibits 7 and 12.

MR. SMITH: WEB Exhibits 7 and 12 have been offered. I'm not hearing anything from either the Applicant or anyone else.

MR. KOENECKE: Well, Mr. Smith, Brett Koenecke speaking for the Applicant. I mean, the document appears to contain a substantial amount of hearsay and other material which would probably be objectionable under other circumstances. I guess it's objectionable under these.

We're not going to object, but we would certainly expect the Commission to give it the weight which it would be entitled. So no objection.

MR. SMITH: Thank you. Is there objection from any other Intervener in the case? Staff?

MS. SEMMLER: Same thoughts. It appears as if there's a variety of newspaper articles and would ask the Commission to give it the weight it deserves.

MR. SMITH: Thank you. Hearing no objection then, we'll admit WEB's Exhibits 7 and 12.

Q. Mr. Hohn, could you summarize the concerns you have with regard to the TransCanada Pipeline based both upon your direct testimony and the evidence that you've heard throughout the course of the last week?

A. Yes. It's in our testimony, but for those who aren't aware, WEB is a regional rural water system. We serve 17 counties, 8,000 rural hookups, 106 towns, five ethanol

plants, two soybean processing plants, two electrical peaking plants, and soon we'll be providing part of the water for a beef plant.

Our concerns have to do with the potential impact this project could have on our pipeline. Also on ground water resources in our service area that will be and are a potential additional source for our system. In Marshall and Day County it's the James Aquifer. In Day County the Basal and Lynn and in Clark County Altamont Aquifer.

I'm not going to go into great detail into the written testimony. It's there before you. But just to summarize, we understand the burden of proof rests with TransCanada, the Applicant. We question whether they meet the first requirement, complying with laws.

Federal law requires that they protect highly consequential areas and USA, unusually sensitive areas. We believe shallow aquifers in our area are sensitive and highly consequential. We believe the eight rural water systems they'll be crossing are highly consequential, and they are the drinking water supply for much of eastern South Dakota.

We question and ask the PUC to look closely at whether the test of common carrier status has been met. There doesn't appear to be a direct benefit, i.e., the shipment of oil from South Dakota to other places.

The pipeline based on information presented by Applicant

and news stories indicate that ConocoPhillips and Encon appear to be the owners or primary owners, that they're shipping their oil to their refinery which would appear to be a monopoly not providing direct benefit to the community.

I won't go into the detail of eminent domain, but we question whether they have complied with state law regarding that because they filed eminent domain on 18 landowners before they had a PUC permit and before they had federal approval and before the EIS was approved. That, of course, is before Judge Jack Von Wald, and the hearing will be July 28. That's my understanding.

We feel they've failed to comply with NEPA, the National Environmental Policy Act. They failed to discuss all alternatives that could have been considered. The alternatives may have been discussed in-house in Canada and Houston, but they were not discussed in South Dakota and they are required under federal law to do that.

We are concerned that it may be more than one pipe, that there could be as many as six pipes based on comments in a Houston paper by a ConocoPhillips executive who says that by the year 2020 3,500,000 barrels of crude oil from Canada will be moving into the U.S. and would appear that South Dakota's going to be part of the corridor.

So is this one pipe or several pipes? Is this a one-pipe corridor or a six --

MR. KOENECKE: I'm going to object to that. This application is for one pipe, and Mr. Hohn well knows that. We're already into speculation and conjecture.

MR. SMITH: Sustained.

A. We question the need, which is a federal test. Oil --

MR. KOENECKE: If it's a federal test, why are we bringing it up here this morning? Let's move on to relevant information, please.

A. The need is also a requirement in state statute, it's my understanding. Oil refineries -- again, based on what you read in magazines and the newspaper, some oil magazines are not running at full capacity. The other issue that comes into play is when the war ends in Iraq, 144 million barrels of oil are impacted by that war.

Now not all of it will go away. There will be a continued need. But the war uses a lot of oil. And so is that a long-term impact and need, or is it a short-term?

Full disclosure. We expressed concerns as the Commission knows, and we want to restate it again about the documents that were marked confidential early on. The Commission opened them up and made them available, and we appreciate that. But it took some 90 days to get that process done. That's not an open presentation.

We feel there is a threat to the serious injury, to the environment, the social and economic condition of the

communities that this pipe will go through.

There's a new risk that wasn't there before the pipe would be built. There is not a crude oil pipeline in the 10 counties crossed. A pipeline that will operate at 1,440 psi and might surge or could surge to 1,584 could cause irreversible damage in our opinion to aquifers if there's a leak.

The pipe is a thinner wall thickness than other pipes built in the United States at this point, and the pressure is higher. The pipe company -- this pipe company has testified that while they have built oil pipelines, they have no long-term experience in operating them.

The DNV report, their own risk management consultant stated that there could be leaks within five to seven years and that a pinhole leak could generate as much as 370,000 gallons per day and not be detected for as long as 90 days.

The Office of Pipeline Safety -- and I'm just summarizing an item in my testimony, but the Office of Pipeline Safety, statistics in their office literature states the most common cause of oil transmission pipeline accidents is corrosion, 24 percent, and that weld fails, while they are 5 percent of failures represent 30 percent of property damage.

The U.S. Geological Survey, which is independent of the Applicant, states that spills from oil pipelines may extend miles away from the pipeline and often can never be fully cleaned up. The Aleyska Pipeline, which was the TransAlaskan

Pipeline originally before it was renamed, operates at 1,880 psi. In the first 12 years they had 116 corrosion failures. 126 shutdowns, and 12 million gallons of oil leaked in the 26 years of operation.

That's attached as part of a document they are required to file with the State of Alaska. It's their log, which you can view.

As far as impairment of health and safety, test number 3, the American Water Works Study shows that benzene, toluene, and other chemicals in petroleum can penetrate plastic pipe wall given time.

It also stated that service lines, the line going from the main into someone's house, should really be replaced with copper because there's a concern that if the line does not flow, the product will seep into the pipe and the level of contamination of the surface line will be too high, exceed the maximum contaminant level.

The study also states that other lines maintain constant flow -- would need to maintain constant flow to stay below the maximum contaminant level. What they're saying to me as somebody who operates a water system is you'll need to run a flush hydrant in the winter to clear the line, if you have a line that doesn't have enough turnover.

Where do we put the water when we're flushing for that purpose in December and January when it can become 30 below?

We'll have an ice flow.

A sample of oil tar sands were requested by WEB, and the Applicant refused to provide it. It would seem that a sample of the product that's going to be going through our state for the next 50 to 100 years might be an interesting thing to see, and we would ask that the Public Utilities Commission make that a condition of any considered Application, is have it tested by an independent lab in this country.

The American Water Works Lab is certified and highly capable. The South Dakota State University, Dr. Dornberg (phonetic), has the capability of testing.

The significance for us is people in the oil industry look at a spill and they say, well, we cleaned up most of it, we got most of it, and it's in the ground water, but it's not as high, and we reduced.

But 5 parts per million of benzene will contaminate 250,000 gallons of water. A teaspoon. A teaspoon of benzene will contaminant 250,000 gallons of water, which is a large, elevated tank that you see in most cities.

If a water system, whether it's mine or BDM or any of the other eight that are crossed with system, have an incident and they clean up most of it but we still have to start publishing in weekly papers until it's cleared up that we have toluene in the water, what is the consumer going to do? Would you let your children drink that water? I don't think most people will.

So for us once it happens we'll never get our credibility back, no matter what happens because people worry about what they give their families. And so while it may look like a success to them that they cleaned up most of it, if it's still sitting against our line and hasn't been cleared and seeping into the wall of the plastic pipe and we have to put ads in the paper telling our customers it's still there, it's a problem. It will be a water quality problem.

There's no water system in the state that I'm aware of that has ever had a positive sample on benzene and toluene and these products other than the system in Rapid City, Rapid Valley, which was impacted by the spill that Dr. Davis mentioned. And when that happened they were fortunate enough to be able to connect to the City of Rapid City and get their water.

But not all rural water systems sit close to another source. For us I think it's a major impact, and it's a major impact on the communities we serve.

The health effects. Canadian Center For Occupational Health & Safety, and their website's in the book -- you can research this yourself -- states that benzene has been connected to cancer, toluene to impacts on the nervous system, kidneys and liver. Ethyl benzene to liver and kidneys. Xylene to the nervous system. Hydrogen sulfide is recognized as a dangerous gas if it's released from a pipeline like this.

Impact on lands. A 2,000-barrel spill doesn't sound like

much, but that's 84,000 gallons. And according to the information filed by TransCanada as part of their initial Application with the U.S. State Department, 84,000 gallons of oil in the right circumstances could contaminate 400 acres and require 3 foot of topsoil to be removed.

The question most farmers raised, and I was raised on a farm, is where do you find 3 foot of topsoil for 400 acres? There just isn't that much in many places.

So, Mr. Chairman, that would sort of conclude my summary of my testimony which I have submitted and appreciate your consideration on that.

Q. As part of the Exhibit 1 there was a draft resolution from the South Dakota Association of Rural Water Systems. Has the Association finalized that resolution?

A. Yes, they have. On December 6.

Q. And has that resolution been marked as WEB Exhibit 8?

A. Yes.

(Discussion off the record)

Q. And Exhibit 8 then, the resolution, when was that adopted by the Association?

A. It was adopted in draft form about three months ago at a board meeting and then reviewed by managers, resubmitted to the State Rural Water Board, and then finalized on December 6.

I submitted with my original testimony a draft copy as a space holder. This is the final resolution. I believe a signed

letter was faxed to the Chairman of the Commission from Don Hentges as the president of South Dakota Rural Water.

MR. RASMUSSEN: I'd offer Exhibit 8.

MR. KOENECKE: No objection.

MR. SMITH: Staff?

MS. SEMMLER: No objection.

MR. SMITH: WEB 8 is admitted.

Q. Mr. Hohn, you also have a document which has been marked as Exhibit 9. What is that?

A. Exhibit 9 is a letter I received dated December 3. It was faxed to me from the Department of Revenue, Secretary Paul Kinsman, and it's a letter in response to questions I raised regarding taxes that might be collected from the pipeline.

Q. And what --

MR. RASMUSSEN: I'd offer Exhibit 9.

MR. KOENECKE: No objection.

MR. SMITH: WEB 9 is admitted, hearing no objection.

Q. What did you learn from Mr. Kinsman?

A. Well, the third paragraph of his letter is sort of a summary of it, the last sentence, "TransCanada Keystone Pipeline did not ask the Department to review its property tax estimate." And then the sentence just before that, "I do not know if these property tax estimates are correct."

And the reason I asked for this information is he states in his letter at one point the testimony we heard was there was

going to be 6.4 million in taxes. The Governor confirmed that, and Mr. Jones, I think, testified to that. And then we saw some literature, ads in papers and literature, saying 7 million and then 9 million. And it seemed like the best source --

It is a complicated issue. I wouldn't claim what it all means. But the Department of Revenue would be the source for that information, and I would urge the Commission to seek that -- the tax information from that party.

Q. Have you also prepared a PowerPoint to address some of the issues in this matter?

A. Yes. Before I do that, am I able at this time to comment a bit on this resolution from South Dakota Rural Water?

Q. Sure. Go ahead.

A. Okay. Again, I'm not going to read the entire thing because you can do that, and you've seen the draft. Now this is the final. There's really two or three very significant items.

I would refer you to page 2. I believe it's page 2. Let me look. It's page 3, the bottom of the page. On the left side it's marked lines 126 to 134. And in the first sentence the South Dakota Rural Water Association is requesting that a tariff or fee of some type be imposed at 15 cents a barrel on crude oil passing through the state and that the funds be made available for potential cleanup or impacts to the community and ground water and impacts to landowners.

And then just immediately above that, lines 120 to 124,

they're asking that the pipe wall thickness be greater than .338. And I believe at the time that's what we assumed the thickness was. That may have changed to a slightly larger thickness. But they're stating that provide equal protection as road crossings have, which is .551 wall thickness. And I don't think that has changed.

And then probably the other item -- there are three items at the top of that page, 93 to 98. They make reference to the Leaking Underground Storage Tank, LUST Program, that Mr. Markley, I believe, referenced. And that establish -- financing should be established for this project which could have far more impact prior to any permit Application being approved. So that's the summary of that document.

The PowerPoint -- before I get into the PowerPoint, I'm wondering if I --

Q. You brought with you -- with regard to the issue of the plastic pipe and permeability, you have brought with you two examples of pipe; is that right?

A. Yes.

Q. I guess why don't we go ahead and mark -- we'll mark those as exhibits.

(Exhibits 13 and 14 are marked for identification)

Q. The white pipe has been marked as Exhibit 13 and the black pipe as Exhibit 14. First of all, why don't you tell us what Exhibit 13 is?

A. Is that the white?

Q. Right.

A. This is an inch and a half pipeline made by Northern Pipe Products out of North Dakota. It's a common supply of water systems. It's inch and a half, 160 psi pipe. This is what WEB uses to go into the farmyard.

And we get up to the meter pit, just before you go into the house or point of service, the well pit. Then we use the next exhibit, which is the black pipe, or we may use a smaller version of this. This is the P.E. pipe or the black pipe they were referring to. And this is a 200 class pipe. It's a very high-quality pipe. Most farmers would not have this kind of thickness in their systems.

I believe the testimony from the State official who deals with this -- and I forget her name but with Mr. Markley's program -- said that this pipe is more susceptible than this white pipe. The black is more susceptible to the chemicals than white pipe. So I wanted you to see when we talk wall thickness this looks stronger, but it's made of a product that's actually not as strong as this.

The white pipe has a harder outer finish. And the American Water Works study you'll see graphs in there it will show a number of hours where the material did not penetrate the pipe until it removes the veneer on the pipe and then quickly ramps up.

So this will resist it longer than this, the white will resist longer than the black. But both of them will eventually if they're exposed too long allow product to pass through. And we have seen one or two gasoline spills in our area or diesel spills which have damaged both of these pipes. We have not had experience with a tar sand pipe -- or impact because we don't have tar sands.

There's not much thickness there between the outer wall, the soil and the water. What actually happens is before the pipe fails, long before it fails, both of these will sort of enlarge, swell. The water will still keep going but the pipe doesn't have the strength it used to have and the petroleum product actually can work its way through the wall.

And you'd have to talk to a scientist and read the AWWA report to understand why that happens. But I've seen it happen.

The first thing the customer notices is taste in the water, maybe smell. Usually in the hot water where the petroleum I suppose is vented. And so when they say, well, it won't take it out of service, it won't, but it's damaged it. And eventually it will just explode or leak and fail under pressure.

What they're saying is you can get the level below the MCL, maximum contaminant level, if you run the water. Well, in our systems, the WEB system is a large system and we're fairly dynamic but there are lines that are 4 inch or smaller where the water doesn't run at all at night. People go to bed. The

cattle stop drinking water, and so it sits there.

And the way I read that report, and other people in the business agree, that it's going to sit in that line and build up a residual. Just like we used to have problems with lead in water. And enough of a contaminant then will be in the water, and if somebody drinks it before they run the water and flush the line, you could have problems. It doesn't exist today. We don't have a problem today. And it would be a new impact.

And they're saying, the Applicant is saying, we could come in and clean it up, we promise to clean it up and do the best we can. And I'm sure they would try, and I would think the State would try to make them, get them to do it as well as we can.

But you're not going to get it all out of the soil. And some of the testimony we've heard is 25 percent may remain. Well, if it stays along this pipe for any length of time, we run the risk that we don't have today. And that I guess is my point.

As far as how this pipe goes together, I'm not going to pass this fitting out. I will pass one around. We use a rubber gasket. We do not glue the pipe. So when this pipe goes together there's a rubber gasket in this joint, and it just slides together.

The rubber gasket also possibly could be infected. It's made of butylene and rubber products, and if that gets exposed, the test -- the AWWA test said that you'd have problems. And

so, you know, it's -- this is a very reliable system. It works well. But petroleum products can impact it.

MR. RASMUSSEN: Offer Exhibits 13 and 14.

MR. KOENECKE: I have no objection.

MR. SMITH: Staff.

MS. SEMMLER: No objection.

MR. SMITH: WEB 13 and 14 are admitted.

Q. Did you want to move on to the PowerPoint at this time?

A. Yes. We sure could.

Q. Just in general what are you going to be showing everyone with regard to this PowerPoint?

A. What the PowerPoint will intend to show -- and we'll submit a disk, you know, as a follow-up if this is accepted. It would graphically show some things we've been trying to explain and maybe not done a good job of explaining without the images. We need the images to show you what we're trying to explain.

It will speak to the issue of actual photos taken in the Crow Creek drainage area, and it will speak to the water table. It will also address the issue of if, in fact, TransCanada comes through, what is South Dakota Rural Water System's operators and managers and boards planning to do to try to deal with this.

One of the -- I've got a lot of concerns of this project. One of the new things we learned recently at the hearing is when Mr. Buster Gray stated that TransCanada would honor our earlier easements, which was not the case earlier, and that if we had a

reasonably cost way of crossing under them, that they would consider covering that cost if it was reasonable. And so I want to show you what we've been talking about. Not just WEB, but all of the water systems that are being crossed.

Because there will be hundreds of pipelines, smaller, larger than this, mostly larger than this, some 12-inch pipe that will be crossed. The larger the pipe, the larger the customer impact. In the slide show also I want to show you our water system and kind of give you an idea of how it crosses us and what the concerns are.

Q. Have you printed out --

A. Yes.

Q. -- the slides?

A. I have. And I need to find them, I guess.

THE WITNESS: By the way, in terms of fairness, I think my attorney's phone went off, and he is going to be getting donuts. He forgot that.

MR. SMITH: I want to note for the people on the web who might be listening, this is the different web, the other web, the worldwide web.

THE WITNESS: You're the worldwide web.

MR. SMITH: But our administrative person here just advised me that we don't at this point have a copy of this to have on the web so that they can follow along as you're doing it.

I don't know. How long does it take you to load that up?

Should we go off the record just a minute. And if we might, just a few-minute recess here.

(Exhibit 15 is marked for identification)

MR. RASMUSSEN: We have marked the PowerPoint as Exhibit 15.

MR. SMITH: Okay. We'll come back into session then now. Would you repeat that, please.

MR. RASMUSSEN: We have marked that PowerPoint presentation as Exhibit 15.

A. I'm not going to dwell along -- should I continue?

MR. RASMUSSEN: Is it acceptable for Mr. Hohn to present the PowerPoint at this time?

MR. SMITH: Well, he can certainly start it. If there are objections to individual components of it, we'll take those up as they come along. Again, I haven't seen it yet so I don't know what's in there. It looked to me like a lot of it's in your prefiled testimony. So fire away.

A. The first slide is in the testimony. It's a larger image of the pipeline crossing rural water systems. This is the official map of South Dakota Rural Water. And the routing was taken from the TransCanada's site, website, the data provided to you. That, as far as we know, is the route, and we've imposed it over this map using our GIS system.

The second slide -- and they're numbered on the lower right-hand corner. Where we have date we've shown it. This is just a large pipeline that WEB is installing. In fact, we just finished putting it in. It's a 24-inch water line. This happened to be cut and installed quite deep. It's about 12 feet deep, which is about twice as deep as we normally install.

It's a high-pressure ductile iron pipeline that's paralleling our existing line that was installed to provide water for ethanol plants that are coming into our area. So we have some experience with large pipe.

The areas -- much of the area that we serve there's a lot of wildlife and resources in the area. Rural water has managed to build systems without impacting that in a major negative way. This picture actually has a water line under it. June 28, '07 it was taken.

The next photo shows the -- it's 2B. This is a photo taken June 28, I think a day after the hearing the PUC held in Britton. It's a road in Marshall County that would be an access road to reach the pipe if maintenance were needed. This is not uncommon through part of the area in that county.

The next page, 2C, is a creek flowing quite fast in June, June 28. And this is being fed by the coteau hills, the springs from the coteau hills. The very next page shows that same creek, 2D. Very clean water. That's good quality water.

The study completed by the Geological Survey, the Marshall

County Study, which has been discussed and we'd like to enter into the record here at some point states that there's 1.5 million acre feet, 1.5 million acre feet, in the James Aquifer.

And to give you an idea of how much water that is, WEB Water in 2006 our biggest year for the whole year used 7,500 acre feet. So there's 200 WEBs essentially in this aquifer. The volume of this aquifer's amazing.

It's been used for years since homestead days, but not fully used. And so as a resource of the state, who knows what that water will be needed for in the future. We have notions that we might want to tap the aquifer to help meet peak needs in the eastern part of our system, rather than build more pipe that's quite expensive from the River.

And so this is good quality water. The new treatment capacities and technology available, it could easily be treated, iron and maganese removed, and it's a resource.

The next page, it was taken in Whiteside County, Iowa. It is not a TransCanada pipe. It is a picture that I thought graphically showed what can happen on a pipe. This was a gas pipe, another company.

Do you see the size of the two men? The pipe is buried about 40 inches deep, and there's a large hole where the explosion occurred. This relates to the crossing issue that I want to talk about.

This next page, page 4, is a photograph that Ed Miller submitted with his testimony. It's in the record. It was a gas line that failed in December of '03. There was a small crater at the point of impact and then part of the area there was burned and there was impact.

If you go to page 5, I want to use this graphic to give you an example of what it is we're talking about in terms of crossing.

MR. KOENECKE: Well, I'm going to object. If you want to use a photo, why don't you use one of an oil pipeline? This is a gas pipeline. I don't think this is relevant at all.

MR. SMITH: I mean, you agree the characteristics that would occur in a gas situation are -- we don't have any evidence those would be similar of what would happen with a --

THE WITNESS: I understand. I'm using the image to show graphically how we would install the casing.

MR. SMITH: If it's just for that purpose, I'll overrule the objection. Just you're using it as a picture to show how the pipes would line up?

THE WITNESS: Yes.

A. The pipe at the top of the picture, near the middle of the picture would be the oil pipeline buried 4 feet deep from the surface. We would like to see our casing, the steel casing, installed 20 feet deep below the -- 20 feet below their pipeline so it would be about, oh, 25 feet.

The steel casing would be bored under the easement of TransCanada, the Applicant. Mr. Jones said there might be other pipes in the future. We'd like to see the casing wide enough so it accommodated their right of way. So if they put more pipes in in the future, we don't have to go back.

The casing would be a steel casing. And if I can use these two exhibits as an example, assume the black pipe is the water line and the white pipe is the steel casing. You put the steel casing in first, and then you pull the water line through it. And if that were -- that would be what we're proposing is the bored pipe, a pipe within a pipe, the outer pipe being a steel casing.

If anything happened at that site, a leak or failure or burn -- fire or something, we're deep enough and we're far enough below them that it shouldn't affect us. If they install other pipes in the future, we don't have to worry about it because if the casing pipe, the white pipe being the casing, is wide enough to fit under their 50 feet of right-of-way easement, we're not a factor anymore.

Rather than them bend the pipe and go under us, bend a 30-inch pipe, what we're saying is why not just leave the pipe straight and we'll go down? And we'll get far enough below you that we're comfortable.

And so that is what we're proposing. And when Mr. Gray mentioned this I was pleased to hear that. Because early on

when I discussed it with him after the public meetings he wasn't quite sure that they had to do anything to accommodate us being there first. And what I heard him say here at the hearings was that they would respect our prior easement and work with us on something like this and if the cost was not unreasonable, cover the cost.

Now if I misspoke or misunderstanding what he said, I reviewed the transcript, and I think that's what he said. That is a big change for us. Not just WEB but all the water systems crossed.

Now with a 2-inch pipe, 1-inch pipe that's not such a big issue. When you cross a 12-inch pipe, water pipe, with this pipe it will be more expensive. But I still think it would be cheaper than them bending their pipe to get under us and then putting our 12-inch water line at risk. If we're below them with a plastic pipe, we'd feel more comfortable. I would feel more comfortable. And I think my peers would as well. So that's the purpose of that.

The next page -- slide is 6. And I'm going to go through the rest of these fairly quickly. If you have questions, you can ask me. This was in reference to the Enbridge Pipeline in Minnesota and a rupture that occurred on July 4 of 2002. You'll notice in the center of the screen there's a statement -- or there's a name Clearbrook. Clearbrook is the community where the accident occurred here last week. So within a matter of

five years there were two failures in Minnesota on this system.

You'll notice also that there's more than one pipe. There's five pipes. And they also use tanks to allow the oil at various places in the line to leave the pipe and go into a storage.

I guess the ConocoPhillips executive quoted in the news story, which I have attached, stated that there could be up to 3.5 million -- this is a question. Are we to expect there may be more pipes?

And that is a concern. We see this as the pipe that sets the precedent. So we're very interested in what you end up doing.

Page 7 is again -- this was on the Cohasset -- National Transportation Safety Board did an investigation on this incident, this accident. It was near Cohasset, Minnesota. I may be pronouncing it wrong.

This was a controlled burn. This didn't ignite itself. They cleaned up as much of the oil as they could and then coordinated a burn with local officials. A large amount of stuff going into the air, air quality.

When I saw that picture it reminded me of two fires we had in the WEB area, one near Mobridge and one in Bowdle in 2006 during a drought. If we had something like that light up and the winds that we see here in the Dakotas, this could be a very concerning thing, both air quality and just fire risk.

And so --

MR. KOENECKE: Well, I object to that characterization. It says controlled burn right on it. Now he's trying to turn it into something that's uncontrolled and fear mongering. I object to that characterization of this photograph.

MR. SMITH: I'll sustain that. I read the report. This burn was clearly approved by the environmental officials of both the state and environmental officials.

THE WITNESS: That's right. And I don't dispute that.

A. What I'm saying is having that in our community would be a concern. And so I would ask if the Commission --

MR. KOENECKE: Here we go again. That's exactly what I objected to is the characterization.

MR. SMITH: Overruled. Weren't you going to get to what you think the Commission ought to -- something that maybe you're going to suggest the Commission might do?

A. I assumed they would do this, but I would rather not assume. If you grant a permit, if they're saying they're going to contact State Fire Marshall, the local officials, we need to know that it's documented that they will do it.

And we have burn ordinances in counties. Quite often there's a burn notice or ordinance you can't burn. It's because of wind and other factors. Before something like this, a controlled burn, were ignited we would hope that the permit

would acquire assurance that all the appropriate parties would be notified.

Page 8 is the same site only from a distance. Page 9 is a photograph that appeared in the Minneapolis Star Tribune, November 29. We took it out of the newspaper. It was the fire at Clearbrook. Page 10 is earlier in the morning, the Bemidji Pioneer story, November 29. Early in the morning, page 11, the same paper, local fire -- or sheriff is blocking the road.

And then page 12 is the site. This again came from the Minneapolis Star Tribune, the site of where a pipe had been cut out and new pipe was being installed and two flanges were being welded. And, again, this didn't occur because of a -- it was originally a pinhole, and they went back to repair it, according to the news story. And then something happened, an accident happened.

If you live in the community, it doesn't matter how the fire occurred. It happened, and it would be of concern.

The next page or next slide is 13, and we have submitted a disk, I believe, with this information, the spreadsheet as well as the photographs. We have GIS capability. In fact, Ted is our technician. And we took the map page and the route that TransCanada provided and laid it upon the photos, Government photos of the area, just to verify how far buildings are away. And there were 70 locations.

The map page is shown in the first column, the legal

description in the second, and then the distance between the pipe and what appeared to be structures using an ArcView measuring tool accurate within a foot.

And so it shows a number of locations. We really didn't find anything different. In other words, we didn't find -- they had one -- they said they had one structure that was within the 50 feet. We found one. It does show you the distances of various locations.

And one thing I'd like to identify at the top of slide 13, the required setbacks under 49 CFR 195, 50 feet from any structure, private dwelling, 300 feet from the buildings during pressure testing. I guess what it says in summary is that they recommend that you -- if you're going to pressure test a line, you have people who live in buildings within 300 feet move out. And then 600 feet from any building -- and I didn't understand the second -- or that third item, 660, why you'd have two numbers for buildings.

The last item on that list is not --

MR. KOENECKE: The reason is because those are for natural gas pipelines, aren't they?

THE WITNESS: Are you testifying?

MR. KOENECKE: I'm asking you. You're the one offering this exhibit. Those are natural gas numbers.

THE WITNESS: That's not my understanding, but we can refer to the federal regulation.

A. I wanted to make it clear that that last number, 800 feet, that is not part of the CFR. It is -- it's a footage that I would think is something we should be looking at in South Dakota.

MR. KOENECKE: I could just continue to object. He's got natural gas numbers. The Carlsbad failures is natural gas, and he's failing to tell you that.

MR. SMITH: The Carlsbad situation was natural gas, and it's not relevant.

THE WITNESS: Well, I did tell them. It's right there on the sheet. Carlsbad, New Mexico. And I'm not saying that --

MR. KOENECKE: It says a pipe failure. It doesn't say natural gas.

MR. SMITH: That was a natural gas explosion, very large-diameter pipe.

A. There were other issues related like SCADA, but we can talk about that later.

Page 15, just to explain the slide, I want Ted to blow it up a little bit so you can see it closer. Right along the pipeline, the pipe is in green and the 50-foot zone is in sort of a pink color. It's hard to see on this map at that scale. But if he gets closer right by the number 01, it's in Marshall County, and you can see 50 feet is the setback away from a structure.

And then the next zone or color would be the 300 feet, and

then the green would be the 660.

The only correction that we would have on pages 13 and 14 are obviously the change that was made that came out in the hearing about crossing near Yankton between the two hotels. We don't -- we show it at a greater distance because we have the old -- it would be our 77, map page 437, I believe, showed on the old route it was a different distance, and now it's a bit closer.

Okay. If I can move on then, we've presented each slide, all 77 slides, but I don't want to go through them obviously. Page 18 is a gas explosion that occurred at Carlsbad, New Mexico. And I want to identify -- the slide I'd like to show you is page 19. The distance between the rupture and the camp site was 750 feet.

And when these things ignite and whether it's oil or gas --

MR. KOENECKE: Once again, this is not relevant to the discussion.

MR. SMITH: I think, Mr. Hohn, again, a gas pipeline is not what we're here about today.

THE WITNESS: I'll move on. Okay.

MR. SMITH: If that happens in the future, this will become a lot more relevant.

THE WITNESS: Thank you.

A. Page 21 is a TransCanada Pipeline, and this is a gas pipeline. But I want you -- it addresses the issue of failure

of a pipe that was --

MR. KOENECKE: Gas pipeline. Again, still irrelevant.

THE WITNESS: Can I explain or --

MR. SMITH: I really think gas is not relevant to this. And -- Commissioner, do you want to overrule me?

CHAIRMAN JOHNSON: No, I don't. To me gas pipeline's relevant if we're talking about construction and about external corrosion. Because if the pipeline's made of the same thing, it may be relevant. Now if we're talking about what happens when there's a failure, it seems to me that's drastically different.

MR. SMITH: Okay. If that's the point, external corrosion or something. The corrosion or some of the corrosion features of gas are different as well.

CHAIRMAN JOHNSON: Or the likelihood of third-party damage, for instance, I don't know would be noticeably different.

A. Yes. What I'm talking about is materials. And I don't have the answer. I have the question for TransCanada.

MR. KOENECKE: Well, then I'd ask that he not testify. If he doesn't have the answer, that's what he's here for.

MR. SMITH: I'm going to let him -- just get to your point there.

THE WITNESS: I'll get it to it very quickly.

A. When you look at this photo -- and the photo you have is fair quality, but it's not the greatest. When you look at the

original photo, it's available on the Internet. I think it's been submitted in evidence. It looks like the pipe -- I don't know whether this pipe is fusion bond coated or not. TransCanada could address that. Here's the issue.

MR. KOENECKE: That's my point exactly. He doesn't know.

A. The question is why did it fail. And it looks like the pipe is straight at the point of failure, and then it broke away. And why would that happen? I mean, whether it's an oil pipeline or gas pipeline, if it's protected and coated, it's significant in that if it fails, why does it fail and did we learn anything from it? There's no National Transportation Safety Board report because this one was in Canada.

MR. KOENECKE: The evidence before the Commission has been there's no failures on coated pipe in the last 28 years.

MR. SMITH: I don't know. Mr. Chairman, you can -- I'm really struggling with what we're learning from this.

CHAIRMAN JOHNSON: I don't disagree with you, sir.

MR. SMITH: I'm going to sustain the objection.

A. Slide 22 -- the testimony was on exterior corrosion.

MR. KOENECKE: Same objection.

A. This is interior corrosion.

MR. KOENECKE: Same objection.

MR. SMITH: And is this a gas pipeline?

THE WITNESS: Yes.

MR. SMITH: Well, the characteristics are totally incomparable so it's sustained.

CHAIRMAN JOHNSON: This is internal corrosion?

THE WITNESS: Yes.

A. I think the testimony that was submitted earlier was we've never had failure on external -- external corrosion on pipe that's been coated with FBE. The question is do we have corrosion on the interior.

Page 23. I'm not going to go through all of these, but I wanted to provide them to you. This is -- relates to Marshall County and the Crow Creek Drain. The blue line is the drainage ditch system crossing the TransCanada Pipeline or vice versa. The legal descriptions are shown.

I want to walk you down to page 25, which is a point that's easy to find on a map. The highway that crosses there is Highway 10, 6 miles west of Britton. The photos we're looking at are -- the arrow points to the direction we're looking. We're going to show you photos of 3, 5, and 6, in that order.

And if you look at page 26, you're looking at photo 3. There's a legal description at the bottom of the page. If you came off the highway, this is what you'd see for access. There's a warning about low maintenance on this road.

If you go further on in that section, again, photo 3, page 27, that's what the road looks like June 28, the day after you had the hearing in Britton.

The pipeline is to the right. It's an approximate location. But that entire field had water sitting on it. We go to the next page then we're showing -- representing photo 5. This would be a mile on the other side of 3. This is the Moeckly property. Again you see on page 28 the road sign closure. These are fairly common in some of this remote rural area.

If you go to page 29, now we're looking at slide 6, which is looking to the east on the other side of that section. And this is the township road there.

These roads are not going to be able to handle, in my opinion, construction equipment, heavy equipment that may go in to do maintenance. The contractor very well may be able to build a pipeline through this area. The question is can you maintain it? Can you operate it?

The next slide, 30, is south of the Moeckly property a mile or so. And we're going to be looking at slides 11, 9, and 14. The pipe is within 270 feet of the canal, drainage canal.

If you go to page 231, we're looking northeast essentially toward Britton. That's what that channel looks like on June 28. If you go to the next slide, 32, we're looking --

COMMISSIONER HANSON: Excuse me, Mr. Hohn. Was that last one picture 11?

THE WITNESS: It was picture 11. Yes. I'm sorry.

A. The cover slide, like index 30 has a whole lot of photos

that you wouldn't need to see all of them so I deleted some to make this go quicker.

Page 32 is essentially looking south. It would be picture 14. And you can see the pipe -- the approximate route of the pipe is in this field on the right, and the ditch is on the left. And if you go to item 33, then you'll be looking down that ditch. If you stepped over to your left, you'd be looking down the ditch on a bridge. So there's a lot of water in June, and it gives you an idea of the water table.

If we go then to page 34, which is again further south, we're heading toward essentially the Anderson property, these are the drainage ditches and creeks that gather the water. We're going to be looking at 19, 20, and 21, I believe. So photo 35 is 19. Photo 36 is 21. And you can see that on the left side of 36 the pipe, the approximate location, is on the left. It's some 200 feet away from the drainage ditch. And this is June 28.

Slide 37 then, we're going further south. The pipe, TransCanada pipe, would parallel the Crow Creek Drainage District, which has been there since the '30s. And the photos we're going to be looking at are looking at section lines attempting to get access.

I think the first photo is 34. It's probably not in the right location. It will be closer to 35. But it's a section line road that would be -- give you access to get you in there

to maintain the pipe.

And 39 is 39 on the slide. Only I think again that would be closer. The two section line roads you'd access to maintain there are dirt roads. And this was June 28. I'm not saying it isn't accessible, but it's difficult to access year-round.

Page 40 is just an indication of some of the wildlife. There's a lot of wildlife obviously along this canal. Page 41, we're moving further south. Page 42 is photos of this canal taken on November 23. And the dates are shown in digital on the photo he has on the screen, but they don't show up if you print. They should show up on the disk we give you.

Page 43 is the drainage ditch in that area, November 23, still quite a bit of water. You can see it's -- the water table is reaching its natural level in the ditch next to the field.

MR. KOENECKE: Well, I'm going to object to that. It doesn't say anything about the water table on there. It shows a ditch full of water.

MR. SMITH: I guess I'm -- what do you want me to do, Mr. Koenecke, with that? I'm not understanding the objection. What are you objecting to?

MR. KOENECKE: Strike it.

MR. SMITH: His testimony?

MR. KOENECKE: Yes.

MR. SMITH: I'll sustain that.

A. I've been working in the water field for many years, and I

would testify that water seeks its own level, and the water in this drainage ditch is seeking the level of the aquifer. That's my opinion, and I'll move on.

MR. SMITH: Okay. Thank you. And you may very well be right. We have had a lot of testimony about the sandiness of soils, and I will agree with you on that.

A. Page 44 is the drainage ditch in this same area. There's a railroad grade on the left. Page 45, those would be spring photos.

If you go to page 46 in the lower center of the page, Section 14, 125, 59, that would be the Anderson property, Mrs. Anderson testified, and what we're looking at is the drainage in that area. Page 47 is looking north. It would be 61 on the photo -- or on the cover photo.

Page 48 is the same drainage ditch with a fall photo of November 23. You can see there's a fairly good current.

And page 49 is the section line road that would have to be accessed to get to the pipeline on Lillian's property. Page 50 is the drainage -- the Crow Creek Canal in that area. The left picture is June 28. The right picture on page 50 is November 23 of this year. Still quite a bit of water in the drainage.

51 is just a section line road in that area. If you look on 52, this is looking west toward the -- near Lillian's property. The photo on the left is June 28. The photo on the right is November 23. And this is that same bridge. It's a

very odd bridge. This photo is looking north. So the bridge is kind of like a T. But it's a good point to take a picture because the photo on the left is June 27, '07, and the photo on the right is November 23.

Page 54, these were -- they look like carp to me. I'm not much of a fisherman, but there was fish living in the channel on November 23. There was that much water available.

Page 55 is one of the eight wells that Mrs. Anderson spoke of. It's about 20 feet deep based on the plumb bob that we dropped down it. And the next one on 56 is a well that's used for livestock, a very shallow well, about the same depth.

57 is just another section line road in Day County. Looks very similar.

I want to draw your attention to 58. The pipeline is shown -- the approximate location is showing in the upper portion of the photo. This is a creek draining into Amsden Lake. And page 59, the photo was taken -- that photo was taken at that location on June 28. And on 60, page 60, that photo at the same location was taken November 23. This is the spring effect of the coteau feeding the lake.

If you look to page 61 then, you will see Amsden Lake, which is near Andover. It's a fishery, very important fishery for the community. You can see right about where Section 20 is there's a drainage coming into that lake, and the black line is the TransCanada Pipeline. And then page 62 is an aerial.

I'm going to skip ahead. These other photos, 63, 64 are giving you sort of a view of the coteau and elevation. Page 67, you can see in the irrigation center pivot in the lower right-hand corner, and it's near this rough terrain in Day County.

And then 68 shows the same area. The TransCanada Pipeline is crossing along on a north to south along 413th Avenue. And you can see the center pivots. Those center pivots developed to a large extent because of the ground water studies that were completed by the South Dakota Geological Survey. Those weren't there 20 years ago. And by having the ground water we've got that capability to increase agricultural production.

The question is whether center pivot could be placed on some of the other lands that are crossed by the oil pipeline and whether that would affect economic impact of the area. It does limit what the landowner can do.

I'm going to skip page 69. That is the community of Raymond. They do have a well, and the pipe is very close to it.

MR. KOENECKE: I thought you said you were going to skip that page.

THE WITNESS: Well, I just gave a little information.

A. Page 70 is my last slide, Mr. Koenecke, and it's Fordham State Park near Huron Colony. And the point on the map --

MR. KOENECKE: I object. It's not a state park. It

says it's a public shooting area.

A. Okay. A public shooting area.

MR. SMITH: I'm unable to read it. I'm sorry. I don't have my glasses on.

A. Every bit of water in our community is significant, but item 126 is the approximate location where Mr. Piper was canoeing, the photos he showed you earlier in his testimony. This does run and flow, and they are not dry beds. They do provide recreation. This is an important resource. You can see from the photo that the pipeline is crossing the drainage that reaches this dam.

And that concludes the slide show.

MR. RASMUSSEN: I would offer Exhibit 15.

MR. KOENECKE: We made a number of objections during that presentation. Some of them were ruled upon favorably. We certainly stand on our objection on the materials that relate to natural gas as clarified by Commissioner Johnson in his questions.

I'm at a loss as to tell you what a bunch of this is just showing on relevance grounds here. So I guess we'd object.

MR. SMITH: Staff, do you have a position?

MS. SEMMLER: Staff too would object to relevance for the natural gas items that don't appear to relate to this pipeline.

MR. SMITH: Well, I think what I'm going to do is

admit the exhibit -- or those portions of the exhibit that I did not rule as not relevant or subject to other objection. The portions that were not -- that I did not rule were not properly admissible will be received.

And basically we're talking the natural gas things. And even some of those, a couple of them, might be -- you know, I think we just recognize that they're -- they're not admitted for the purpose in any way of showing the effects of an incident involving a crude oil pipeline.

Q. Mr. Hohn, there's been quite a bit of study about the geology report from the '70s dealing with Marshall County. And I think portions of that document have been admitted into evidence.

But you have the entire report, do you not?

A. I have here today the entire report, printed report, from South Dakota Geological Survey for Marshall, Day, and Clark Counties. And I would like to make them available to the Commission and to the other parties.

It appeared during the hearing that parts of the document were available. If it isn't readily available on the Internet, I'm concerned that the Applicant and their experts may not have seen this information. I want to make sure the Commission does. And so we've made a set for each of you.

MR. RASMUSSEN: Well, let's mark those as exhibits then.

(Exhibits 16, 17, and 18 are marked for identification)

MR. RASMUSSEN: We have handed out several different documents, but I have put them together in three exhibits involving each of the counties. 16 is the Day County geology information. 17 is the Marshall County geology information. And 18 is Clark County geology information.

And I would offer all three of those exhibits.

MR. KOENECKE: I don't have Clark County.

(Mr. Koenecke and Mr. Rasmussen confer)

MR. SMITH: What do we have here?

MR. RASMUSSEN: I think Mr. Koenecke at least has everything in order. So, again, 16 is Day County. 17's Marshall County. And 18 is Clark County.

MR. SMITH: Okay. And we're talking -- I noticed that I've got three different groupings of material that look to me like they're components of the Marshall County report; is that correct?

MR. RASMUSSEN: That's correct.

MR. SMITH: Those are all one exhibit.

MR. RASMUSSEN: Yes. Everything dealing with Marshall County is one exhibit. Same with Day County.

MR. SMITH: I don't think we have copies of Clark, but I'm assuming -- what you're introducing here are the official county studies; is that correct?

THE WITNESS: That's correct.

MR. SMITH: And are public documents in the State of South Dakota?

MR. RASMUSSEN: That's right.

THE WITNESS: There was one clarification, Mr. Smith. We copied in black-and-white the full document and then made an attempt to copy the pages that were in the color, and that should be in the back of your --

MR. SMITH: We've got that. That's a separate thing. I already looked at that, and I assumed that's the reason why you did that.

THE WITNESS: The color was as good as we could get given what we had to work with.

MR. SMITH: Which one is which now?

MR. RASMUSSEN: Day County is 16, Marshall County is 17, and Clark County is 18.

THE WITNESS: Do you want to state that again? I'm sorry.

MR. RASMUSSEN: Day is 16, Marshall is 17, Clark is 18.

THE WITNESS: Thank you.

MR. SMITH: Mr. Koenecke, do you have an objection?

MR. KOENECKE: No, Mr. Smith.

MR. SMITH: Staff?

MS. SEMMLER: No objection.

MR. SMITH: Okay. I'm going to admit then WEB 16, 17,

and 18.

A. If you would look at Exhibit 17, the Marshall County study, the second page of that bulletin lists those involved in the study. It was done -- prepared by Neil C. Koch, U.S. Department of Interior Geological Survey in cooperation with South Dakota Geological Survey Marshall County and the Oahe Conservancy Sub District. The date of the study is shown as '75, but the study actually took several years to complete.

And I had the good fortune to serve as the manager of the Oahe Sub District when all of these studies were done. I observed some of the wells, the borings, and testing that was done. I also went with the South Dakota Geologic Survey and U.S.G.S. to meet with counties to explain how the report could be used.

The Oahe Sub District was a conservancy district established by the legislature to help communities make use of their resources. And so this document, while it is -- all the documents have various ages, '75, 1986, and so forth, they're still relevant and they're valuable data.

When Dr. Rahn testified and spoke with us about his testimony he presented here he saw these documents as being something that would be very valuable for anyone trying to route a pipeline through this area. And that's how I feel. It's good information.

Now there have been wells drilled since that time,

obviously, farm wells. And the gentleman from the Water Rights Office reported all that information is available. Any well that was drilled in the townships where this pipeline was routed would be available. They wouldn't necessarily be right on the route of the pipe. In fact, it's very unlikely they would be because the pipe isn't going through farm sites.

And so we're submitting this, and we look to this when we express our concerns about what might happen to the resource. We're using these documents to look at developing wells in these same aquifers to supplement our River source. And we're comparing the cost of paralleling more pipe from Mobridge all the way to Webster versus developing wells in these aquifers that we could then use to meet our peak water needs in the summer months.

Rural water systems peak in the summer because in the winter there isn't that much use and then all of a sudden May comes and the farmers start using water for spray and farm application. And people are watering their lawns. The cost of building a pipe just to meet from the Missouri River to, say, Andover or Mobridge or Webster just to meet that peak water need for three months is very expensive.

And as our system's grown we've been exploring wells in the Mansfield area and in the Andover-Langford area, looking at the aquifers that are there. Those are resources that are available to us and will help us get additional water that's needed for

things like soybean plants that are coming into the area, ethanol plants, hopefully feedlots as a result of the ethanol plants.

It's our economic growth for the area. We're very involved in all of these projects. Our development, our economic development, is not likely to be like Sioux Falls. It's rural. We are a rural part of the state. When I first started working on building WEB, ethanol was just an idea, a concept. Now we have five ethanol plants in the WEB area, large ones that create a market.

Two soybean plants, one at Webster and one at Aberdeen, are developing. The one at Webster would be used for food, food product, for baby food, and supplements for food for human consumption. They have to have clean, crystal clear water. And even a small contamination, toluene or benzene contamination, is going to make -- that would be a problem for that kind of a company.

We're seeing more and more genetic companies looking at our area, companies that want to site a plant to raise hogs for breeding stock and the inputs -- the waters are very important.

And lastly we have on the horizon working with the Aberdeen Development Corporation the possibility of meat processing. Not just beef slaughter but packaging and taking the product, value-added, adding value to the product, and being able to sell it, not just raise it here and butcher it here but package it

and ship it out, which would mean more jobs in the area.

In places like Webster a soybean plant will be a great shot in the arm. A pig genetics operation that requires college graduates to operate it, it's that sensitive, located in one of our rural areas can make a big difference to the economy. And they all need good water.

So that's why these studies are very important. And I think I wanted you all to have -- and the board wanted you all to have a copy of the reports for reference.

Q. Mr. Hohn, does the WEB system use the SCADA system?

A. We have a SCADA system that operates our 155 miles of ductile iron pipe ranging in size from 30 to 24 inch. We also use it to operate about 6,600 miles of plastic pipe ranging from 12 inch to 2 inch.

Q. Based on your experience with the SCADA system, do you have some concerns about problems that might develop with it?

A. Well, SCADA systems are wonderful tools. They're computers that allow us to run our water systems. To put it as simply as possible, it's like the thermostat on your house. Instead of getting up and turning the heat up and getting up and shutting it down, they automatically control things, they monitor things, and they're great tools.

But I think that to represent the SCADA system will find leaks, help you stop leaks -- they might find large ones, but they're not going to -- in my opinion having worked with these

for some 20 years, they're not going to find the pinhole leak that worries us.

We have a system -- is a SCADA view microcom system. The difference between our system and the Applicant's is ours is radio frequency because it's all within a 2, 300-mile area. It's reliable, but it's not reliable all the time. About a 90 percent reliability.

And what they're saying is if you try to get a signal from the mother station out to the field and you did it 100 times, you'd get through 90 times. Well, that's pretty good. I think they said theirs was more like 95 or 99. Sometimes the salesmen take it higher than it really -- they overstate what it can do.

The system -- we have five repeaters that are gathering all of this data and sending it to our headquarters in Aberdeen. The polling is 6 minutes. So it makes a round every 6 minutes, which is in that -- a contact or data gather about every 5 seconds from some point, which is similar to theirs.

We are gathering data from tank levels, inlet pressure, outlet pressure, flow rate, and temperature. And all of those are important to run a water system. We're also looking -- we have discretion points monitored, pump run, pump failure, high pressure, low pressure, high temperature, low temperature, water on the floor. If our vaults flood, it gives us a signal that there's a leak in the vault.

The system is a 24-hour monitoring system. We have seven

people on call. There's a technician at all times monitoring the SCADA system. We have used it to help track leaks in our system, but it provides data. You still have to have a human interface. You have to be out on the ground driving the line to find a leak, pinhole leak.

A major failure, somebody driving by is probably going to call you as soon as the SCADA would. But it will indicate that something failed. And in our case we can even shut things down. It takes a while to shut them down. And as was stated in Mr. Miller's testimony, the examination of SCADAs and their operation of oil systems, SCADAs can contribute or aggravate or add to the amount of impact.

If a SCADA system's operating a pump and it's saying when the pressure drops increase the speed of the pump, the variable speed in the SCADA can actually be feeding the leak. And so it's not failsafe. It's not bullet proof. And a computer is not going to eliminate all the failures. There can be some. Anything man builds or makes can fail, including the SCADA system.

The biggest problem for our SCADA system in our area of South Dakota is lightening. When lightening comes through a front you can just see it light up the map. Lightening hits the ground, and if it gets anywhere near the station where you've got SCADA controlling it, it can cause serious problems.

Our system is separated. The stations themselves are not

linked. The cathodic protection station is separate from the pipe. And the people that do our cathodic design say that that helps insulate the pump station from a lightening strike hitting in the field maybe a mile or so, some distance from your pump station, following the steel pipe and going into the control station.

Theirs is linked. It's one constant system, their cathodic system. I haven't seen the exact design. And I assume they have looked at that and they have decided that they can still protect it from a lightening strike, but that would be a big concern. It is a big concern for us.

MR. RASMUSSEN: I think Mr. Hohn has a few more exhibits but might I suggest we take a quick break and we can get that organized and wrap him up?

MR. SMITH: I think it's time for a break, short break. What do you think? Do you want to do 10 minutes? How's that?

MR. RASMUSSEN: That's fine.

MR. SMITH: Okay.

(A short recess is taken)

MR. SMITH: We're going to reconvene the hearing in the matter of HP07-001, in the matter of TransCanada Pipeline following a short break to let the witness get organized here.

With that, Mr. Rasmussen, please proceed.

MR. RASMUSSEN: We have just a few more exhibits

Mr. Hohn would like to discuss.

Q. First of all, Exhibit 19, can you identify what that is?

A. Consumer Confidence Report for the year 2005, WEB Water Development.

Q. What's your purpose for offering this exhibit?

A. The purpose is to give the Commission information on the requirements water systems meet for water testing. This has to be mailed out to all of our customers. We test for over 80 elements in water either through the State Health Lab or an independent lab. And we test for benzene, toluene, pesticides, and you'll see in the report the results of those studies. There's nothing in the WEB Water of that -- of a petroleum type.

Next to the item, each item, it lists the name of the item and then next to it whether there was any kind of a violation. And in most of them you'll see no. And I just wanted to make sure the Commission was aware that a water system, every water system will, your city system, rural water system, is required to complete this kind of a test and submit something to their members.

If you go to page 9 of the report, 10, 11, it lists the various items, contaminants, tested for and then a brief explanation of what each can do to human health. And that's taken from a summary provided by the U.S. Environmental Protection Agency.

This is published and put out each year to the water system

consumers.

MR. RASMUSSEN: I would offer Exhibit WEB 19.

MR. SMITH: Any objection?

MR. KOENECKE: No objection.

MS. SEMMLER: No objection.

MR. SMITH: WEB 19 is admitted.

Q. Mr. Hohn, you also have a map that you brought with you, a large map which was marked as Exhibit 20. I'm not sure. Has that been passed out?

Can you identify what that is?

A. This is a map published by the South Dakota Geological Survey regarding earthquakes in South Dakota from 1872 to 2000, the year 2000. And there are red dots on the map that show approximate location and intensity of the event ranging from 3 to 6. I'll wait until Ted has got those distributed.

What this map shows -- this was taken from the South Dakota Geological Survey website. It's one of the many maps available from their agency. And you'll note in the area of this pipe route they show what appears to me to be about a 4 event in northern Marshall County, and then in Yankton County what appears to be a 5 near the River where the Jim -- where the James River enters the Missouri River. The exact locations of these would need to be verified with South Dakota Geological Survey, and I have not done that.

But I think in some of the public information meetings that

question came up, and I had one of my staff search the file and see what they found, and this I thought would be useful to have in the record.

MR. RASMUSSEN: Offer WEB Exhibit 20.

MR. KOENECKE: It's tempting. He impeached his own evidence after he introduced it, but I have no objection.

THE WITNESS: I'm not a lawyer, Mr. Koenecke.

MR. SMITH: Objection, staff?

MS. SEMMLER: No objection.

MR. SMITH: WEB 20 is admitted.

Q. Which ones do you want to discuss next?

A. Whichever one you've got next.

Q. I've got this article. Has that been passed out?

A. I don't think it's been distributed.

Q. Marked as WEB Exhibit 21 is an article from -- entitled Scientific Reviews at the top. What's the relevancy of this?

A. This directly relates to an exhibit included with our testimony, in my testimony marked in my booklet, 18A, protection of livestock. This is a paper prepared by R.W. -- I'm not going to pronounce his name right, but Coppock, a veterinarian, Ph.D., specializes in toxic impacts of oil on livestock and animals. And I believe it's relevant to this hearing.

MR. RASMUSSEN: Offer WEB Exhibit 21.

MR. KOENECKE: No objection.

MR. SMITH: Objection from staff? WEB 21 is admitted.

Q. And, Mr. Hohn, you have also marked as Exhibits 10 and 11 an editorial from the Aberdeen American News, December 9 of '07 and then appears to be an article regarding wind power from the same issue of the -- I believe that's the American News also, is it not?

A. Yes.

Q. What's the purpose of offering those two exhibits?

A. The editorial published in Sunday's paper, December 9, 2007, makes reference to the importance of a bond to protect the public. I thought that was relevant and useful to submit. And also the Exhibit 11 deals with the steps being taken by utilities to establish alternate sources of energy to blend with their primary sources to meet peak needs, which I know -- I believe is useful and informational to the Commission and to this hearing record.

MR. RASMUSSEN: Offer WEB Exhibits 10 and 11.

MR. KOENECKE: I have no objection to 10, but I fail to see the relevance of 11. 11 talks about electricity and Northwestern Energy. I don't see anything about water or crude oil or pipelines, unless I'm missing it.

THE WITNESS: I feel the significance of 11 is that Northwestern Energy is the power provider for Aberdeen and the surrounding area. They are adding to their options for providing service, mixing wind, gas, and hydro, and it's what needs to be done to meet the energy needs.

MR. SMITH: Chairman Johnson, did you have a comment to make?

CHAIRMAN JOHNSON: I just had some questions to try to determine the relevancy of this, but if you have a ruling, Mr. Smith, go ahead.

MR. SMITH: The last time I heard at least you can't fuel a vehicle with wind energy. I think in my view it's irrelevant essentially.

I mean, the Commission here has been very actively involved in promoting wind energy development, but it has extremely minimal relevance in my view with respect to this particular Application. In fact, none. So I'm going to -- I'm going to sustain the objection.

THE WITNESS: Okay.

MR. RASMUSSEN: Is 10 being admitted, though?

MR. SMITH: I didn't hear from any other party as to whether they have an objection.

MR. KOENECKE: Well, 10 is subject to the same. It's hearsay. It's an opinion being offered by somebody else for some reason as fact here, and I'm not sure what the purpose is. But I guess I don't have any objection to putting it in the record.

MR. SMITH: You know, there's no objection so I'll admit it. Again, I think it's somebody's opinion. And we know what it is, and I think the Commissioners are capable of giving

it the weight it deserves.

With that, we'll admit it.

Q. Mr. Hohn, you have some items in a box near your feet, which can you identify what you have there?

A. What I have here is three pieces of samples of steel which we are presenting for the purposes of size, not as to material. We're not representing that these are the -- this is the quality of steel that would be constructed with the pipeline, the TransCanada Pipeline.

But on each piece of steel is stamped thickness, and it was verified with a micrometer. I believe it gives a good visual of what the size differences are. And the smaller of the three, the thinner of the three, is .376 or 5, if my eyes serve me right. The second is .500, which represents the .511 thickness that would go under county and state roads. And the larger of the three .625 -- I'm trying to read this. .625, I believe that's the pipe that crosses the Missouri River, the thickness.

And so I wanted to submit this as a visual, again, not representing that it's the same steel. It was provided to me by a plant in my service area. We checked the thickness. Those are representative thicknesses.

MR. RASMUSSEN: We've marked that as Exhibit 22, and I'd offer WEB 22.

MR. KOENECKE: I'll object to WEB 22. It's not the thickness in any case that's been testified to by any of the

witnesses.

Furthermore, the Commission certainly can perceive, I think, and using their own senses understand the thicknesses that were testified to by the people for the pipeline. And so I don't understand the relevance of this at all. If it's not exactly, which it doesn't appear to be, then I object.

MR. SMITH: Staff. Do you have an objection?

MS. SEMMLER: I would just object to it. As Mr. Hohn indicated, it's not the type of steel. I don't see the relevance in the exhibit.

MR. SMITH: I regret to say I can't remember exactly what the thickness of the steel is.

MR. KOENECKE: Well, my indications are that it's .386, .515, and .622 for the usual pipe, the road crossings and the boring under the Missouri River. That's my recollection of the evidence based on some assistance I've gotten from behind. But I've never heard anybody say that it was exactly three-eighths of an inch, half an inch or five-eighths of an inch, which appear to be the markings on the exhibit offered by WEB Water.

MR. SMITH: Commissioners, I mean, based on that it would appear that the exhibit is at least slightly misleading. And this one I might defer to your pleasure on this. I mean, I think if it isn't precise, of course, it's -- the most it can do is give us a rough indication of relative thicknesses.

THE WITNESS: Might I comment, Mr. Smith, a moment?

MR. SMITH: Please.

THE WITNESS: Yes. The intent is to give an image of the differences. And it is -- visually they're reasonably close. And it gives you an image of the thickness.

The question that's been raised in the hearing is whether the special permit which allows TransCanada to install a thinner pipe and then promise to do additional steps to protect the pipe and protect the environment. The question is how much thinner is it? I think this represents an approximate difference.

I think there are a lot of people, including myself, who feel that thicker would be better. And so that's the purpose of this exhibit.

COMMISSIONER HANSON: Mr. Smith, if you were looking at Commissioners for a second, I believe you were, the witness has testified that it's not the same type of steel, that it is intended to represent a visual of what the thickness is of the pipe. And if it is, in fact, to represent and give us an idea of the thickness of the pipe, he's also testified that it's not accurate as to the actual size of what the pipe is going to be.

So just based on that, I don't think that it's -- that it's relevant. If its intent is to give us a visual on a thickness and it's the wrong thickness -- I think we have the ability to get out a ruler and take a look at the thickness.

MR. SMITH: And I wanted to ask you with respect to especially the middle chunk -- and, again, Mr. Koenecke, refresh -- I think I heard what you said, but I'm assuming that's meant to -- it's what he's intending that to represent is the thickness of the pipe without the waiver. Is that what he's intending it to be, or what?

Oh, he's intending that for road crossings?

CHAIRMAN JOHNSON: Mr. Smith, that's actually my biggest concern. Mr. Hohn has indicated he wants to demonstrate that the waiver and the differences that's created, and I don't know that any of these three pieces before us would be the .72 design factor pipe.

MR. SMITH: Well, that was where I was going with my questions. And I just can't remember now what you just told me.

MR. KOENECKE: My understanding of the record or what the record would show is that the .8 design factor pipe --

.386, the .72 design factor would be .429. The road borings would be .515, and the directional boring of the River would be .622. That's what I believe the record would show, Mr. Smith.

THE WITNESS: Mr. Smith, might I have a response to that?

MR. SMITH: Sure.

THE WITNESS: So the River thickness we're off .003. It's very close. And this is the steel available immediately in

the area. I mean, we could have ground it down I suppose and tried to get it to the exact, but I think it gives a reasonably close visual.

The same with the -- I've heard in the testimony and read in the testimony the road crossing .511, .515. Again, the closest we were able to secure readily in the community was .5 even. And then this pipe.

So, you know, I understand the preciseness is important, but if we had the precise -- I don't know that it would change the image. And just to say whether you accept the exhibit or not, we -- what's being requested, when the pipe crosses a county or township road they've stated they're going to use .515 thickness. And then when it leaves the road and goes across the water line -- and our water line is 15 feet in from the property, to the fence line it's going to go down to the smaller pipe.

MR. KOENECKE: Are we still working on Mr. Smith's ruling on the objection?

MR. SMITH: We are. But Commissioner Johnson has a question.

CHAIRMAN JOHNSON: Mr. Hohn, the thinnest of these three pieces labeled .375 is supposed to represent an approximation of what TransCanada has proposed the pipe thickness would be.

THE WITNESS: As close as we can get in a sample, yes.

CHAIRMAN JOHNSON: Which of these three segments of the pipe would best represent the thickness of a pipe without a waiver throughout most of the pipeline route?

THE WITNESS: I don't know that we -- I don't have a sample that shows that.

CHAIRMAN JOHNSON: Which of these three would be closest?

THE WITNESS: I believe the one in the middle.

CHAIRMAN JOHNSON: This .5 would be the closest representation of the .72 design factor?

THE WITNESS: You're saying without the waiver?

CHAIRMAN JOHNSON: That's right. Yes.

THE WITNESS: Actually of the three here I didn't bring one to represent without the waiver. I didn't assume that was even an option.

CHAIRMAN JOHNSON: Okay. Sounds good. Thanks.

MR. SMITH: One other thing and maybe for -- my recollection of the testimony regarding roads and the Missouri River crossing is that the steel thickness at those locations was determined not with respect to pressure so much as the need to have steel having a certain strength to avoid buckling during the directional drilling process.

Am I misrecalling the evidence with respect to that or --

MR. KOENECKE: You're looking at me. Are you asking

me?

MR. SMITH: Yes.

MR. KOENECKE: I'd have to go back and look myself. I believe that's one of the reasons, but I'd have to go back and check.

MR. SMITH: I think given the questions that have been raised regarding the exhibit, again, the Commissioners are all perfectly capable of getting out a ruler and determining what these relative thicknesses are.

And I think with that, given the infirmities of the exhibit, I'm going to deny its admission.

THE WITNESS: Okay. Thank you.

Q. Other than what you've already testified to, are there any further recommendations or concerns that you would like to bring to the attention of the Commission?

A. We would like to reserve the option to provide additional written suggestions after we hear all the witnesses. But at this point in summary, I think some good news that came out of this hearing is Mr. Gray saying that TransCanada would look at paying to bury our lines so that we're lower than theirs, casing it, as long as the cost is reasonable.

And I understand you wouldn't want to give a caveat or a blank check. We're not asking for that.

We would like to be in a steel casing below them and then not have to worry about whether they put anymore pipes in the

same right of way in the future.

We would also -- and I regret I don't have a drawing to show this, but in his testimony Mr. Gray said that the road crossing pipe is a thicker pipe, 5.15, for a number of reasons, carrying weight and so forth. And if they were to cross a road and reach the fence line, our pipes are generally 15 feet further in. And we would -- we're asking, South Dakota Rural Water, WEB, and the water systems crossed, are asking that consideration be given, possibly a condition, that they extend the thicker 5.5 wall thickness beyond the water easement.

In other words, continue on and cross the water line that's sitting right there next to the fence. It wouldn't add a lot of cost. It would give us a thicker pipe. They're going to do it under the road anyway. All our pipes are right along the road so it wouldn't really add a great deal of cost.

What does that give us? It gives us a thicker pipe over the top of our water line, and that would be helpful. Maybe the engineers from the oil company might say you don't need it, it isn't necessary, but sometimes it's peace of mind provides benefit.

So those two things I felt were helpful and came out of this hearing at this point, and there may be other things that come about.

We continue to have concerns about why the alternates weren't discussed here in the community. By the time it got to

the public we had one route, and others had been discarded. That's just sort of a continuing thing that probably we'll take to the end of the hearing. And whether it's relevant to this hearing, I don't know.

But as far as water quality, the biggest other issue that we have is the decision by TransCanada's experts, their ruling essentially, that rural water pipelines are not highly consequential.

MR. KOENECKE: Well, that's a mischaracterization of the evidence. I object to that statement.

THE WITNESS: Well, I'm referring to the testimony by Ms. Tillquist. And --

MR. KOENECKE: And the testimony was not that she had ruled it. It's that we read from the rules themselves as the Federal Government handed them down. I object to that characterization.

MR. SMITH: I think the testimony was with respect to crossing of rural water lines, that that's not a high consequence by definition but that source waters is.

THE WITNESS: Right.

A. And I guess, you know, that is something that is an association -- as a state association we'll want to pursue. We think that needs to be clarified with the federal officials. Is that a proper reading of that section?

Because when you read that section it talks about a lot of

protection for domestic water systems. And we think it isn't just the source of water. If you can impact the water in the pipe, that should be protected. And so that's one issue that I think is still out there, that how the Commission resolves that somebody has to look at that federal statute and get an opinion.

And I think while TransCanada may read it and read it that way as the Applicant, that's not necessarily the way the water community reads it. I just happen to be the one here to deliver the message, but if you talk to any of the others, I think you'll find that's quite a concern.

And that's all I have at this point.

MR. RASMUSSEN: No further questions.

MR. SMITH: Thank you. With that, Mr. Koenecke, cross-examination.

MR. KOENECKE: Thank you, Mr. Smith.

CROSS-EXAMINATION

BY MR. KOENECKE:

Q. Thank you, Mr. Hohn. Your testimony this morning, you've referred to "we" a number of times. You'd agree with me on that, wouldn't you?

A. I probably did, yes.

Q. Who is "we"? Who are you representing here this morning?

A. I'm representing WEB Water Development, and with regard to the resolution, I've been asked by the chairman of the South Dakota Rural Water Association to speak to the resolution that

was submitted.

Q. As far as speaking then to what you call our ruling or interpretations of HCAs, you haven't been asked by them to speak to that?

A. Oh, yes.

Q. Well, what are the limits of your authority to speak on behalf of South Dakota Association of Rural Water Systems?

A. We have discussed the federal regulations regarding HCA and USA, protection of water sources. And Mr. Wade and I were the only two that were filed as Interveners. And Mr. Wade couldn't be here today or he'd be at the table with me on that issue.

He raised it in his testimony. We've raised it in ours. And it is a concern that our Association has.

Q. What's your position with the Association?

A. I am a member of one of the larger water systems in the South Dakota Rural Water Association. I'm a manager that attends manager meetings.

Q. Are you on the board?

A. No. But we have a director on our board who is -- represents our system on the board, State Rural Water Board.

Q. And you're also an individual Intervener in this case?

A. Yes. When I first contacted the PUC about this there was some question about whether our WEB Water needed to file through their attorney and through our chairman, and so just to be on the safe side we filed both. I filed as an individual concerned

about this project. WEB filed as a corporate party.

Q. And you've asked a number of questions during the past week at these hearings?

A. Yes.

Q. What have you asked or said that WEB Water couldn't say through its attorney?

A. Well, there are a lot of intricacies in terms of how something like petroleum affects the water system. And listening to the witnesses testify, I have a background in that area.

I've also studied the file extensively, or tried to, everything I could find on it. So it was offering additional information and trying to get additional information.

Q. Speaking about your background, you're not a lawyer; is that correct?

A. No.

Q. Are you an engineer?

A. No, I'm not.

Q. Have you studied crude oil pipelines?

A. I have now. Other than this project, no.

Q. Have you studied them formally?

A. I've studied this project, as much information as I could find and absorb in the time available.

Q. Have you taken a formal course of training from any institution on the construction or operation of crude oil

pipelines?

A. No. But I've taken training on the construction of large water lines, which are very similar in terms of routing, impacts on cultural resources, wetlands, constructibility.

Q. Are they similar on pressure?

A. No. Obviously the pressure --

Q. How about SCADA systems?

A. If I could answer the other question, the pressure of this pipeline will be 1,400 pounds. Our pipe runs normally around 120 or 160. So the pressure of the oil line would be higher.

Q. So what you're telling the Commission is you've applied your basis of knowledge and background from one to the other?

A. There are similarities. Routing a pipe, whether it's a large ductile iron water line or oil line, you have to deal with landowners. You have to deal with wetlands. You have to deal with cultural resources. There are similarities.

Q. I'm interested in your expert witnesses now. Was Edward Miller WEB's expert witness or not?

A. He was someone we contacted who had experience with statistics and Exxon and worked at Exxon for many years. I encountered him at one of the public meetings and asked him to provide expert testimony.

Q. And so did WEB sponsor and pay for his appearance here?

A. Well, I haven't got the bill yet, but I assume we will, yes.

He also -- and he contacted your staff to verify --
Q. Who's your staff?
A. I'm speaking to the PUC. He contacted the PUC to verify that he could maintain his Intervener status. Being an expert for us would not interfere with that. As far as I know, he had a dual status. He wanted to maintain his own personal interest.
Q. Your witnesses then were Perry Rahn and Arden Davis; correct?
A. Yes.
Q. And they offered a route which was not along the I-29 corridor. That's correct, isn't it?
A. Yes.
Q. So I'm left wondering what is WEB's position on an alternative route for the Keystone project?
A. WEB's position with regard to the I-29 route which was an alternate but was not brought forward to the public is that that should have been considered because it would not take as much land out of private lands. It wouldn't require as much private taking of land.
Also it would be along a major traveled highway where you would be able to get heavy equipment in to fix a leak, respond to an emergency.
Also the towns along that Interstate highway, Sioux Falls, Brookings, Watertown, have professional fire departments that could respond to an emergency. So for those reasons we still

think that should have been looked at.
With regard to what Dr. Rahn proposed, which was an alternate route based on geology, we agree that that should be considered. Geology should have been given more consideration in terms of location of line.
And, as I recall his testimony, what he was saying is is if you put the oil line in a heavier clay soil, route it through heavier clay soil, and there is a leak, it's not going to move as far and it may not move into an aquifer. Particularly in comparison to in Marshall County --
Q. I didn't ask about Marshall County.
A. Well, his route did look at Marshall County. And in relation there the proposed route is in an area that's quite a bit different than his route.
Q. Did you ask Rahn and Davis to consider the aquifers underneath the I-29 corridor?
A. Yes. And I had nothing to do with the alternate they proposed. That's something Dr. Rahn came up with. He's a senior geologist respected in South Dakota. That was his suggestion.
Q. So you'll pick either one depending on what the considerations are? Is that what I'm hearing?
A. Well, I think -- I also share the concern Mr. Wade has with if you move the pipe, how close is it to his well and what does it do to his well. Dr. Rahn looked at this project for a short

time, several weeks, and raised that issue as an alternate route based on geology. It merited additional review, we felt.
Q. Even though it was closer to the BDM water pumping intakes?
A. Actually the route that Dr. Rahn proposed would be -- if I'm looking at the map correctly, would be east of the BDM well. I've been to the BDM well site. I was involved with his drilling, the first drilling of that well. It's a very deep well, and there's a great deal of material, shale and hard material --
MR. KOENECKE: This is not responsive to the question, Mr. Smith. Move to strike.
MR. SMITH: I'll strike it, but I can't even remember your question now, Brett.
MR. KOENECKE: The question was even though it was closer to the BDM wells.
A. Yes. I think it needs to be examined and looked at. And it wasn't looked at. I think you can protect the well if you have the proper soil above it and there is a thickness of soil above the BDM well.
Q. Mr. Hohn, have you got a copy of WEB Exhibit 17?
A. Which exhibit is 17?
Q. Geology and water resources of Marshall County.
A. Yes.
Q. Would you open to page 42, please.
A. Okay.

Q. And would you look at the second full paragraph down starting with natural discharge?
A. Which side are we on?
Q. On the left-hand column.
A. Left-hand side of the page.
Q. Do you see where it says the rate of movement is only a few tens of feet per year?
A. I guess -- could you give me the paragraph again?
Q. Second full paragraph down contains three sentences in the left-hand column.
A. Is that second or third?
Q. Second full paragraph.
A. Okay. Natural discharge from the James Aquifer? Is that where you are?
Q. Correct. And do you see the second sentence where it says, The rate of movement is only a few tens of feet per year?
A. Water moves from areas of recharge to areas of discharge as shown on figure 21.
Q. Do you have any reason to disagree with any of the statements in that paragraph?
A. It's part of the report so, no, I don't.
Q. Is that a no? Thank you. WEB currently gets its water from the Missouri River, doesn't it?
A. Yes.
Q. In fact, you're doubling your capacity currently to intake

more water from the Missouri River, aren't you?
A. We are.
Q. And how many million gallons a day will you be taking from the Missouri River?
A. We've had -- our project as it was built initially 20 some years ago had the ability to remove about 8 million gallons a day. We've expanded the pump station to 16 million by putting in larger pumps. The treatment plant is being expanded to a total of 12 million.

So while the pumps have the ability of 16 million a day, the treatment plant will be able to produce a total of 12 million gallons a day.

Q. And is your pumping station upgrade project finished?
A. Nearly finished. We'll finish it here in the next month or two.
Q. You have additional water rights to take water from the Missouri River, don't you?
A. Yes. We have excess water rights.
Q. What's your total acreage rights from the Missouri River currently?
A. The exact number I may not have exactly at the tip of my tongue, but it's over 30,000 acre feet, I believe.
Q. And how many acre feet are you currently using?
A. In the largest water use year we had, 2006, we used 7,500 acre feet.

Q. In fact, you've got so much water rights from the Missouri River you've offered to give them away to a power plant to be sited in Walworth County, haven't you?
A. I wouldn't say we'd give them away. We might barter them for something. But we'd like to attract the Next-Gen Basin Electric Power Plant, either a coal plant or gasification plant to Mobridge for economic development, yes.
Q. You'd certainly degree you've got no shortage of water available to you at the Missouri River currently?
A. At the Missouri River, that's right. But getting it out into the system is another matter.
Q. You're currently serving Day County with water from the Missouri River, aren't you?
A. We are.
Q. How much of Marshall County does WEB Water serve?
A. We're up into an area near Eden. I can't tell you exactly the number, but probably at this point probably 10 customers in the town of Eden -- and the town of Eden.
Q. As I'm looking at the map which you provided on WEB 15, page 1, it looks like just a very little tiny portion of Marshall County.
A. Are you in the booklet now?
Q. I think it's your PowerPoint Exhibit 15. Sorry.
A. Let me get that here in a moment. I don't have it right in front of me. I don't see it as 15. I'm wondering if there's

another exhibit.
Q. I'll be glad to bring it over.
A. You're talking about the overview map?
Q. Yep. Use that one right there.
A. What you're looking at is the boundary of the water system. That boundary was drawn probably 10 years ago. It hasn't changed on this graphic. We've expanded some into that area. And when you zoom in to that exact location on our map you'll see probably 30 miles of pipe, the town of Eden is served, and 10 to 20 customers, something in that range.

We serve a part of Marshall County, and we list it as one of the counties we serve.

Q. And you'd agree, however, though, that the great portion of Marshall County is served by BDM?
A. That's right.
Q. How many miles of pipe do you have in your system currently?
A. We have about 6,000 I think 800 feet, thereabouts. 6,000.
Q. How much is ductile iron?
A. 155 miles.
Q. How much is PVC?
A. The balance.
Q. Do you have any polyethylene pipe in the ground?
A. We're starting to get small amounts of it. Primarily if we come to a home where we're trying to put the service in and the

ground water is difficult to build a pipe, it isn't safe to put a man in the trench, we'll use the poly pipe because it unrolls and you can throw it in the trench, backfill.
Q. So from a meter pit into a house?
A. Yeah. And we don't have very much. We just started using it. We use the 200 class sample that I gave the Commission.
Q. None of your water mains would be polyethylene?
A. No. No.
Q. And I apologize. I don't remember. Was your testimony that you have five SCADA information points?
A. We have five radio repeaters that take data from some 75 locations and then send them back to the headquarters. So the repeater at Java, for example, takes data in the Mobridge area and repeats it and sends it back to our mother computer essentially at the office. So there's five stations repeating data at their gathering from 75 locations.
Q. Then is it the repeater stations then that have problems with electricity?
A. No. It is the pump station, the valve, the tank. Each of these stations that are being monitored have what's called an RTU, or remote terminal unit, small computer, that if there's a direct lightening hit in the area, they can be affected. Sometimes the repeaters will be affected, but generally it's the 75 stations.
Q. Have you taken steps to try and fix that?

A. Oh, yes.
Q. And what steps have you taken?
A. We've tried everything that salesmen bring into our office. When a lightening strike hits one of these systems it can literally take it out. And so you do what you can do. Some things have helped, and some things -- we get tremendous lightening storms in this area, and when they move through there's really not much you can do at this point that we've found.
Q. Going to your Exhibit No. 20, the earthquakes in South Dakota?
A. Yes.
Q. Are you a seismologist or a seismological engineer?
A. No.
Q. Do you know anything about earthquakes?
A. I worked in Oregon for --
Q. Past this exhibit?
A. Well, you asked me if I knew anything about it. I lived through two in Oregon, and I responded to emergencies through two. And it's an interesting process. Very challenging.
Q. Have you lived through one in South Dakota?
A. Well, apparently because there have been a few that -- I can't say that I recall being affected by one. I wasn't near Britton when that one occurred, and I wasn't near Yankton.
Q. You've got a number of pipelines running through WEB Water

service territory right now, don't you, Mr. Hohn?
A. What do you mean pipelines?
Q. Natural gas, refined oil.
A. We have several pipelines. We have a KANEB Pipeline, which is right near my office. We have the Northern Border Pipeline. Northwestern Public Service has gas lines in the area. MDU has some gas lines, smaller ones, lower pressure.
Q. Have you taken any precautions on your water system with respect to the KANEB Pipeline?
A. KANEB existed before our project was built. When we cross them we take precautions in crossing. Obviously we don't cross unless they're present. But they were there before we were. And so we were not -- we were not there when they built, and we were not able to make recommendations on how they might cross us.
Q. What do you do to your pipe when you cross the KANEB line then?
A. Well, the KANEB line is a smaller pipe. It's a fuel pipeline. The pressures, my understanding based on our conversations with the people that operate it, are lower in pressure than this pipe, TransCanada pipe, would operate. And we approach it very carefully. It's a --
Q. Have you cased your pipe?
A. Some cases we have.
Q. Would those be on file over at the DENR with other records

you've filed with them?
A. I don't know if they'd be on file with the DENR. We're not required to file, I don't believe, that information. We do have a new pipe material called yellow mine, which is a lock joint, sturdier pipe. It's easier to use when you bore under something. And it's locked together, and you can drag it under the fuel line.
And that's supposed to resist impacts from petroleum. But it's very expensive, and we use it where we can.
On bigger pipe we haven't had that many where we've crossed KANEB, but on bigger pipe we would bore under the pipe, run a casing under and then shove our pipe through as we're proposing here.
Q. So your testimony would be that you've done that?
A. Yes.
Q. Have you done that in connection with the Northern Border Pipeline?
A. Northern Border was also in place. I think it was built in '82, '83 before WEB reached Brown, McPherson County, and Spink County. That pipeline crosses on kind of an angle from Leola to let's say Doland, and it was in place before we reached that area. And we -- depending on the size of the pipe and the criticalness of our water line, we may have cased the pipe to protect it in the event of a failure. The larger pipe.
Q. You may have? Do you know whether you've done that or not?

A. Well, when that part of the system was built I was in Oregon so I'd have to reference the file. But we have plans that were filed with the State -- the State of South Dakota, approved by the State, and my understanding is we did -- we do have some borings under that pipeline.
Q. So in the case of your Northern Border crossings your plans are on file with the State and would show whether you cased lines?
A. Well, yes. Unlike TransCanada, our plans had to be approved by the State. So our plans would have been reviewed by the State before we built the pipeline, our pipeline.
Q. So can you tell the Commission how far on either side of the crossing you've cased your pipe?
A. I'd prefer to reference the file. I'd be glad to provide additional detailed information. But, again, I wasn't here when that was built. And I'd have to go to the file.
Q. But you haven't bothered to check since you've been back?
A. Well, we've been a little busy, Mr. Koenecke, and I'm telling you what I --
Q. That sound like a no.
A. Since I've been back? Since '97?
Q. Yes.
A. Haven't had a reason to -- it's there and we were built and any time we go near the Northern Border Pipeline it's a big event. It's a One-Call. We don't touch the right of way until

they're there and present. In fact, I think Northern Border actually will expose their pipe before we cross. And they supervise the contractor who does the boring for us. Don't want to hit it. If you hit it, it's not good. Big -- big fire.

Q. I'm looking at your Exhibit 8, the Rural Water letter and resolution. Have you got a copy of that in front of you?

A. I do.

Q. Did you, in fact, write the resolution?

A. I was involved with a committee of several managers in drafting, and we sent drafts around using the Internet. And then eventually the resolution was taken up by the policy committee of the South Dakota Association of Rural Water Systems which marked up and prepared what I would call a final draft which was then submitted for final approval on December 6.

Q. And your testimony is that final approval was indeed done?

A. Yes. There was a letter faxed, signed letter submitted to Chairman Johnson by Don Hentges with this attached and then this document was sent by Word document to my e-mail and I was asked to present it.

Q. Were you there and present when it was done? I presume not.

A. I was here with you all.

Q. I believe that's correct. Did you provide the information to back up the assertions made in the resolution?

A. I was involved in preparing a draft and providing some

information -- some of the information for the initial draft. Denny Davis, Executive Director of South Dakota Rural Water, and a committee of managers, Greg Merrigan from Vermillion, Dave Wade from BDM, Britton, I think the manager from Clark.

There were a number -- there was a committee assigned or tasked to review this. Martin Jarrod (phonetic) from Big Sioux. And I was not there when they finalized it. It's slightly different than the one I submitted in draft. So it was a committee effort I guess is the best way to say it.

Q. Do you know anybody else that provided information?

A. Oh, yes. The men I spoke of. Denny Davis would have searched the filing. I think they looked at some of the documents that were filed in this hearing. And the DNV report was reviewed by a number of those people.

Q. What did you provide to them specifically?

A. I recall I provided them a copy of the DNV. I encouraged them to look to the PUC website because there was a lot of information available. As the prefiled testimony started coming in and I saw things that might be relevant I suggested that they look at it. We didn't have a -- I didn't have a lot of dialogue with them. The people that finalized this did it when I was not present.

Q. Well, I think you said just a couple of minutes ago that it's been slightly changed since you provided the draft to them.

Can you tell us what some of the changes might be?

A. Mostly it was wordsmithing. And they added the LUST reference to the underground tanks. That wasn't in the original draft. But the majority of the document, the substance of the document, didn't change. The proposed 15 cent fee, you know, the concerns about HCA and USA issues.

Q. The resolution references the American Water Works Association Study in the middle of page 2. You'd agree with me that it does that, wouldn't you?

A. Yes.

Q. And have you read that study, Mr. Hohn?

A. Oh, yes. Everybody in Rural Water's read that study.

Q. Did you provide a copy of it to the Association, South Dakota Association?

A. I provided them the copy that you provided this Commission.

Q. I've been looking at that. Have you got a copy of that in front of you there?

A. Let's see. Whose exhibit is it?

Q. Ms. Tillquist's rebuttal, I believe. TC 7 R1.

THE WITNESS: Okay. I'm going to ask if I can get that from the attorney. The longer this hearing goes, I think you need a larger table.

MR. KOENECKE: I agree with that.

THE WITNESS: The last guy's going to be sitting here with a --

MR. RASMUSSEN: Do you want the study or the website

or both?

MR. KOENECKE: Just the study.

MR. RASMUSSEN: Okay.

MR. KOENECKE: Probably the website as well.

A. Okay. I have both.

Q. I'm looking at page 2 from the website. It says on the top, Project Profile Impact of Hydrocarbons?

A. Yes. 2 of 3.

Q. Do you see where it says Results and Findings about a third of the way down?

A. Yes.

Q. PVC pipe material -- I'll read from it for your benefit. It says, "PVC pipe material is impervious to gasoline because there's not enough BTEX in gasoline to swell PVC and cause permeation."

Is that an accurate statement of what's said there?

A. That's what it says there.

Q. And so are you -- do you have any reason to dispute that finding from this study?

A. We have -- I have observed and so have other rural water managers incidents where gasoline caused a PVC pipe to swell and take on a taste, odor. The incident that I observed here at South Dakota was here in Conde where some kids had went out and turned the valve on the fuel tank somebody kept in the backyard to put gas in his lawn mower and tractor and it all spilled and

dumped into his ground. And within a few days the customer was complaining of gasoline in taste and smell.

Q. And that's a risk that could be anyplace in your service area, isn't it?

A. Its a risk that could be anywhere fuel is.

Q. Didn't you tell us that was polyethylene lines?

A. No. It was dug up, and it was white pipe.

Q. Were you there when it was dug up?

A. Yes.

Q. I thought you said Conde wasn't part of your service territory?

A. We serve the town of Conde and we dump water in the storage tank as a bulk customer and then they have their own distribution system. So they're one of our bulk customers, and they run their own water system.

But when they had this problem they called us fearing it might be our system. And we went right out and we were there when the State people came to investigate and we were there until they got the pipe routed. The solution was to reroute around the spill some distance to bring water into the home from a different direction and abandon the plastic pipe.

Q. I'm looking at page 4 of the study. And would you look at the map of the United States on the top of that page?

A. Are we on this report now?

Q. Yes, we are.

A. Okay. Page 4?

Q. Yes.

A. Yes.

Q. There appears to be a blue dot over Aberdeen showing that a responding utility gave information for this study. Would you agree with that?

A. Well, it's in close proximity to Aberdeen. It's kind of a small map.

Q. Was it WEB Water?

A. I don't believe so. If it was, I'm not aware of it.

Q. Okay.

A. Might have been the City of Aberdeen.

Q. I'm looking now at the top of page 9.

A. Yes.

Q. And the statement there is that, No permeation of BTEX compounds was detected during 10 months of exposure and continuing experiments.

Do you have reason to disagree with that?

A. Well, except if you read on in the report, it talks about the -- the same report it talks about that time is a factor, days. The longer it's exposed, the more likelihood that it can occur. In fact, those two graphs on that same page point to that.

And later in the report it talks about service lines. It doesn't say they are P.E. lines.

Q. We'll get to later in the report.

A. Okay. Yeah.

Q. It clearly indicates on page 9 that 10 months and no permeation, doesn't it?

A. Well, I think you're just reading a part of the report, and taken in its whole, the stuff -- the toluene and the benzene and the products we can't have in water are getting in the water.

Q. Well, let's get to the conclusions then on page 17.

A. Page 17.

Q. Yep. I'll give you a minute to read those paragraphs under conclusions. Then I'm going to ask you about them.

A. Okay.

(Witness examines document)

A. Okay.

Q. Do you have reason to disagree with any of the statements in those four paragraphs?

A. Well, what they're talking about is the tests they ran in a laboratory setting. They do -- the body of the report, if you read the whole report, shows that it will penetrate the pipe. Some previous pages show that -- even show how far it went into the pipe and that if you have a service line that is not active -- actively running all the time, doesn't have flow through it all the time, you can get levels that exceed -- what essentially the report says is as long as you have water running in the pipe and there's flow, that a level may be low enough to

stay below the maximum contaminant level. That's not a lot of reassurance for us.

Q. So you disagree with the statement -- the first statement in the conclusion that permeation of water mains is rare and reports of successful uses in contaminated areas are infrequent?

Do you disagree with that?

A. Well, I don't disagree with the first part of the statement that they're rare when you look at thousands of miles of pipe. But if you happen to be the town or customer that has the pleasure of having contamination, it's a big problem.

Q. So if the third paragraph where it says, Laboratory results indicate that PVC pipe can be safely used in soil contaminated with gasoline regardless of the level of contamination, you'd disagree with that?

A. Yes.

Q. PVC is also highly resistant to permeation by benzene, toluene, and TCE in all but the most extreme conditions of ground water contamination.

You disagree with that?

A. Yes. And let me speak to that. Extreme condition would be a fuel spill right at the crossing of the water line like the one I witnessed in Conde, South Dakota.

Q. So you're testifying now that the levels of BTEX and crude oil are higher than that found in gasoline?

A. No. Are you talking about crude oil?

Q. That's what I said, yeah.
A. I don't know, Mr. Koenecke. Your client has refused to provide a sample to be tested.
Q. You had an opportunity to test the submission by Tillquist about the contents of the crude oil last week, didn't you?
A. We want a sample of where the product is coming from so it can be tested by an independent lab. Not your consultant and not some party in Canada.
Q. But you were here and failed to object to the introduction of that evidence.
A. I'm objecting now.
Q. Very well. Finally, let's talk about your pipe samples here.
A. Yes.
Q. Will you tell me again which is which? Which number?
A. I'd have to refer to -- I don't know.

MR. SMITH: The P.E. is 14, the -- the black P.E. is 14. The white PVC is 13.

Q. Is your testimony that the white PVC pipe is what your water mains consist of?
A. The vast majority of our water line is this material, white PVC.
Q. And the polyethylene is a -- the material that goes from the meter pit into the house?
A. Yes.

Q. And you'd agree with me -- or I should back up. Remember when you were testifying about scratching the white PVC?
A. Yes.
Q. Were you telling us that this is stronger pipe?
A. What I'm telling you is that while this is thicker, the black pipe, and it's a -- the black pipe is 200 psi rating, but the white PVC I feel is a better product because -- even though it's a thinner wall because it holds up under test pressures.

The black poly, when they make black poly they are allowed to grind -- re-grind white plastic and put it into black -- that's why the pipe is black. And you sometimes will get an inclusion or a pit of carbon in the black plastic. It doesn't show up obviously because the pipe is black. I feel that the white pipe is more reliable. It's made from virgin plastic, virgin resin.

Q. So thinner is better than thicker?
A. In the one case it is, sir. Mr. Koenecke, I'd like to add to that the farm -- once we get to the home, the house or the farm or the ranch will have quite often black poly pipe that's thinner than this sample that they buy from their local hardware stores. And some of that's been in the ground for some time serving the farm or the ranch.

And that would not -- would have less strength than this. Again, it's not all this thick. Most of the farm piping that we see is thinner. I couldn't get a sample of that today, I don't

think, or we would have brought it.
Q. But your testimony is still that thicker can be less weak than thinner?
A. Well, in this case we're talking about two different products. The white pipe is made from virgin resin. The black pipe can be made with ground up plastic and a mix. So while it might be thicker, it's made from different material.
Q. Just like different grades of steel.
A. Possibly.
Q. I've got a few questions about your proposal regarding overlying the water lines at road crossings.

How many WEB Water mains are crossed by Keystone? Do you know?

A. Well, the pipe routing has moved some, as you know. Some of it -- in our area, some of it because of conflict with wetlands, picking a road crossing and so on. At one time it appeared to me that it was 10 to 12. It looks like it may be less than that, in terms of crossing. Somewhere in the range of 10 crossings.

We have a stretch near Amsden Lake where it's paralleling us nearly a mile, which is a different concern.

Q. What's the distance between the lines in Amsden Lake?
A. All our pipe are on section lines. The distance between the two paralleling? Is that what you're asking?
Q. The distance between the two parallel lines.

A. I'm not sure I know. We -- we have it on our CAD system, and we could verify that. But they look quite close. I would say it looks like it's within 600 feet, 500 feet.
Q. I want to ask about a statement you just made. Is all of your system contained within highway and section line right of way?
A. No. We follow -- when we install our pipe we'll try to put it in the field if we can, but we follow the fence line. In other words, if the fence line is the property line, we try to be 15 feet into the property with a 30-foot easement. So most of our pipe is actually on private land.
Q. Inside the fence?
A. Yes. And we parallel the fence. Our pipe is along the fence, you know, in contrast to, say, TransCanada crossing the quarter or the section at an angle.
Q. Have you yet provided Keystone or anybody acting on its behalf with the location of any crossings?
A. We have a map we just prepared based on your last routing. And I was going to bring it with, and believe it or not, we had so much stuff I think I left it. But I'll be mailing it to Mr. Gray.
Q. I appreciate that. Believe me, I know about how much stuff there is involved here. Thank you.
A. We're responding to a letter we received from the right of way people in Mr. Gray's office. And we wrote a letter back

telling him we would prepare it. We asked for a meeting to discuss how the pipe would be designed over us, and we wanted to verify your last -- you know, the final location.

And we were assured that in our area the route that we're looking at now is the final route.

Q. You're asking for 20 feet of vertical clearance from the Keystone Pipeline?

A. Yes.

Q. Is that based on some of the natural gas photographs you've shown us today?

A. It's -- well, that was a sample or a schematic, if you would. It's based on trying -- you know, comfort level, I guess. Talking to our engineers and various engineers who work for rural water systems, not just WEB's, but in terms of trying to find a safe place to be if the oil line comes through, we need to be deep enough and far enough away that if --

And I know you say there's not likely to be a fire and an explosion, but if there is at that particular location, if we have a steel casing and our pipe in the casing and we're deep enough, it may not affect us. The worst case scenario would be if it got hot enough, it might melt the plastic pipe and just pull the pipe out and slide a new one in and replace it.

Q. Are you saying that you need the casing from protection from fire?

A. The casing provides a little protection from fire.

Primarily it's there so that if the pipe were damaged, you actually could remove the plastic pipe from the casing, replace it, shove a new one in, and really not have to dig anything up to do it.

Q. Do you know whether you've gone 20 feet below the Northern Border Pipeline in any place?

A. No, we haven't. And I wish we had after seeing these photographs of gas explosions.

Q. Is the white PVC pipe the pipe that Keystone will be crossing?

A. That's a sample of an inch and a half. Obviously as the pipe gets bigger it gets thicker. So a 4-inch pipe might have a wall of, you know, .35. As it gets larger, the wall gets larger. A 12-inch would have maybe a half-inch thickness of plastic. So the bigger the pipe, the bigger the wall thickness on the plastic pipe.

Q. Do you know whether there's any place in your service area where Keystone is proposing to cross the polyethylene pipe?

A. Not our system. I believe there are farm systems where we were asked to provide a meter at the edge of the pasture, and the farmer then went to the EQUIP Program or some federal program to get funding to extend the water line out into the pasture.

I know of several of those near Andover, and those could very well be poly pipe. We come off our main line, stop, put a

meter down, and then the farmer hires somebody to extend the water line. We don't have anything to do with how they build it. And sometimes quite often depending on cost, EQUIP and the farm programs will have them use black poly.

Q. But you don't know of any place where that's the case. You merely suspect. Am I right?

A. No. I do know. I know of two or three in the Andover area where we have a meter pit and then it's extended out into the pasture.

Q. Okay. Very well.

A. And we'll provide those to you on the map we're providing.

Q. Did you bore 20 feet under the KANEB Pipeline in any place? Do you know?

A. Again, KANEB was in place long ago, before WEB arrived in the Brown County area, and that's my understanding. And so we would have crossed it. I'm sure they bored under it. They didn't expose it. Again, I wasn't here when that was done, but the maps would show that.

Q. So you don't know of any location where the WEB system is bored 20 feet under the KANEB Pipeline?

A. Actually I would be surprised if there aren't locations where we were 20 feet under it.

Q. Why is that?

A. Who wants to hit a gas line? We don't want to hit a gas line.

Q. But you're speculating, though?

A. No. The drawings -- each drawing and each crossing on the plans show instructions to the contractor as to how to build it. And every time I have encountered one of these crossings on KANEB the contractor actually went deeper than the plans showed. They're afraid of hitting it.

Q. What did the plan show?

A. The plans would have showed a minimum of 6 feet -- 6 and a half feet of cover. And the gas line is buried -- the petroleum -- not a natural gas but a gasoline line, KANEB, that's what it moves, is shallow. Probably in the 4-foot range, 3-foot range.

Q. But you testified that you weren't here when that happened?

A. No. I'm looking at plans, and I'm talking -- I'm recounting conversations I've had with my operational staff who were.

Q. I'm unclear as to whether you're maintaining your assertion that a rural water distribution system is an HCA under federal regulations.

A. I've read the federal regulations and discussed it with my colleagues in the rural water field, and we feel we are -- we qualify under HCA.

Q. And why is that?

A. Because of the way the language reads and the references to wellhead protection and source water protection. Those are all

programs we work with the Federal Government, the State Government on, and it's a -- it's a federal requirement. I mean, you need to protect drinking water. Without water we -- you know, we don't have -- you can't have life in the area.

Q. Wasn't your testimony earlier here this morning that you're going to raise your concern to the Federal Government and get it changed?

A. We're not looking at changing it. We're going to present a transcript of what was said here at the hearing by your experts as to whether we do or don't qualify, the pipeline itself, and we're going to submit it to the federal agency and possibly meet with them to clear this up.

Because if that's actually -- if your witness is correct, that's a big issue for protecting water systems in general, not just rural water.

MR. KOENECKE: I've got no more cross-examination. Thank you.

THE WITNESS: Thank you.

MR. SMITH: It's almost 12:30, Commissioners. Are we ready for a break? And what's your pleasure in terms of length of recess?

CHAIRMAN JOHNSON: Seems like it's been tough to get people back much before an hour 15.

MR. SMITH: So that would be approximately a quarter to 2. Is that what I'm hearing?

Okay. We'll be in recess until 1:45.

(A lunch recess is taken)

MR. SMITH: We're back in session in Docket HP07-001, Application of TransCanada, Keystone Pipeline, LP. And we had just concluded the cross-examination by the Applicant, TransCanada. And at this -- pardon me.

CHAIRMAN JOHNSON: This might be as good of time I need to mention so I don't forget it, Mr. Smith. But I received in postal mail today a note from Pam Hofer. Noted that there was a piece of paper she forgot to introduce during her direct testimony.

I don't feel like it's probably appropriate to enter it in at this point, but I want to let everybody know it will be entered under public comment. I think it's mostly a reiteration of what she presented orally with regard to how close different building sites and homes are to the proposed pipeline route. So this will be entered in under public comment.

MR. SMITH: Thank you.

At this point I will look to, I guess, staff and inquire whether you have any cross-examination of Mr. Hohn.

MS. SEMMLER: I do. Thank you.

CROSS-EXAMINATION

BY MS. SEMMLER:

Q. In your direct -- in your testimony here today, Mr. Hohn, you sited some setback information, setback as it relates to

private dwellings, et cetera.

Do you recall that?

A. Yes.

Q. Are you familiar with CFR 195-210 that actually contains the requirements for that information?

A. I'm aware there are requirements in the code.

Q. Did you intend to correctly site that information here today?

A. That was the intent, yes. If there's an error or mistake, please reference it.

Q. In the Consumer Confidence Report submitted as TransCanada evidence here today there's a variety of other types of materials and chemicals that it appears as if your organization has made it a priority to track and protect against; correct? Materials other than what we spoke of today.

A. Yeah. Actually we're required to test for these.

Q. Okay. There's other materials other than what was suggested today?

A. Yes.

Q. What types of protective measures have you taken to prevent impacts from those materials that could possibly result from a location near an ethanol plant or feedlot?

Have you changed your pipe design in those areas?

A. Well, most of the elements we're testing for are in raw water. They would be like materials that got into the water and

your pesticides, for example. Runoff might reach the creek, run to the Missouri River, and we're testing the raw water and treated water to make sure we don't have any of those things.

So the majority of this is really looking for something in the source, the River, the Missouri River. As far as projects that we -- plants like an ethanol plant that we're getting near or bringing a line into, we installed the master meter for that installation off site right on the edge of their site. And then they pipe into their plant. So we really don't get into the plant site. We stay outside the plant site.

And primarily we don't want to get into their plant site because they want to control what happens within it, but we wouldn't be anywhere near any of their chemicals.

Q. And the same for feedlots?

A. Yeah. The same thing with feedlots. We -- a large feedlot we would come to the edge of the property and stop. Our meter pit then would allow them to connect their pipe to our pipe. We have check valves in the meter pit so that no flow can come back into our line from the feedlot. There's a double-check valve, in fact, is required. So the chance of contamination from a feedlot is pretty limited. In fact, nearly impossible.

The main thing this is -- this testing is doing is looking at what's in the raw water.

And I might say --

MS. SEMMLER: Staff has nothing further.

MR. SMITH: Do other Interveners have cross-examination of Mr. Hohn? Not seeing any.

Commissioner questions.

Commissioner Johnson.

CHAIRMAN JOHNSON: Good afternoon, Mr. Hohn.

THE WITNESS: Good afternoon.

CHAIRMAN JOHNSON: Did you review the HCA maps that are on file as part of this Application?

THE WITNESS: I did.

CHAIRMAN JOHNSON: Okay. Did -- you had noted earlier you believe that the categorization of rural water system as an HCA or not as an HCA was made by TransCanada's experts; is that right?

THE WITNESS: That's my understanding.

CHAIRMAN JOHNSON: Were the pipelines of the -- of your rural water system, were they contained on that HCA map? Were they located as an HCA?

That's probably a question I can't ask. I guess I would look to Mr. Koenecke and his team to see whether or not he thinks that would be in violation of confidential information.

MR. KOENECKE: It seems to me, Commissioner, asking him what's not there is probably not a violation. If the answer is no, then it isn't. If it's yes, then it might be. I can't guide you much more than that.

MR. SMITH: Yeah. I think that's true, unless the

questions become so specific that you're, in effect, indirectly disclosing what's on there. But so far we haven't come anywhere near that with questions here.

CHAIRMAN JOHNSON: Mr. Hohn, any response?

THE WITNESS: The HCA map that I reviewed, I did not see any rural water systems shown -- pipelines shown on that map.

CHAIRMAN JOHNSON: Okay. I was hoping -- I should have taken an opportunity over lunch to review the transcript, didn't have an opportunity to, but did you note that everywhere that your pipeline crosses the KANEB line you've installed those casings?

I know in at least some instances you have. In all instances has WEB?

THE WITNESS: I can't testify that we've done it in all instances. To my knowledge we have done it -- the piping has been cased, the ones that I'm aware of. And some of those would have been new lines that might have been put in since I came back.

Part of what I'm basing that statement on regarding the original project is there are staff that were inspectors on that project while I was gone, and I'm relying on what they're telling me.

CHAIRMAN JOHNSON: But you just don't know for a fact that there's casings --

THE WITNESS: I don't know for a fact that there is in every case, no.

CHAIRMAN JOHNSON: Do you know if WEB Water is using rubber gaskets at those crossing locations?

THE WITNESS: We very likely are using rubber gasket pipe. But if we cased it, the pipe would be inside a steel casing.

CHAIRMAN JOHNSON: Sure. Mr. Hohn, on page 6 of your prefiled direct you note that the Commission hearings, public comment meetings on this topic, left only limited time for question and public input.

Did you have any -- did you review the transcripts of those public meetings prior to preparing your testimony?

THE WITNESS: I did at least two of them. I think Yankton and maybe Alexandria.

CHAIRMAN JOHNSON: Was there something in the transcripts that led you to believe that there was only limited time for questions?

THE WITNESS: Well, it's probably the same reaction that was raised by others. It's not critical to the Commission, but there was a lot of time spent with TransCanada, and I felt some people were leaving before they were able to comment.

Maybe it was just the number of people made it not possible. As you know, some of those got kind of late like the one at Alexandria.

CHAIRMAN JOHNSON: Sure. Would it surprise you if I mentioned that 17 percent of the pages of those four transcripts dealt with TransCanada's presentation and the other 83 percent were either citizen or Commissioner comments or responses to those questions?

THE WITNESS: I've never looked at it. But I guess I wouldn't be surprised based on the number of pages.

CHAIRMAN JOHNSON: Okay. Would it surprise you that I mentioned that the last comment made by any of the Commissioners at those meetings was asking if there was any additional comments or questions?

THE WITNESS: No. I wouldn't be surprised. I heard you say that. At midnight once.

CHAIRMAN JOHNSON: I believe you mentioned if it went any later, you were going to turn into a republican.

THE WITNESS: Right.

COMMISSIONER KOLBECK: Hearsay.

CHAIRMAN JOHNSON: Were you in the room when various subpoenaed State officials mentioned their involvement in discussions with TransCanada as part of their proposal, proposed pipeline?

THE WITNESS: Yes.

CHAIRMAN JOHNSON: Was there a reason on page 6 of your direct you noted at the end of the first full paragraph that no State agency gets involved?

THE WITNESS: Let's see. You're on page 6?
CHAIRMAN JOHNSON: Yeah. Page 6. It's the first full paragraph, the last five words. You note that no State agency gets involved.
THE WITNESS: Well, this was written based -- you know, prior to this hearing. And I learned more about their involvement at this hearing. But what I'm speaking of there is -- and maybe it's just this is how it's done, but it seems -- it seems unusual that the State agencies aren't more involved, in fact, presenting direct testimony instead of being called.
Now maybe that's just not the way it's done. But when my projects go in, WEB's projects go in to be reviewed, we go through a fairly direct State review with written comment, and maybe that's just not how it's done in this proceeding.
CHAIRMAN JOHNSON: I think WEB Exhibit 7D -- and we should probably pause to make sure we're looking at the right thing here. And I think that's the PHMSA special permit.
THE WITNESS: Yes. I have it.
CHAIRMAN JOHNSON: 7C, 7D, WEB exhibits?
THE WITNESS: Yes.
CHAIRMAN JOHNSON: It's your exhibit. Are you aware that PHMSA found on page 2 that the proposed pipeline would have a level of safety equal to or greater than that which would be provided if the pipeline was operated under existing regulations?

THE WITNESS: I guess can you refer me to that line?
CHAIRMAN JOHNSON: Sure. It's page 2. It's in the -- you know, it's the second full paragraph. It's right under Findings, and it's the second sentence in that paragraph.
THE WITNESS: Yes. I see that.
CHAIRMAN JOHNSON: Okay. Given that and WEB's Exhibit 7D, was there a reason that you noted on page 5 of your direct testimony that thinner wall pipe means greater risk for South Dakota?
THE WITNESS: Yeah. The reason I say that, Commissioner, is what this document is saying and what the conditions they place on it say, that it will be safer if TransCanada, in fact, does all the things they promise to do.
And, you know, I question whether that always gets done. People commit to things, and they're not able to do it. Thicker pipe would be a built-in safeguard. You wouldn't have to worry about whether somebody went out every month and checked this and checked that.
And so it's a passive protection. If it's thicker, you don't really have to worry about how many times they check it. If they put in a thinner pipe and say if you allow me to do that, I'll go out and do more maintenance and checking -- we get the protection if they do the extra steps. But even if they go out and check they may not spot the problem.
Example: In Minnesota where the oil pipeline failed

in 2-06 the pigs were sent through and they found no pinhole in that area near Clearbrook, Minnesota and then there was this failure this year. So a thicker pipe is a passive protection that you don't have to worry about. You've got more steel protecting you.
This permit allows them to put a thinner wall in provided they do certain steps, which require them -- you know, more staff activity. That's what I was saying.
CHAIRMAN JOHNSON: Okay. On page 11 of your direct, Mr. Hohn, I'm looking specifically at the second sentence at the top of the page. And I think you note that there's no way that TransCanada can prove or guarantee South Dakota that a pipeline won't leak as required under South Dakota Codified Law.
Do you know specifically where that requirement is contained in the codified law that a pipeline not leak?
THE WITNESS: Well, it's regarding protection of water, and I can't cite the specific, but it's protection of ground water and protection of the environment.
If the burden of proof is on them to prove that they will not violate, then I assume they're held to the same standard as a filling station that puts a tank in and it leaks or a farmer who spills fuel and affects the environment.
I think it's difficult to say they can prove beyond a doubt that they won't have a leak. I guess that's what I was trying to say.

CHAIRMAN JOHNSON: To your knowledge is there an explicit requirement under South Dakota Law that a pipeline never leak?
THE WITNESS: Well, there are laws dealing with spill, and it's a violation of the law if you damage an aquifer, damage a water supply. I didn't cite the specific statute. I could provide that later if you'd like.
CHAIRMAN JOHNSON: Okay.
THE WITNESS: I guess what I'm saying is it's difficult to prove you will not leak. And at one point at the public meeting, for example, in Britton I think the -- and I realize it wasn't under oath and it was an informal meeting but the representation being made as reported in the news media was it will never leak, which we've came a long ways since then. We've now confirmed it may leak, it could leak, and hopefully they'll be able to clean it up.
CHAIRMAN JOHNSON: Do you remember who made the public statement that the pipeline would not leak?
THE WITNESS: Well, I think the story reported by the American News, I think the quote I saw was attributed to Ms. Tillquist.
CHAIRMAN JOHNSON: Do you remember -- I mean, you were at the Britton meeting. Do you remember that being said?
THE WITNESS: A lot of things said at the meeting, but I do recall -- I think the reference was the odds are once in a

1,000 years or once in 3,000 years, which is almost it will never happen is my recollection. And, you know, that -- as I said at that meeting, I'd feel better if they admitted it will leak and then what are we going to do about it because it will probably leak in some lifetime.

CHAIRMAN JOHNSON: Okay. We've talked a little bit about -- over the course of this hearing about third-party damage. And you're familiar, I presume, with the One-Call System?

THE WITNESS: Yes.

CHAIRMAN JOHNSON: Do you believe that as part of a required permit that TransCanada Keystone Pipeline should be required to participate in that One-Call System?

THE WITNESS: Sure. Of course.

CHAIRMAN JOHNSON: Should any responsible pipeline operator be a part of the One-Call System?

THE WITNESS: Of course.

CHAIRMAN JOHNSON: Okay. Great. That's all I have, Mr. Smith. Thanks.

MR. SMITH: Are there other Commissioner questions of Mr. Hohn?

Commissioner Kolbeck.

COMMISSIONER KOLBECK: I just have a couple questions that haven't been dealt with. On the -- on your direct testimony -- it would be page 6. I'm sorry. On your direct

testimony, page 6.

THE WITNESS: Yeah.

COMMISSIONER KOLBECK: About halfway, meeting the national interest. You state, TransCanada provides no direct benefit to South Dakota.

Do you feel this to be true?

THE WITNESS: Yes. When I say direct benefit I'm talking about -- I wouldn't call tax generated off the pipe direct benefit. Direct benefit being can we ship oil out on this pipe.

COMMISSIONER KOLBECK: Okay. And you're familiar with the Mandan line? Did you have any dealings in the Mandan line?

THE WITNESS: No, I didn't. I don't believe I was here when that happened.

COMMISSIONER KOLBECK: Okay. The next one would be -- let me get to it. I believe -- and please correct me if I'm wrong. The pinhole leaks can't be contributed by the SCADA system. Yet you had testified that it was a pinhole leak in Minnesota.

Do you know how they found that leak?

THE WITNESS: Well, again, this is a reference that was in the Minneapolis newspaper. They were quoting a pipe official who said that in 2006 they ran a pig device through and no problems had been identified in that area of the pipe.

My understanding was the leak was found sometime after

Thanksgiving, and it was found by a landowner, I believe.

COMMISSIONER KOLBECK: Okay. Thank you. And then I think this -- you referenced as an exhibit the resolution.

THE WITNESS: Yes.

COMMISSIONER KOLBECK: Okay. I know that Commissioner Hanson has some questions here. The biggest thing that I guess I would be concerned is it would be line 105 to 108.

THE WITNESS: Okay.

COMMISSIONER KOLBECK: Do you know if the South Dakota Rural Water Association required anything of the other pipes that passed underneath the Missouri River?

THE WITNESS: The only one that I'm aware of that crosses the River is -- in that stretch of Missouri River between Yankton and Sioux City -- or, excuse me, Yankton and Vermillion is the KANEB, which has been there for some time.

COMMISSIONER KOLBECK: Okay. And that was the Association of Rural Water Systems didn't ask anything of that pipeline? Or were they around, I guess?

THE WITNESS: I'm not sure they were even in existence. Well, they could have been, but I'm not aware they took a position on that. I'm not even sure when that -- the pipe's been there quite a while.

COMMISSIONER KOLBECK: On the thickness in line 120 to 124 do you know if the Rural Water Systems had a structural engineer answer any questions for them?

THE WITNESS: That reference, 120 to 124, is asking that the wall thickness be greater than .338 and that the protection equal the protection provided for road crossings, which was .551.

I don't think -- I don't know. I'm not aware that they had an engineer look at that for them, but one of them could have. I'm not aware.

COMMISSIONER KOLBECK: Okay. The other one is -- give me a second here. Sorry. I got mixed up on my lines.

It's 110 to 118. I have a little concern with that one. When you were involved in the discussions it urges the PUC, the Governor, the Legislature, the Attorney General, DENR, and South Dakota Congressional delegation assure that protection under federal and state laws are -- do you know if that group is concerned that federal and state laws have not been followed as to date?

THE WITNESS: I think that it's -- it's just what it is. It's a broad statement, and they're copying this probably to all of those officials asking for sort of a broad protection.

I don't think it's saying that they aren't. I think they're saying we'd like you to look to those laws and make sure we are.

COMMISSIONER KOLBECK: Okay. And the other resolution, 126 to 134, the 15 cents per barrel, assuming that some of the testimony that was given here in the last few days

is true, do you think that they'd want that applied to the thousands of miles of gas pipelines or just the 200 miles of crude oil pipeline?

THE WITNESS: Again, I wasn't at that meeting when they finalized it, but just reading it on the face of it, it looks like it's TransCanada specific.

COMMISSIONER KOLBECK: Just the crude oil.

THE WITNESS: And I might -- if I could just go back a bit on your question about 10 versus 18, 110 through 18, I think crude oil is new to South Dakota. It's certainly new to us anyway. And there are some questions about do federal laws protect -- what do federal laws -- how do they interrelate with an oil spill, crude oil spill?

We've never had that. We've had natural gas go up in the air. It doesn't really hurt our lines. There's been gas spills that have been cleaned up. But we've never had crude oil. So questions like the HCA question, how do we fit in all of that?

And so I think they just did a blanket to all public officials saying it's a new piece of work. It's a new area for all of us. And they want them to look closely to make sure water is protected.

COMMISSIONER KOLBECK: Okay. And I'll ask Mr. Smith to stop me here, but if --

CHAIRMAN JOHNSON: Somebody stop me.

COMMISSIONER KOLBECK: That 15 cents per barrel, is that something they're going to take up with the legislature? Something they're --

THE WITNESS: I don't know.

COMMISSIONER KOLBECK: As far as power of the PUC to impose taxes or tariffs.

THE WITNESS: I would think they might -- if they came up, they certainly would be involved in discussion. But I'm not aware of anything specific.

COMMISSIONER KOLBECK: That's all for me.

MR. SMITH: Questions, Commissioner Hanson?

COMMISSIONER HANSON: Thank you, Mr. Smith. Afternoon, Mr. Hohn.

THE WITNESS: Good afternoon.

COMMISSIONER HANSON: Piggybacking on Commissioner Kolbeck's last question, perhaps I believe he was asking you if you were aware that the -- there have been a number of times that a 15 cent tariff or a tax of 15 cents per barrel has been brought up to the PUC and just your understanding that the PUC does not have the authority to initiate that tax.

THE WITNESS: Yes. I think we understood the PUC -- it's a legislative function or could be a legislative function. I don't know that you have authority to do that.

COMMISSIONER HANSON: Okay. On page -- I don't know that you have to turn to it, but in your direct testimony on

page 9 you explain that the ductile iron pipe has a peak pressure -- operates at a peak pressure of 100 to 209 psi. I looked through the testimony and suspecting I missed it.

What is the peak operating pressure of your PVC?

THE WITNESS: The PVC pipe, you can get it in a number of sizes. 160 psi they normally recommend operate at 120 psi or less. That's 75 percent. And 250 -- or 200 and 250 psi plastic the same thing, 75 percent of design.

So if we had a 200 psi or a 250 psi, we wouldn't operate it that high. We'd operate it down at 75 percent. The ductile iron pipe, a lot of our ductile iron pipe is rated at 350. And the highest we've operated it currently is 209 psi. So there's a safety factor.

COMMISSIONER HANSON: And so the answer is on the PVC you operate that at what pressure? You say 75 percent but 120, 125 and then the other size you're operating at 150 to 175?

THE WITNESS: Yeah. Each class -- there's a class 160, 200, and 250, and the highest we would operate any of those classes would be 75 percent of that number.

COMMISSIONER HANSON: Thank you. What's the standard operating procedure for pressure? I assume you try to keep somewhat in somewhat of a variance for --

THE WITNESS: Our systems are designed so that there be 50 to 60 pounds minimum at each meter. Because the customer's going to want about 50. And then in each meter pit

we have a pressure regulator that if you happen to be in a valley, you're in a low area, and you have 120 pounds outside of your home, you don't want that inside the house.

COMMISSIONER HANSON: Understood.

THE WITNESS: It would be a good shower, but when you shut it off you'd have problems. So we adjust the regulator so everybody gets 50 pounds. That's our objective.

COMMISSIONER HANSON: Do you ever lose pressure?

THE WITNESS: Where we lose pressure completely? We have over the years, 20 some years. That might be a pump station shuts off or power goes off or a tank drains down or a leak develops and we would lose water pressure.

COMMISSIONER HANSON: About how often does that happen to you?

THE WITNESS: Not very often. But it happens. I'd say probably -- it doesn't happen on the whole system. It happens in places scattered throughout the system. You might see that happen once a month at most. And sometimes it's just on a little branch line.

Our system has -- and when you say once a month that sounds like a lot, but we have 6,000 some miles of pipe. And so really it's pretty low. We're lower actually per mile of pipe than many cities.

COMMISSIONER HANSON: Do you ever issue boil orders then?

THE WITNESS: We haven't had to. We've been able to maintain chlorine level, and we've not drawn anything into the line. We might have lost pressure, but we didn't get anything in the line to affect the chlorine.

COMMISSIONER HANSON: I believe you stated but I forgot. Where's your purification plant located?

THE WITNESS: The water treatment plant is about 3 miles east of the Missouri River at a place called New Evarts, which is 7 miles south of Mobridge on the Missouri River.

COMMISSIONER HANSON: South of Mobridge?

THE WITNESS: Yeah. 7 miles south of Mobridge, and then the treatment plant is about 3 miles east of there. So we have a 3-mile raw water line taking water up to the treatment plant, and then we centrally treat at that one place.

COMMISSIONER HANSON: Thank you. I believe in your prefiled testimony, although I couldn't find it when I was looking for it, you stated how many times -- perhaps it's just been in discussion. You stated how many times the Keystone Pipeline would cross the WEB pipeline.

THE WITNESS: Yes. Initially we -- I think the testimony said we assumed it was somewhere between 10 and 12, depending on where the final routing ended up. Based on the routing that I'm aware of today -- and that might change because of some easement that moves the pipe, but based on the last routing I saw before this hearing, it's going to be something

less than 10, somewhere around 8 to 10. And then we -- the pipe parallels our pipe right at a little -- side by side about 3,000 feet. Near Amsden Lake.

COMMISSIONER HANSON: For a duration of 3,000 feet?

THE WITNESS: Yeah. For a length of 3,000 feet. It's next to us really close. I wouldn't say it's 50 feet. But it's -- on the maps when you look at, you know, scaled map it's hard to tell exactly where it is, but it's close to us and parallels us.

COMMISSIONER HANSON: And close to is 50 feet?

THE WITNESS: I'm going to say it's within 200 feet. I don't know it's 50. I can't tell until they stake it in the ground, I guess is what I would say.

COMMISSIONER HANSON: Do you know how many times the proposed pipeline would cross the other I believe a total of eight rural water systems?

THE WITNESS: When we've gotten together and discussed this, it varied from meeting to meeting. I think as a final routing of this occurred and things were changing with each system -- so I don't know today the exact number. I'm -- it seemed to me that when we first looked at this together as a group it exceeded 200. But I haven't talked to people lately about that.

COMMISSIONER HANSON: So there's no definitive number on crossings at this juncture?

THE WITNESS: No. TransCanada sent all of us a letter with a pipe route, and I believe that the pipe route in our area changed a little bit from that letter because of an easement that Fish & Wildlife -- if they're on Fish & Wildlife grasslands, they sometimes make a move to cropland so that affects us differently.

So the last best information I had was what was posted on your website, which is what we used. And I haven't gotten a recent count, but it was as high as 200 at one time.

And when you think about it, there's 220 miles of pipe, and rural water is in most of those areas except for a small distance. And we're on every section line. So 200 is not an unlikely number.

The two systems -- in our system we have a 12-inch. That's the biggest line that's crossed. That servings all of Day County. For us that's a real sensitive spot.

COMMISSIONER HANSON: Excuse me. Is that ductile iron, the 12-inch?

THE WITNESS: No. It's plastic. BY Rural Water System, Bottom Yankton, has a ductile iron that this pipe comes close to and may cross a few times, and there it's a cathodic protection issue, one pipe versus the other.

David Wade has the aquifer which you've heard about. And then the others have pipes that are crossed of various sizes.

COMMISSIONER HANSON: Thank you. A couple of questions on the KANEB or whichever pipeline. I'm confused a little bit on the relationship that you have there.

I believe you testified that WEB's line is at a depth of 6 feet at the crossings.

THE WITNESS: 6 and a half minimum. And it could be deeper than that.

COMMISSIONER HANSON: And that the KANEB is at 3 to 4 feet?

THE WITNESS: I think it varies in our area. And my recollection -- and I may be wrong about this, but it seems to me it was in the 3 to 4, somewhere in that range.

COMMISSIONER HANSON: Is that to the top of the pipe or bottom of the pipe?

THE WITNESS: It would be to the top.

COMMISSIONER HANSON: And the thickness of that pipe is?

THE WITNESS: I don't know the thickness of that pipe.

COMMISSIONER HANSON: So would it be safe to say that if that is buried somewhere in the vicinity of 4 feet, taking into consideration the width of the pipe -- the diameter, rather, that the top of your pipe is approximately 2 feet, 2 and a half feet?

There's a separation of about 2 and a half feet?

THE WITNESS: Actually I think the KANEB pipe is quite

a bit smaller than this pipe. It's not of the 30-inch size. I should have that with me, but I didn't think to look that up and bring it. But I think if you look at your records which would have the information on KANEB, I think it's a smaller line in size.

And as I said earlier, when our contractors who bid the project approached the gas line while our plan said a minimum of so many feet, they went deeper. Every one we've dug up to maintain, they want to stay away from it. So they vary. Its at least 6 and a half feet, and the ones we've exposed and worked on are deeper than that. The contractor didn't want to get -- he got further away from the pipe than he was allowed to get. Could have been closer if he wanted to be, and he decided not to.

So the pipe crossings in every one we've exposed to do any work have been deeper than 6 and a half feet, but I can't say they're all deeper. The minimum -- the contractor had a blueprint and a set of specifications and our specs said you had to be a minimum of 6 and a half feet deep and you've got to maintain distance away from the line. When they approached the gas line they went deeper in the ones that I've seen exposed and examined.

COMMISSIONER HANSON: So it was a contractor's decision for greater separation?

THE WITNESS: Yes.

COMMISSIONER HANSON: Your specifications required what sounds like approximately, am I correct, 2 and a half foot separation?

THE WITNESS: I think it would be more than 2 and a half because the KANEB pipe isn't as big as this pipe.

COMMISSIONER HANSON: But you said it's going to be approximately 4 feet. Yours is somewhere in the 6, 6 and a half feet.

THE WITNESS: 3 to 4 feet deep, KANEB. The ones I've seen vary from 3 to 4 feet. There haven't been that many opened up, but when we do cross now we try to verify how deep it is.

COMMISSIONER HANSON: You understand why I'm asking the question. I'm trying to get somewhat of a comfort zone for your earlier testimony that you wanted to have a 20-foot separation and a 25-foot separation and yet you've purposely chosen to bury your pipe at crossings when you had that opportunity at just a separation of about 2 or 3 feet. How do you --

THE WITNESS: Well, this is the explanation I would give. And I wouldn't speak for other rural water managers, but from my perspective the pressure on KANEB it's my understanding is less than this line. Pressure is a concern. The other is I've never seen a photograph of a KANEB explosion. I've never seen the KANEB fail to the point where it created a crater. I know that's gas, not oil.

COMMISSIONER HANSON: That begs me to ask the question have you ever seen an explosion of the Applicant?

THE WITNESS: Of this Applicant?

COMMISSIONER HANSON: Yeah.

THE WITNESS: I've seen the photographs that are on the cover of this booklet, testimony. The bottom two pictures belong to TransCanada. Those are TransCanada pipes. They were gas. And I've seen several photos of oil pipeline failure and the recent one in Minnesota at Clearbrook.

COMMISSIONER HANSON: All right.

THE WITNESS: Photographs from a newspaper.

COMMISSIONER HANSON: Right. Natural gas.

THE WITNESS: Not --

COMMISSIONER HANSON: Natural gas on the explosion ones.

THE WITNESS: Well, no. Commissioner, the one in Minnesota, Clearbrook, that is oil. It's this type of an oil line is my understanding, the Clearbrook, Minnesota incident from last week.

COMMISSIONER HANSON: Correct. Just a little housekeeping for myself. Did your board of directors take an official action at a board of directors meeting to oppose this pipeline?

THE WITNESS: Every piece of literature we proposed on this issue has been presented to our board in advance of their

meeting, and they've approved or signed off on every piece of literature, including this testimony which was presented to the board about a week or two before it was -- they met.

And they support my being here today to testify. In fact, my chairman is here with me.

COMMISSIONER HANSON: I imagine that answers my question. However, my question is has the board of directors taken official action to oppose this pipeline?

THE WITNESS: The board of directors has taken -- the WEB board of directors has taken a position to express concern about this project and to try to seek changes that they think would better serve our area.

COMMISSIONER HANSON: Much like the South Dakota Rural Water Association.

THE WITNESS: Yes.

COMMISSIONER HANSON: Okay. Thank you very much.

THE WITNESS: You bet.

COMMISSIONER HANSON: Thank you, Mr. Chairman.

MR. SMITH: Any other Commissioner questions?

CHAIRMAN JOHNSON: I've got one if you don't mind, Commissioner.

COMMISSIONER KOLBECK: Absolutely.

CHAIRMAN JOHNSON: Okay. And I just -- it's just one question, but it's going to take me a little while to get there, I think, Mr. Hohn. So my apologies for that. Because I want to

make sure I've got my facts right.

Were you around last week when we had an expert testify that the concentration of BTEX in refined petroleum products is higher than the BTEX concentration in a crude oil product?

THE WITNESS: Can you reference that to a person?

CHAIRMAN JOHNSON: I can't. Which I was hoping you might be able to help me out to verify.

THE WITNESS: I vaguely remember the discussion. I can't remember who it was. But go on.

CHAIRMAN JOHNSON: Okay. Is it your understanding that leaks are more likely in older pipelines than opposed to newer pipelines?

THE WITNESS: Well, based on the statistics that Mr. Miller presented, it showed that the leaks were declining, but they were still a number, quite a number. And maybe we're all just a bit naive in this part of the world because we don't have oil pipelines, and we're going to get our first one.

But when you look at the statistics it's declining, but it's still -- there's still quite a number there from my perspective and my looking at it, and I guess maybe I'm surprised there are that many.

CHAIRMAN JOHNSON: So if KANEB is a refined petroleum pipeline and if you can't say for sure that WEB Water has put casings around its water pipelines that cross the KANEB, I mean,

if you've been the WEB manager for 15 years, I mean, I guess if you've taken with concerns about BTEX in pipelines as seriously as you're asking the Commission to take them, why haven't you taken the time to verify that your pipelines are cased?

THE WITNESS: Well, I believe they are cased. And I'll look to our blueprints to send those to you to respond to that, and they'll speak for themselves.

As far as I think there's a couple of issues. You can't -- one pipe is not the same as another pipe. And this is just my observation. The KANEB pipe is smaller. A smaller pipe even the same thickness has more strength -- I'm no engineer but I work with a lot of them and I know that that's the case. I'm not aware and you might know because you have the records here, whether KANEB has had a spill, that type of pipeline, that size of pipeline.

The natural gas pipelines like Northern Border, it's a large line and I think it's 42 inch and it's under pressure. But natural gas goes up. It doesn't spread out. The risk is really fire. If you happen to be there smoking a cigarette, it's not a good thing. In fact, in the training they say if you're there in your pickup, don't start it up. Don't use your cell phone. Walk away if you smell the gas. And we meet with them from time to time on safety training.

But this is a bigger line, and the pressure worried me. The first thing that caused me concern on this when I heard

about it was the pressure.

CHAIRMAN JOHNSON: So, Mr. Hohn, I don't want to put words in your mouth here. My question was, you know, why haven't you taken the time to verify that those casings are in place at every single crossing?

Am I right in summarizing your answer that it's because you view the KANEB Pipeline as not as large a threat to leak as the proposed Keystone?

THE WITNESS: Yes. And the other --

CHAIRMAN JOHNSON: Thank you very much.

THE WITNESS: The other thing in response to that further is I think maybe we all ought to pay more attention, including water managers. I plan to look closer in the future.

CHAIRMAN JOHNSON: I thought I was done, Mr. Smith. I'm not. If I could do one more. So at this point given -- you know, as manager of WEB Water system you've been involved I think very actively in this proceeding for more than six months.

Has WEB undertaken any activities to verify that those pipes are cased in the last six months?

THE WITNESS: It's on our list for our winter's work.

CHAIRMAN JOHNSON: Okay. Thanks very much.

MR. SMITH: Commissioner Kolbeck.

COMMISSIONER KOLBECK: Yeah. I forgot a couple here. Sorry. First of all, before I forget, who paid for those casings, the pipes that are cased under the KANEB? Did KANEB

pay for them or WEB Water?

THE WITNESS: WEB would have paid for them as part of a project cost, I would assume. I'm quite sure.

COMMISSIONER KOLBECK: How old is your SCADA system? I forgot to ask you that.

THE WITNESS: We bought the original system in about 1989, and it's been upgraded -- the software has been upgraded about four times.

COMMISSIONER KOLBECK: So you don't update it monthly or yearly?

THE WITNESS: Yeah. We haven't had to. We've taken and purchased every update that the vendor recommended.

COMMISSIONER KOLBECK: Okay. I asked you that. The last sentence in the resolution I just wanted to ask you, 55 through 58 it says, Ensure water resources are protected and let the Department of Environment and Natural Resources be utilized to ensure.

Did you by any means take the testimony of the people of the DENR that they were not prepared in cleaning up spills and actually had cleaned up over 800,000 gallons of petroleum spills?

THE WITNESS: You're on page 250 --

COMMISSIONER KOLBECK: I'm sorry. Page 4, line 155 to 158, the last paragraph.

THE WITNESS: Okay. Let me read that a moment.

COMMISSIONER KOLBECK: Oh, sure.

(Witness examines document)

THE WITNESS: I wasn't there when that language was added, but frankly we're not saying that we don't think -- I mean, frankly they're saying use the Department of Natural Resources as a resource. I was frankly quite impressed with Mr. Markley and his team and some of the improvements that have been made over the years.

So I think they're saying this is the agency we work with all the time. They regulate us. Sometimes they fine us if we don't do the right thing. But we work with them, and we trust that they know what they're doing. And I think part of what was good about them coming in to testify was to sort of bring it all up to speed in terms of what their role has been and more importantly if something is built, what will they do? Who do we go to?

I don't deal with Mr. Markley because I don't have ground water yet. You know, I deal with surface water. But his team obviously dealing with the Williams Pipeline did a Herculean task there. And there were two things coming out of it.

One of them was apparently at that time to make that oil company come to the table took the Governor, Mickelson, and it took 10 months. And as a result of that apparently everybody from the Governor on down said we need to tighten our laws up

and get -- you may not always have the Governor who can go in and make that happen.

And so I was -- I'm glad to hear that, the history on that. I was not around when that happened. But the thing that concerned me even with all that effort, the full weight of the Governor's Office, they found it on Memorial Day and got the oil company to agree to it in May, like 10 months.

And if you're the family that has a well that's affected by a spill or you can't live in your house because of fumes or something, 10 months would be a big span of time. I am hoping I guess from the testimony it sounds like things would come to a head quicker than that because of new laws, the current laws and the enforcement by people like Mr. Markley. So I was reassured by his testimony. I was glad to hear it.

COMMISSIONER KOLBECK: And I think the explanation for the 10 months was there was two gas people right next to each other and each of them denied.

THE WITNESS: Yeah. They could argue it.

COMMISSIONER KOLBECK: I just have one last question. Do you know if the South Dakota Association of Rural Water managers were aware the DENR had been involved in this project for over three years?

THE WITNESS: Well, we were aware they had meetings with them to get information and to consult. But -- and you had mentioned previously I guess yesterday that the meetings started

in 2-05. I didn't become aware of this project until 2-06. I think the public involvement.

COMMISSIONER KOLBECK: Me in '07.

THE WITNESS: Yeah. Okay.

COMMISSIONER KOLBECK: That's all I have for you. Thank you, Mr. Hohn.

THE WITNESS: Yeah.

MR. SMITH: Mr. Rasmussen, any redirect?

MR. RASMUSSEN: Just a couple things.

REDIRECT EXAMINATION

BY MR. RASMUSSEN:

Q. Curt, there was questions about this fusion bond coating. Are you familiar with that product and how it's supplied?

A. I've seen it used on projects, and I'm not -- I'm familiar with it.

Q. Do you have some concerns about its Application in the field?

A. I pulled up the website, TransCanada's website, as well as others and looked at all the data I could find in that fashion and particularly pipe installation. And the positive -- the good part of fusion bond is it's in the factory where you can control the environment. They ship it out in links of whatever length, 40 feet or greater.

They weld it in the field and then they paint that seam -- or coat that seam. Maybe paint isn't the right term. But it's

hard to control the environment in the field. If it's humidity -- if there's humidity in the air or it's raining, it looks like from the pictures they build a shelter around that joint when they weld it and then when they coat it.

And that would seem to me if I were involved in building something and that was required to be done in the field is it's kind of like painting a car outdoors. And so I think that from an inspection standpoint would be a tough act to follow or do. You're trying to get a controlled environment out in the open air. So that would be a concern.

Q. You were asked questions about the significant amount of water that WEB has rights to in the Missouri River and that you're not even using -- or you're using just a small fraction of that water at this point in time.

That being the case, why would you ever consider tapping into the Middle James Aquifer or any of the other aquifers in the Day County area?

A. Having the water at the Missouri River and getting it to Mobridge more than 100 miles away, 120 miles --

Q. You mean, Webster?

A. I'm sorry. Webster. Having the water in the Missouri River near Mobridge and getting the water to Webster 150 miles roughly to the east is another matter. Our pipe size, our mains is becoming taxed. There's going to be a point where we just can't get more water through it.

So we're looking and we have been looking at the cost of developing well fields in the Mansfield area and in the Andover area so that we can put wells down and package treatment plants, small plants, treat water to help meet our peak instead of building all that expensive main line.

And you have to weigh the cost one against the other. We've always known those aquifers were there and had the potential to be developed. And it's a resource we've been counting on.

So, you know, having the water at the River, the Missouri River, doesn't mean anything if you don't have a big enough pipe to move it all this way. And we don't.

Q. I think you may have misspoke with regard to one thing you said. You testified that you recollected it was Heidi Tillquist who made a comment at the Britton meeting about the pipe leaking.

My understanding of her testimony was the only place she's been is Yankton.

A. You're right. It was someone with the firm, and it was -- it was one of the ladies that were at the hearing in Britton. It was quoted in the American News.

Q. But it wouldn't have been Ms. Tillquist?

A. No. It wouldn't have been Heidi.

MR. RASMUSSEN: That's all I have.

MR. SMITH: Anything following up on the redirect or

Commissioner questions?

MR. KOENECKE: Just a couple. Thanks.

RECROSS-EXAMINATION

BY MR. KOENECKE:

Q. Mr. Hohn, do you have any firsthand knowledge of the incident on the Enbridge Pipeline at Clearbrook?

A. Clearbrook incident from last week?

Q. Yes.

A. I was not there. I didn't personally observe.

Q. Just read it all on the Internet or in newspaper accounts?

A. I read newspaper accounts and spoke to someone who lives in that area.

Q. And who was that?

A. I'd rather not bring his name up, but he's not -- it's secondhand information. But he repeated what was in the news.

Q. Did he repeat anything that wasn't in the news?

A. No. He confirmed what was in the news, I guess.

Q. Do you have any particular expertise with respect to the Application of fusion bond epoxy?

A. I have worked around fusion bond epoxy on projects where it was used. I'm familiar with how it's applied in plant settings, but I don't -- I'm not an expert on it, no.

Q. So did you take any particular -- or do you have a disagreement with what Ms. Kothari testified to regarding the field application of FBE last week?

A. What I stated is what my position would be. I've been out at a lot of construction jobs and I've seen products like that applied and it's -- the manufacturer's direction and guidance is always a lot -- it's a lot -- it's not as easy as they say to apply something like that in the field.

And so I'm saying that trying to paint those seams every 40 feet or whatever the length of the pipe is, is one weak spot. It's not applied in the factory. It's applied in the field.

Q. Are there any particular aspects of her testimony you'd take issue with regarding the field application of fusion bond epoxy?

A. Just what I said here, that I think that's going to be a weak spot, and it's not a controlled environment.

Q. Where have you had experience with fusion bond epoxy?

A. On water treatment plants and power plants.

Q. And how long ago was that?

A. It's been over the last 20 years at various projects. It's not only used in the oil industry. And not just that coating but any other coating that you try to field apply.

Q. Have any of those projects been subject to external corrosion in your knowledge?

A. Well, the projects I saw not only had coating on the outside, quite often they had something coating the steel on the inside --

Q. That wasn't the question. Have they had any external

corrosion?

A. I haven't went back and reviewed.

Q. Very well. I'm interested in your claims to be exploring the use of water around Mansfield and Andover. Have you made any application for a permit to withdraw water from either of those locations?

A. We haven't yet, but we've met with Derric Iles about a year ago exploring the -- went down to his office, met in Vermillion with our engineer, DGR Engineers, and we've been looking at those fields in terms of well data, the data that's available from water rights as to where sources of water are.

In the Mansfield area it's called the Deep James, and it's a new vein that they've identified.

Q. But you haven't made any application for use of that water?

A. We're not ready yet. We'll need to do drilling and testing and then we'll have to identify a site where we want to request a permit. We have to be site specific.

Q. And it's still your testimony that you're going to begin withdrawing 16 million gallons of water from the Missouri River.

A. Not 16. The pump station has a capacity of 16, and the treatment plant can only treat 12.

Q. So you have plans to upgrade the treatment plant to match?

A. We might in the future. At this point we're expanding it to accommodate three new ethanol plants that need water.

Q. And where are those located at?

A. One is located at Redfield. One is located at Mina, and the other is in Aberdeen.
Q. And so it's easier or more cost-effective to withdraw water from the Missouri River from those locations than it would be to take it from a well field at Mansfield?
A. Not necessarily but the quality of water they need and want they prefer the Missouri River water and they're paying the bill for part of it so we thought why not give them what they wanted.
The ethanol plants are paying for the expansion of our treatment plant that's needed to meet their needs. They're also paying for that parallel pipe you saw the picture of to get enough Missouri River water to their plants.
Because their process is quite sensitive, the ethanol process, they wanted Missouri River water, and they paid the cost.
MR. KOENECKE: I've got nothing further. Thank you.
MR. SMITH: Any last staff questions?
MS. SEMMLER: None. Thank you.
MR. SMITH: Any final Commissioner questions? Do you have anything, Mr. Rasmussen, in follow-up to recross?
MR. RASMUSSEN: No, I don't.
MR. SMITH: You're excused, Mr. Hohn. Thank you very much.
(The witness is excused)
MR. SMITH: Does that then conclude your case,

Mr. Rasmussen?
MR. RASMUSSEN: Yes, it does.
MR. SMITH: I'm assuming that goes for you too, Mr. Hohn.
MR. HOHN: Yes.
MR. SMITH: Then at this point we've reached the time for -- I guess, staff, do you want to forge ahead, or do you guys want a few minutes to get -- should we take a short break so you can regroup and get organized here?
MS. SEMMLER: I just need to pull my marked exhibits out, and we're ready to go. So whatever the Commissioners are prepared --
MR. SMITH: What do you want to do?
(Discussion off the record)
MR. SMITH: We'll break until 3 o'clock.
(A short recess is taken)
MR. SMITH: Staff, we're going to reconvene the hearing following a 15-minute break. And please proceed with your next witness.
MS. SEMMLER: Staff calls Mr. William Walsh to the stand.
(The witness is sworn by the court reporter)
DIRECT EXAMINATION
BY MS. SEMMLER:
Q. Mr. Walsh, please state your name, your employer, and your

address for the record.
A. My name is William Walsh. I'm employed by EN Engineering. My business address is 7135 Janes Avenue, Woodridge, Illinois.
Q. Please tell us your educational background, Mr. Walsh.
A. I have a Ph.D. in theoretical and applied mechanics from Northwestern University, an M.S. in metallurgical engineering from the University of Illinois, and a B.S. in engineering mechanics also from the University of Illinois.
Q. What is your work experience since college, Mr. Walsh?
A. I'm a registered professional engineer in the State of Illinois. I'm currently a senior project manager in the metallurgy group at EN Engineering, pipeline engineering firm. My responsibilities include project management, development of welding procedures for line pipe, developing pipe specifications, conducting failure analyses, and assisting in development of pipeline integrity management plans.
I've also worked as a metallurgist for Natural Gas Pipeline Company of America with similar technical responsibilities. In addition to my applied pipeline experience, I've also performed research on pipeline issues of stress corrosion, cracking, and strength of corroded pipe while a research scientist at Battelle Columbus Laboratories. I've also worked in the manufacturing field as a project engineer and project manager for Snap-on Tools Corporation and Rexam Beverage Can North Americas.

Q. You were employed by the Commission to consult with staff on this case; is that correct?
A. Yes.
Q. Please tell us in general what you reviewed or analyzed in order to file your prefiled testimony and to testify here today.
A. The documents that I reviewed were the Application for the permit for the Keystone Energy Pipeline and associated filed exhibits, Petition of TransCanada Keystone for the 80 percent specified minimum yield strength or SMYS special permit and grant of special permit by PHMSA.
Q. Did you submit any data requests to any particular party in this case?
A. Yes. Where more information for analysis was required, data requests were made through TransCanada through the Public Utilities Commission Commission staff.
Q. And did TransCanada respond to such requests in a timely fashion?
A. Yes.
Q. As part of your analysis, did you review the burden of proof present in SDCL 49-41B-22?
A. Yes.
Q. You'll find in front of you what's been marked as Staff Exhibit 10. Is this your prefiled testimony?
A. Yes, it is.
Q. Do you have any additions, deletions, or edits to make to

your prefiled testimony?

A. Edits were made and clarified in surrebuttal testimony.

Q. You'll find in front of you what's been marked as staff Exhibit 18. Is that your surrebuttal testimony?

A. Yes, it is.

Q. Can you please summarize your prefiled direct and your surrebuttal testimony for us, including those corrections that were made in the surrebuttal?

A. Yes. EN Engineering was hired to assist PUC staff in their review of the Keystone Application for compliance with applicable federal and local laws. Federal statute regulating the transportation of crude oil through the pipelines is the Code of Federal Regulations Title 49, Transportation, Part 195 Transportation of Hazardous Liquids by Pipeline.

Since much of the following testimony concerns Part 195, I'd like to take a few minutes to discuss what is covered in Part 195, how it's organized and how it continues to evolve to ensure safe transportation of hazardous liquids as new technology and information is implemented.

Part 195, which I will refer to as the code, incorporates the accumulated knowledge of liquid pipeline transport based upon engineering principles, experience, analysis, and testing.

It provides protection to inhabitants in the environment and the region of the pipeline. Furthermore, it is the law. Failure to follow the code in transporting hazardous liquids

through pipelines results in federal penalties which can include fines and incarceration.

The code is organized by subparts. Subpart A is general requirements. B, annual safety reporting. C, design requirement. D, construction. E, pressure testing. F, operation and maintenance, including high consequence areas and pipeline integrity management. G, qualification of pipeline personnel. H, corrosion control.

My testimony deals with design, construction, testing, and operation and maintenance aspects of the code. My colleagues from EN Engineering will testify to pipeline integrity management and corrosion control subparts.

An important aspect of the code is the use of industry codes and specifications by incorporating these documents by reference. Documents are incorporated by reference from industry organizations such as Pipeline Research Council International, the American Petroleum Institute, the American Society of Mechanical Engineers, Manufacturing Standardization Society of the Valve and Fitting Industry, American Society For Testing and Materials, the National Fire Protection Association, and the National Association of Corrosion Engineers.

Incorporating these standards -- these organizations by reference in Part 195 increases the breadth of the code. Unless stated in Part 195, all parts of the documents incorporated by reference are included as if it were printed in full. This

makes the industry documents part of the law. There are 36 documents included by reference including pipeline design requirements found in ASME B-31-4.

And, finally, concerning Part 195, I'd like to present an example of how updated technology or procedures become included in the code.

There has been some reference in previous testimony to the incident at Cohasset, Minnesota involving the Enbridge crude oil line. The NTSB report of the incident concluded that the failure resulted from fatigue cracks growing due to vibrations experienced during rail transport. As a result of the report, PHMSA sent a letter to the American Petroleum Institute requesting that the design equations in API recommended practice 5L1, transportation of pipes by rail, be reviewed to determine if the equations are indeed conservative.

API initiated a member-funded research program consisting of an experimental testing phase and analytical modeling phase with two independent research contractors. If upon review of results of the programs it is found that the equations need modification, the recommended practice 5L1 will be revised since API 5L is referenced in Part 195, and API 5L requires all pipe manufactured to its specifications if transported by rail to use recommended practice 5L1. Any changes to recommended 5L1 applied to 5L and, therefore, become the law.

Hopefully, based on this example it is seen that Part 195

is a dynamic document. Changing is needed when new technology becomes available for safe transportation of hazardous liquids through pipelines.

The request of the special permit to operate the Keystone line at 80 percent of SMYS is another example of the evolution of the code. As Ms. Kothari indicated in her testimony, improvements in steel-making technology have enabled the development of high-strength steels with increased toughness levels.

In order to take advantage of this improved technology, PHMSA is granting special permits to pipeline operators who can demonstrate that their pipelines can be operated safely at 80 percent SMYS by increasing the stringency of other requirements, such as the 4-foot depth of cover and enhanced toughness requirements to protect the pipeline.

These conditions demonstrate the Federal Government's careful approach in implementing the 80 percent SMYS permit. These conditions for granting of the waiver were submitted into evidence as TC 11 earlier in these hearings.

Q. Are there any issues, Mr. Walsh, that you feel need clarifications based on your observations at the hearings thus far?

A. Yes.

Q. What are those issues?

A. Part 195.112 dealing with pipe material quality. There

were special request conditions pertaining to this section for manufacturing standards and puncture resistance where I believe further explanation would benefit these proceedings.

Q. What clarifications do you believe are needed regarding the manufacturing standards?

A. There have been concerns raised about one of the pipe metals contracted for this project being located in India. I've had the opportunity recently to visit the Welspun pipe mill in Anjar, India. I was contracted to provide consulting assistance to another pipe mill near the Welspun mill in India during September of 2007. My consultation activities were not related in any way to the Keystone project or the contract between ENE and the South Dakota Public Utilities Commission for review of the Keystone Application.

While in India I had made arrangements with the production manager at Welspun to tour the pipe mill and evaluate the production methods and the quality of program. Based upon that visit and evaluation, it is my professional opinion that the Welspun mill equals or exceeds the manufacturing standards compared to pipe mills in North America.

Q. What clarifications do you believe are needed for puncture resistance?

A. There appeared to be some misunderstandings between the values of excavator weight Mrs. Kothari was explaining during her testimony and the values of the puncture force I believe the

Commissioners were asking about. If this is not the case, I apologize for repeating this testimony.

The puncture calculation is comprised of two parts. The first, calculation of the puncture force required to actually puncture the pipe and the second, the calculation of the size of the excavator capable of exerting that force.

Keystone's calculations showed that the pipe was capable of resisting force generated by a 51 ton excavator I believe and that the largest excavators available in North America were 46 tons. Therefore, the resistance of the pipe to puncture was sufficient.

It appeared the Commissioners were interpreting the 46 tons of puncture force required to penetrate the pipe. Just to be clear, the puncture resistance of the pipe assuming a bucket tooth of 1 and a half inch length and a half-inch width is approximately 55,000 pounds. The excavator capable of exerting 55,000 pounds would weigh about 51 tons.

A second issue with puncture resistance is that the special permit condition, number 8, states that the pipe must be puncture resistant to an excavator weighing up to 65 tons with a general purpose tooth of approximately 3 and a half inches by one-half inch. This is higher than 51 tons testified by Keystone at the hearings. But to avoid any confusion that may result from the comparison of the testimony to the requirement of condition number 8, I would like to offer the following:

With the tooth size specified by the special permit, the pipe used in this project has a puncture resistance of 99,000 pounds and the corresponding excavator weight is 102 tons, well in excess of the requirement.

Q. Are there any issues that you requested clarification from Keystone in your direct testimony or surrebuttal testimony?

A. Yes.

Q. What are those issues?

A. The issue of assumptions for calculating drain down volumes for various pipeline segments used for emergency response planning.

Q. And have those issues been resolved to your satisfaction?

A. Yes. Mr. Thomas from Keystone provided me with details of the procedure in general and for the specific pipeline segment that I referred to in my surrebuttal testimony. The difference in our understanding is due simply to a matter of pipeline terrain resolution.

The resolution of the pipeline terrain on the hydraulic profile sheet that I was using was not sufficient to see the product quantities that would be trapped by the elevation profile and not included in the drain down volumes.

The procedure used by Keystone in calculating the spill release volumes for the energy planning are conservative or worst case. All of the liquid in a pipeline segment available to be spilled during a release are, in fact, considered as

released. There is no consideration of a lesser amount being spilled because the emergency response teams clamping the leak.

The calculated spill volume presented in the plot of Exhibit TC 20 presents a reasonable representation of the spill volumes to be considered in emergency planning.

With this clarification, I reaffirm my statement in the direct testimony that the overall selection of the valve placement locations appears to provide a rational risk-based approach to protecting HCAs as currently defined.

Q. Do you have a recommendation for the Commission?

A. Yes.

Q. Based on your education, experience, and review of the documents filed in this matter, please provide a review of your recommendation.

A. It is my opinion that TransCanada Keystone has satisfactorily complied with the requirements of the Subparts: C, design requirements; D, construction; E, pressure testing; and F, operations and maintenance of 49 CFR 195, which I have reviewed.

I further believe that adherence to the conditions of the special permit will indeed provide a level of safety equal to or greater than that which will be provided if the pipelines were operated under existing regulations.

MS. SEMMLER: Mr. Walsh is available for cross-examination and Commissioner questions.

MR. SMITH: Did you wish to offer your exhibits at this point?

MS. SEMMLER: I forgot the last time too. Yes. I would like to offer Exhibit 10 and 18.

MR. SMITH: Mr. White, is there an objection?

MR. WHITE: No objection.

MR. RASMUSSEN: No objection.

MR. HOHN: No objection.

MR. SMITH: Staff Exhibits 10 and 18 are admitted.

Mr. White, I'm assuming you'd be going first here. That's the Order we've been pursuing thus far.

MR. WHITE: That would be fine. And Keystone would have no questions of Mr. Walsh.

MR. SMITH: Mr. Rasmussen.

MR. RASMUSSEN: Thank you.

CROSS-EXAMINATION

BY MR. RASMUSSEN:

Q. Mr. Walsh, the testimony about the puncture rate of the pipe, does that assume the pipe is under pressure or empty, or does it make any difference?

A. Yes. It assumes the pipe is under pressure.

Q. Okay. Your direct testimony isn't -- the pages aren't numbered. At one point you talk about -- it's the sixth page. I numbered them myself. But it would be the sixth page of your testimony which references the field bending of the pipe.

A. Yes.

Q. Does field bending of the pipe cause any concerns with regard to pipe strength or have any impact on that?

A. No. The rate of bending is low enough that it doesn't affect the pipe, the strength of the pipe significantly.

Q. The testimony you gave just a little bit ago, it appeared to me you were reading that?

A. Yes.

Q. Did you prepare the written document that you read from?

A. Yes, I did.

Q. And the questions that were asked of you then?

A. Yes.

Q. Looking at I think it's the ninth page of your direct testimony, it has a little chart on the bottom of the page.

Do you have that?

A. Yes, I do.

Q. Okay. At the very bottom of that page, lines 28 and 29, talks about the response time for high-volume area with tier 1 resources and then you state, It seems unlikely that the calculated spill volume could be contained in just over 25,000 barrels based on this response time.

Do you still believe that to be the case?

A. That was part of the clarification in the surrebuttal.

Q. I'm sorry. What was the clarification then?

A. That the full volume of liquid that would be available to

be spilled from any pipeline segment would, in fact, be released.

Q. Okay. On page -- it would be the 10th page. You talk about auxiliary power will be provided by an uninterruptible power supply system.

Will that system be enough to handle the pipeline in the event of a major power failure?

A. I don't have direct information of the specifications of the amount of power that are available, but it has to be designed to those specifications.

Q. On it would be the second to the last page of your direct you talk about pressure surges and state that the importance of minimizing pressure surges is increased with the granting of the 80 percent SMYS special permit.

Why is that?

A. Because the pipe is thinner in those regions.

Q. And then the next paragraph you said, We would request that Keystone include the effects of unexpected, instantaneous loss of pumping equipment in the surge analysis.

That surge analysis hasn't been completed yet, has it?

A. I don't believe so.

Q. But when it is completed that's a recommendation that you're making. Is that the way I read that?

A. That's correct.

Q. There would be less of a concern if the 72 percent design

factor were used with regard to this surge issue?

A. Well, as stated in -- by the granting of the waiver that all the -- the pipeline at the waiver condition is as safe or safer than under the existing regulations.

Q. But you stand by the statement, The importance of minimizing pressure surges is increased because of the use of the thinner pipe; correct?

A. It should be looked at closer, yes.

MR. RASMUSSEN: I have nothing further.

MR. SMITH: Mr. Hohn, questions of Mr. Walsh?

MR. HOHN: Yes.

CROSS-EXAMINATION

BY MR. HOHN:

Q. On page 2 of your original direct testimony -- your direct testimony, between items lines 33 and 47 you state -- you make reference to 80 percent SMYS and came up with a thickness, .338; is that correct?

A. That's what it says in the testimony, but that is also one of the clarifications that was made in the surrebuttal testimony.

Q. Yeah. And I want to get to that, I guess. And then on the next page it's the same question you're answering, and it's the second part of your answer, at 72 percent SMYS you calculated the size -- the thickness being .375; is that right?

A. That's correct.

Q. So it would be a .10 difference, 10 percent reduction?
A. Right.
Q. In your rebuttal you change that. And you and the representative from TransCanada -- she questioned it, and you have changed yours in your rebuttal.
Can you explain why the change?
A. Yes. I was working with a specified minimum yield strength of 80,000 psi. And even though that was discussed in some of the Application material, the final design was for 70,000 psi.
Q. And the difference between the 70 and the 80, what's the significance in terms of operation of the pipe and safety? Is it 10,000 --
A. There's no difference in significance because any difference in the -- in the yield strength of the pipe is made up for in increased thickness.
Q. Based on the way you've calculated it in your direct testimony, under that scenario is the -- is the pipe -- does the pipe have 10,000 psi per square inch more strength? Is it stronger?
MS. SEMMLER: I object. I believe it was just testified to that the strength is made up for the steel quality. So asked and answered.
MR. SMITH: Well, I'll overrule it, but --
MR. HOHN: Be more specific.
MR. SMITH: Well, just get to the point.

Q. I'm trying to get to the point, and I guess I need a bit of help in asking the question. But your answer went from 80 to 70. You changed your answer essentially and concurred with their review of your testimony.
But in the process what happens in the strength of the pipe and the safety of the pipe going from 80 to 70? Is it a lesser pipe?
A. The pipe becomes thicker, and there is no change in safety.
Q. The pipe becomes thicker going from 80 to 70?
A. That is correct.
Q. Okay. And on page 3, the top of the page, that calculation, .375 thickness, that's the same number that's on the small piece of pipe. You were wondering where I got the number; right? .375.
A. That is the same number, but that's not the number that's used in the design.
Q. I know. That's where we got the number. On page -- I'll have to go back and see which one I want. I guess it's page 9 of your testimony, your direct. Line 20 through 25. Do you see that there?
There was discussion or difference of opinion between you and Mr. Thomas regarding 25,000, and I believe he had a lesser number in this calculation, this scenario with the graph.
A. Yes.
Q. Can you explain again why the two numbers and why the

change?
A. The hydraulic profile that I had available to me wasn't of sufficient resolution for me to see all of the undulations along the pipeline terrain. So there are regions of that pipeline volume that will not drain down. They'll be trapped in the pipeline.
And Mr. Thomas had made available to me the high resolution hydraulic profile, and I'm in agreement with that calculation that all the liquid that is available to be released would be released. And the volumes are, in fact, lower than I had originally thought based on my inaccurate profile.
Q. So when you say profile you're talking about an elevation map?
A. An elevation map.
Q. And the difference in accuracy between two maps or --
A. Difference in resolution. They were both accurate.
Q. Yes. I'm sorry. Resolution. Again, I'm not -- I'm going to have to go back and verify the page. It would be 11. And it's line 34 through 41 regarding fire fighting equipment available.
Do you see that?
A. Yes.
Q. Fire fighting equipment that would be available at the pumping stations. You're familiar with the type of pumping station they're proposing to construct?

A. Yes.
Q. What are the practical kind of fire risk or exposure that might occur at a pump station?
A. Usually none if it's operated safely.
Q. In the testimony that we submitted regarding the Aleyska Pipeline they showed several pump stations that had failed.
Would you have any idea of why they might have failed?
A. I can't conjecture on that.
Q. So based on that statement, 37 to 41, there will be lower explosion level gas detectors; right? What gas is that detecting? What is that looking for?
A. That would be any volatile liquid that would be associated with a pumping station.
Q. What kind of gas might come off of a crude oil pipeline? Is there some kind of gas that moves with the oil?
A. I'm not sure.
Q. Okay. Does the electrical wiring in that building have to meet a certain code to -- explosion proof code?
A. It has to be explosion proof, yes.
Q. Who would normally -- in your opinion based on other projects, who would normally verify and inspect that?
A. I'm not sure who would inspect that.
Q. And then there would be fire extinguishers near the door or entrance. When you say fire extinguishers are you talking about the small red extinguisher, or is it something more elaborate

than that?

A. It would be the small red.

MR. HOHN: Thank you.

MR. SMITH: Commissioner questions? Commissioner Kolbeck.

COMMISSIONER KOLBECK: Yes, Mr. Walsh. When you had specified that in Title 49, Part 195 if you don't comply with that, there are fines and jail time, could you give me an example.

THE WITNESS: No. I don't have an example. But it is the law so it has to be obeyed.

COMMISSIONER KOLBECK: Sure. Would it be your understanding -- would there be any reason why a licensed electrician in the State of South Dakota could not do the electrical wiring you had specified in the pump stations?

THE WITNESS: None that I can think of, no.

COMMISSIONER KOLBECK: So they would probably be susceptible to State inspectors just like anything else?

THE WITNESS: Yes.

COMMISSIONER KOLBECK: Okay. Could you go over that -- numbers, the 10 percent again. I did not get that clear in my head.

THE WITNESS: Are you talking about the puncture resistance or the thickness of the pipe?

COMMISSIONER KOLBECK: The thickness.

THE WITNESS: Thickness of the pipe. I guess I'm unclear which --

COMMISSIONER KOLBECK: The numbers have changed.

THE WITNESS: From 80 to 70?

COMMISSIONER KOLBECK: Yeah. And you had given an example.

THE WITNESS: In my original testimony I was under the impression that some 80 percent -- or, excuse me, 80 ksi or yield strength pipe was to be used in the project. And those calculations were based on that. Because it's a stronger strength pipe, a thinner thickness is required.

COMMISSIONER KOLBECK: Okay.

THE WITNESS: In the rebuttal testimony Ms. Kothari indicated there was no X80 pipe being used in the project. It was only X70. So I revised thickness calculations for the lower strength steel which results in a thicker pipe.

COMMISSIONER KOLBECK: Okay. So you made calculations maybe like in a Schedule 40 pipe when you found out it was like maybe a Schedule 30 pipe so you had to adjust?

THE WITNESS: The Schedule 30 and 40 refer to thickness. So it's similar to that, but in that case we'd be adjusting the strength to keep that proportion equal.

COMMISSIONER KOLBECK: Okay. Thank you.

MR. SMITH: Commissioner Hanson.

COMMISSIONER HANSON: Good afternoon, Mr. Walsh.

THE WITNESS: Good afternoon.

COMMISSIONER HANSON: Your testimony presents a lot of interesting information on the quality of the pipe, the strength of the pipe, and I think it addresses a lot of my concerns about the potential for failure and potential for any leakage.

I'd like to, however, have you educate me just a little bit. I hope it doesn't take too terrible long to do it. On -- I don't have a page number here. I believe it's page 4. I'll just read the portion that -- I don't think it's important that you turn to it.

On your direct towards the bottom on Condition 4 you were talking about what provisions for pipe material quality are being used in Keystone Pipeline. And you talk about sharpy V-notch and drop weight tear testing. I'm looking for something in layman's terms here.

The question that I have -- there's two questions. One is that the stipulation you referred to should ensure that the ductile fracture propagation will not occur in the Keystone. I assume that that means what it says. But explain that information a little bit for me, please.

THE WITNESS: The ductile fracture propagation properties are indicated by these -- by the sheer area of these tests. The tests have notches in them so they're intended to fail at a certain location. And it requires a certain amount of energy to pull these apart. The more energy required to

initiate a crack, the more tough the material is.

The 80 percent is a reference to the amount of sheer area that the fracture surface sees. It takes a lot of energy to create sheer area. So the higher percentage of sheer area on these samples is an indication of the toughness of the pipe.

For clarification, what toughness really means is the ability of the material to resist turning a relatively small imperfection under load into a large rupture. So the tougher the pipe, the better resistance to forming a large rupture from -- a small rupture would be under load. Is that clear?

COMMISSIONER HANSON: It's clearer. Crystal is the -- perhaps not the right term.

On Condition 2, you speak of manufacturing standards, that the API 5L specification level 2 is the highest specification. And within that we've been talking about this 80 percent, 72 percent, et cetera.

Looking at you as a neutral observer to a great extent to give me some calm on my concerns for the strength of the pipe. In their Application in some areas, not withstanding the testimony that the structure needs to be stronger in order for the boring purposes to be pushed underneath, looking at the fact -- forgive me for the length of the question.

But in other areas it appears that there is reason for having a 72 percent as opposed to the -- excuse me. I got them confused. I'll just use thinner and thicker.

The thinner pipe in areas where it would seem that it's not necessarily for the purpose of boring. What concerns would you have if you were a resident in those areas operating a farm, using large equipment?

Would you think that there would be a likelihood over a 200-mile area for failure or puncture as a result of equipment being operated?

THE WITNESS: No, I wouldn't. And a lot of that relates to that Condition 2 that you talked about.

The API product specification level 2 is the -- requires the higher toughness pipe that we talked about in the last question where if somehow the excavating equipment did dig down the 4 plus feet and contact the pipe and perhaps put a -- unlikely that it would puncture but perhaps put a dent or a gouge in the pipe, the extra toughness that's required in the PSL 2 level, these toughness values that we're referring to, give it the extra -- I guess the extra protection it would need not to turn a small flaw into a big ripping flaw.

COMMISSIONER HANSON: You were here during the discussion, and you alluded to it during your testimony about the 51 tons and the pressure. And in your testimony you talk about Condition 8, puncture resistance, and you spoke to that a little bit.

Focusing on just a roadway and the depth that this pipe is going to be buried beneath the roadway, how close to

that level of pressure could a vehicle, 10,000 bushels of corn on a -- I recognize that they have more axles, but just trying to get an idea.

How close would two of those trucks passing side by side opposite directions for whatever reason they'd be going opposite directions fully loaded, I don't know, but what's the chance of that having any effect on that pipeline?

THE WITNESS: Very little. In my direct testimony I believe I talked about some -- at the road crossings. It's labeled 195 2.256 where there are engineering calculations that are done based on the depth of the -- depth of the pipe under the crossing and the wall thickness, the diameter.

And it calculates the stresses that the pipe sees, in addition to carrying the pressure. I did run those calculations and indicated that the -- that the pipe that was being used for this -- for this project didn't show stresses in any danger for those -- for those crossings.

The loads that are used for those crossings are pretty much default standard loads, which are to -- I believe they're semi trucks, double axle semi trucks that go over the road. And it is a certain load that's assumed on the road that's going over the pipe itself. And the stresses are well below any fatigue limit which would be the concern because it's a -- a cyclical repeating load, unlike a pressure load from --

COMMISSIONER HANSON: I really haven't seen much

information on temperature changes, and I recognize that the product will be heated at -- to go through the pipe. But what effect would you ascertain -- or can you even answer this question -- freezing temperatures, 20, 30 below zero, extended period of times, and thawing, freezing, thawing.

THE WITNESS: Well, the freeze thaw doesn't have a very big effect on the integrity of the pipe. The main concern is really the very low temperatures. But that is -- that's addressed again by Condition 2 of the higher toughness materials that are used in the pipe.

The testing occurs at low temperatures to ensure that the steel remains ductile at those temperatures and still maintain the fracture capability that they're designed for.

COMMISSIONER HANSON: Thank you.

MR. SMITH: Commissioner Johnson.

CHAIRMAN JOHNSON: Good afternoon, Mr. Walsh.

THE WITNESS: Good afternoon.

CHAIRMAN JOHNSON: On page 5 of your direct testimony, your prefiled direct, you do note pig launchers and receivers, and you note that their pipeline design with regard to those -- that equipment is generally adequate to ensure the line has a capability of proper in-line inspection.

Would additional pigs ever make this pipeline -- would it be likely to make this pipeline more safe? Safer, rather.

THE WITNESS: Well, the Application -- not the

Application but the granting of the special permit places stipulations on how often the in-line inspection is required for I think it was the first -- I think actually it requires it for the life of the pipeline since it's been granted this waiver.

And the integrals, I don't recall exactly what they were. But they are specified up and above of what would typically be specified by the regulations because of the granting of the waiver.

CHAIRMAN JOHNSON: Is it too simplistic to think more pigs equals a higher likelihood of identifying structural concerns within a pipe?

THE WITNESS: Certainly the more often you do it the better, but it is determined on the rate of corrosion, you know, that would be measured if you found any during the in-line inspection. But there is a practical limit on you wouldn't want to do it every month or --

CHAIRMAN JOHNSON: There's a point of diminish and return at some point; is that right?

THE WITNESS: Correct.

CHAIRMAN JOHNSON: I think I heard you say in your oral testimony -- your direct in response to Ms. Semmler's comments did you say upon further evaluation and the filing of your surrebuttal and the information you received after that you do believe the valve placements is now appropriate?

THE WITNESS: Yes.

CHAIRMAN JOHNSON: The proposed valve placements. Okay. On page 11 of your prefiled direct you do discuss surge -- pressure surges.

Are there any best practices utilized in the crude oil and pipeline industry today to deal with pressure surges that have not been proposed to be utilized by TransCanada for this pipeline?

THE WITNESS: No. I believe they're using the state of the art analysis methods.

CHAIRMAN JOHNSON: Do you have any concerns about this proposed pipeline that you didn't have an opportunity to address in your direct testimony or your surrebuttal or under questioning from any of the parties yet?

THE WITNESS: No, I don't.

CHAIRMAN JOHNSON: That's all I've got at this time, Mr. Smith. Thanks.

MR. SMITH: Thank you. Redirect?

MS. SEMMLER: None. Thank you.

MR. SMITH: Any recross, Mr. White?

MR. WHITE: Just a few.

RECROSS-EXAMINATION

BY MR. WHITE:

Q. Mr. Walsh, is it your opinion that the frequency of pigging required by the PHMSA special permit is adequate to ensure the safety of the Keystone Pipeline?

A. Yes, I do.

Q. And Mr. Rasmussen asked you about your recommendation that Keystone commit to include the effects of instantaneous loss of pumping equipment in its surge analysis.

Are you familiar with the rebuttal testimony of Mr. Thomas on that issue?

A. Yes, I am.

Q. Do you recall whether he committed to include your recommendation in his surge analysis?

A. Yes, he did.

Q. Is that satisfactory to you?

A. Yes, it is.

Q. Just a follow-up on a question from Commissioner Hanson. Is it your understanding that the product in the Keystone Pipeline will be heated before it's transported, if you know?

A. I guess I don't understand the question.

Q. I thought there might --

A. The liquid product or --

Q. The crude oil in the pipeline. Will it be heated before it's transported?

A. I believe it will just -- the heating occurs during the pumping.

Q. Okay. So there will be no artificial heating that you're aware of?

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

Q. And, as I understand it, you reviewed the compliance of the Keystone design with respect to certain subparts of 49 CFR Part 195; is that correct?

A. That's correct.

Q. So with respect to the portions of 49 CFR that you reviewed, is it your opinion that Keystone would comply with those applicable rules and laws?

A. Yes, it is.

MR. WHITE: Thank you.

MR. SMITH: Any additional questions by Mr. Rasmussen?

MR. RASMUSSEN: Just one.

RECROSS-EXAMINATION

BY MR. RASMUSSEN:

Q. Following up on Commissioner Kolbeck's question, I just want to make sure I understand. The X80 pipe is stronger than the 70 pipe. That's why the X70 has to be a little thicker?

A. That's correct.

Q. How many different X types of pipe are there?

A. There's many.

Q. Okay. How high does it go?

A. Current practice, X80 is the limit right now.

Q. Okay.

A. And there are cases of tests on higher level pipe, but X80 is the highest used in practice that I'm aware of now.

MR. RASMUSSEN: Thank you.

MR. SMITH: Any last follow-up, Mr. Hohn?

MR. HOHN: Yes.

RECROSS-EXAMINATION

BY MR. HOHN:

Q. On page 5 of your direct, this is -- there was a difference between your original statement was 25,000 barrels might escape the pipe or not be able to be contained. And I -- I just wanted to clarify.

Your statement then would be now is that it's 21,384; is that correct?

A. That's correct.

Q. Okay. And we're talking barrels of oil?

A. Barrels.

Q. At 42 gallons a barrel, is that -- how many gallons is that?

A. I'd have to calculate that.

Q. Would it be -- would 890,000 sound about right?

A. I'd have to calculate that. I'm not that quick.

Q. Okay. Well, I'd like to -- you know, we -- the people in the industry always talk barrels, and those of us in water talk gallons. But I calculated it, and it looked to me like it was in excess of 800,000 gallons.

MR. WHITE: I'm going to object to that. I think the witness has answered twice that he's not comfortable calculating that.

MR. SMITH: Sustained. It's an arithmetic calculation anyway that anybody out there can perform.

Q. The question, I guess, is that's a sizable amount of oil, isn't it, if that leak were to occur?

A. That's a relative question, I guess.

Q. Have you ever seen a leak that large, inspected a leak that large?

A. No, I haven't.

Q. Okay. And then with regard to the crossing, road crossing, I think one of the Commissioners asked you about road and highway crossings and strength.

Have you seen oil pipelines installed across highways where the pipe was sent through a second casing?

A. I haven't seen the installation process, but I've seen them excavate it.

Q. Would one advantage of having a casing under a highway be that it directs -- if there is a leak under the road, it directs it to either end of the casing?

A. I think that was the original intent of casing pipe.

Q. The Applicant testified or one of their people testified that the reason they prefer not to put casings in is it conflicts with cathodic protection.

Would you agree?

A. That's correct. That's my understanding.

Q. Okay. One last question. When valves and check valves are

installed on a pipeline of this type, are flanges -- is the valve flanged?

A. It's typically welded.

Q. Typically welded to the valve?

A. That's correct.

Q. Okay. In your resume it looks like it must be the first page of your vitae, under project experience -- it's the one, two, three, fourth item down, microbiological influence of corrosion.

MR. WHITE: I'm going to object. This is going well beyond the scope of the redirect.

MR. SMITH: It certainly is.

MR. HOHN: So that's it.

MR. SMITH: Is it a question you feel is --

MR. HOHN: Well, it's not been addressed before, and frankly I haven't noticed it until now.

MR. SMITH: Go ahead and ask it. Overruled.

Q. What type of work were you doing when you were doing this work, microbiological influence?

A. MIC, microbiological influence corrosion. I was a research scientist at Battelle at the time, and we were looking at modeling pressure cycles on stress corrosion cracking, the rate of stress corrosion cracking. I'm sorry. The question was for MIC?

Q. MIC, yeah.

A. Okay. Yeah. I guess I don't have that in front of me. Let me find that.

Oh, this is the project experience. Okay. I understand. What was the question again?

Q. The question, as part of your project experience was working with MIC, leak in pipe. What is that --

A. It says actually a pipeline drip. And this is a feature in natural gas pipelines where the drip is connected to the pipeline located beneath it, and any liquids that are entrained in the gas stream go into the drip and the drip is frequently blown they call it where the liquid is removed.

Q. So it's a smaller pipe that comes off the bottom of the pipe?

MS. SEMMLER: I'll object to this as irrelevant. We just heard it's natural gas.

MR. SMITH: Sustained.

MR. HOHN: I didn't know that when I asked the question. Thank you.

MR. SMITH: Could I ask you one last question? Again, I'm probably outside of the cross-examination bounds too, but I just -- and I can't remember the page. It's, you know, where you got your two bar charts in your direct here. Again, we're back on the road and railway question.

It's before the two -- the section analysis and the spill outflow. It's the page before that. It's 8 or 9.

THE WITNESS: I think I found it.

MR. SMITH: The last sentence you say, Typically the wall thickness is determined by the stresses during installation by boring rather than the requirement for withstanding vehicular loads.

And I recall reading that somewhere in here. I think it was Ms. Kothari's testimony.

THE WITNESS: Yes, it was.

MR. SMITH: And does that generally mean that the bearing strength of the pipeline may significantly exceed what would be necessary to bear actual road loads?

THE WITNESS: So road loads and pressure loads, yes.

MR. SMITH: Thank you.

Commissioner Kolbeck.

COMMISSIONER KOLBECK: I'm sorry. I just have one more question. It was my understanding that encasing a pipe inside another pipe encourages corrosion.

THE WITNESS: That's my understanding, yes.

COMMISSIONER KOLBECK: Okay. So that's why it's not a good practice.

THE WITNESS: It's not practiced anymore.

COMMISSIONER KOLBECK: Okay. Thank you.

MR. SMITH: Any redirect?

MS. SEMMLER: None. Thank you.

MR. SMITH: Thank you, Mr. Walsh. I think you're

done.

(The witness is excused)

MR. SMITH: Is Staff ready to call its next witness?

MS. SEMMLER: Staff will now call Mr. David Schramm.

(The witness is sworn by the court reporter)

DIRECT EXAMINATION

BY MS. SEMMLER:

Q. Please state your name, employer, and business address for the record.

A. David Schramm, 7135 Janes Avenue, Woodridge, Illinois. I'm employed as vice president and senior product manager by EN Engineering. We're an engineering consulting firm specializing in pipeline design services for the oil and gas industry.

Q. Please tell us about your education and work experience.

A. I have B.S. Degree in resource management from Iowa State University. I've worked in positions of responsibility having over 26 years extensive experience in the application of corrosion control, cathodic protection, and pipeline integrity.

For the first 10 years I worked in a corrosion cathodic protection consulting industry. During this 10-year period I was involved with the monitoring surveys along the TransAlaska Pipeline system and assumed responsibility for the corrosion control program on the Lake Head Pipeline portion of the Interprovincial Pipeline system, which is now Enbridge.

During this period I also performed work on other metallic structures, including the assessment and protection of lead sheet cable, ductile and cast iron piping systems, water well systems, underground and above-grade storage systems, metallic dock structures and heat exchangers.

During the next 10 years I was employed by Northern Illinois Gas, which is now Nicor Gas, directing the corrosion control and cathodic protection programs to protect seven underground storage gas systems, approximately 2,500 miles of large diameter gas transmission pipeline, and a large gas distribution system which surrounds the City of Chicago from the Wisconsin border to approximately the middle of the state.

During this period I was also managing the research and development laboratory operated by Nicor Gas.

Since 2002 I am employed by EN Engineering with responsibilities that include the technical support, the pipeline and corrosion control service offering, including the development and maintenance of technical specifications and procedures, project oversight, quality assurance or corrosion control, cathodic protection, fuel failure and integrity management projects and proposals, and the qualification and training of corrosion control, fuel failure, and system integrity personnel.

I am certified by the National Association of Corrosion Engineers, both a cathodic protection specialist and a corrosion

technologist.

Q. And you were employed by the Commission to consult with staff on this case; is that correct?

A. That is correct.

Q. Can you tell us in general what you reviewed or analyzed to file your prefiled testimony and to testify here today?

A. I reviewed the Application for the permit for the Keystone Energy Pipeline and associated filed exhibits, the Petition of TransCanada Keystone for the 80 percent specified minimum yield strengths special permit, and the grant of the special permit from PHMSA.

Q. Did you request any information from any party to the case?

A. Yes. To TransCanada through the Public Utilities Commission staff.

Q. And did TransCanada respond in a timely fashion?

A. Yes.

Q. And as part of your analysis in this case did you review the burden of proof contained in SDCL 49-41B-22?

A. Yes.

Q. You'll see in front of you what's been marked for identification purposes as Staff Exhibit 8. Is this your prefiled direct testimony?

A. Yes.

Q. Do you have any additions, deletions, or corrections to make?

A. No.

Q. If you answered -- were asked those questions today, you would answer the same?

A. Yes.

Q. You'll also see in front of you what's been marked as Staff Exhibit 16. Is that your prefiled surrebuttal testimony?

A. Yes, it is.

Q. Can you please summarize your surrebuttal -- I'm sorry, your direct testimony and your surrebuttal testimony there in front of you?

A. Yes. My testimony addresses the relevant portions of the federal requirements related to the design, construction, and operation of the facility with regard to 49 CFR Chapter 1 Subpart H only, Corrosion Control. This represents Sections 195.551 through 195.589 of code.

Section of code prescribes the minimum requirements for the cathodic protection of steel pipes against corrosion. In general this section of code relates to the protection of facilities from external underground or submerged, internal, and atmospheric corrosion. It also prescribes to issues related to supervisor qualification, monitoring and document retention, electrical isolation, straight current interference, and assessment and repair methods of corrosion is discovered.

Applicable testimony. The PHMSA grant of waiver and the TransCanada Petition were all reviewed in contents to the

regulatory sections of this code section. In my initial testimony and documented review the information received was found to meet or exceed the intent of the code sections under Subpart H, with the exception of seven sections where additional documentation was necessary in order to determine intent.

In my surrebuttal additional information was provided by Meera Kothari on these seven sections. Based on this additional submitted information, the provided information was found to meet or exceed the intent of all the code sections under Subpart H.

Q. You've heard some testimony today regarding field application of fusion bond epoxy. Can you tell us a bit about your experience regarding that procedure?

A. Yeah. The application of fusion bond epoxy in the field is done through two methods. One is either induction fusion, or liquid epoxies is the other kind of form, which is really not a fusion bond epoxy. Both of those involve inspection work, surface preparation, and confirmation using -- or Holiday detection looking for defects in the coating prior to burial using what's called a Holiday Detector or more traditionally called a Jeep. Okay.

The coating as far as surface preparation is done to standards. There's a defined set of standards, either through SSPC, which is the Steel Structures Painting Council, if I remember the SSPC acronym correctly, or through NACE documents

as well, National Association of Corrosion Engineers. They prescribe the type of coating that -- or the surface profile that needs to be done, to what level does that profile need to be done, how solvents are removed in that pipe.

Typically on induction fusion bond epoxy the pipe is then heated by an induction clamp to drive off both moisture as well as to heat the pipe up to bring it to a temperature where the epoxy pellets are then applied and melted very similar to what the mill application is doing as well. So the same surface standards, the same quality standards are all done at the field location.

Material's allowed to cool or come back to a normal texture basis for that application, and then it's electrically inspected for Holidays, exactly the same methods that are done within the mill applications.

Q. Do you have any recommendations for the Commission today?

A. Yes.

Q. Based on your education, experience, and review of those documents, could you please provide a summary of the recommendations?

A. As documented in my testimony, Keystone has the intent to meet the code requirements contained in U.S. Department CFR Part 195, Subpart H and provides applicable and appropriate industry referenced documents and standards that Keystone will use.

For some sections of code Keystone is taking a more proactive approach to exceed the code requirements, whether done voluntarily or directed under the grant of waiver.

MS. SEMMLER: And with that I will offer Staff Exhibit 8 and 16, and the witness will then be available for cross-examination.

MR. WHITE: No objection.

MR. RASMUSSEN: No objection.

MR. HOHN: No objection.

MR. SMITH: Staff's 8 and 16 are admitted. And, Mr. White, is it you again?

MR. WHITE: It is. And Keystone would have no questions of Mr. Schramm at this time.

MR. SMITH: Mr. Rasmussen.

CROSS-EXAMINATION

BY MR. RASMUSSEN:

Q. Mr. Schramm, you mentioned in your direct testimony a breakout tank. What is that?

A. A breakout tank is part of the process facilities sometimes used to temporarily handle material before it's re-injected or reused. So it's basically a process tank used in the process.

Q. What advantage are there to breakout tanks? Why are they used?

A. They're used as part of the process of moving oil. I believe in the testimony I presented there are none in the

State of South Dakota.

Q. Are they a safety factor at all?

A. No. Their only requirement, which I had to look for from code under Subpart H, is whether or not they are cathodically protected or not cathodically protected. Since there are none, I have no --

Q. You didn't have to look at that then.

A. That's correct.

Q. Okay. With regard to the special permit, there's these 51 conditions attached to it. Who monitors TransCanada's compliance with the conditions like that?

A. The way I understand the document is that TransCanada must supply information back to PHMSA as to their accountability, and those questions especially with regard to close interval survey and those actions along the pipeline with regard to that grant of waiver.

Q. And paragraph 19 of your direct testimony you mentioned that TransCanada has chosen to not electrically isolate the pipeline from pumping stations.

Can you explain what you mean by that?

A. Under the section of code that relates to electric isolation, the code section prescribes that if you don't -- if you choose to protect your facilities as an integrable unit, all of it together, you do not need to use electrical isolation. If you are going to apply cathodic protection and basically break

it up or not choose to protect it all, you can use electrical isolation and put that in place.

So since they chose to electrically continuously protect everything and not install electrical insulators, they are meeting that code element because they chose not to do that.

Q. By not electrically isolating the pipeline does that make it more susceptible to lightening in any way?

A. No.

Q. You talked about the field application of fusion bond epoxy and the various requirements. Despite the existence of such requirements, I mean, there are times when people in the field don't always follow all the requirements.

Would you agree with that?

A. That's true.

Q. And if that happens, then you have a potential problem?

A. That could lead to a problem, yes.

Q. And your testimony certainly isn't that a pipeline with fusion bond epoxy can't leak? You're not saying that, are you?

A. No.

Q. Are you familiar with any leaks in fusion bond -- or pipes with fusion bond epoxy in your personal experience?

A. No.

Q. You talked about a Holiday. Maybe just sort of explain what is a Holiday?

A. All pipe coatings are designed to be as effective as

actually possible. Some coatings are better at doing that than others. Fusion bond epoxy is very good at covering so that there's no spaces left in the coating.

A Holiday is basically a break in the coating, and that's what the cathodic protection is designed to protect. They're very small. They can't be seen with the eye. And, of course, the inspection is done through the use of a Jeep or Holiday Detector to detect those, and then they are repaired as part of the inspection process.

Q. Why are they called a Holiday?

A. Just a trade name for -- it's just a Holiday. I can't explain why. It's a trade name.

Q. All right.

MR. RASMUSSEN: Thank you. That's all I have.

MR. SMITH: Mr. Hohn.

CROSS-EXAMINATION

BY MR. HOHN:

Q. Is it fair to say that a Holiday is a small hole or dimple or thinness of paint in the wall -- in the paint covering or fusion bond?

A. It's a -- it could be just a less than desired thickness of the pipeline coating, yes.

Q. And so when you run the tester over that spot where that thinness exists there's an electric current that then comes through the paint and gets to the testing device?

Is that what it does?

A. Yes. The device is calibrated based on the thickness of the coating. Based on that calibration and as you pass that it's basically a spring that runs down the side of the pipeline. When applied to that point it arcs.

You mark that location and then that coating is then repaired to an acceptable repair, typically more thicker than what was originally designed.

Q. And is the same test done on tanks, coated and painted tanks, to your knowledge?

A. There is a Holiday detection for paint systems as well.

Q. You referred to a Jeep. Would you like to explain what that is?

A. That's just the trade name in the industry for what a Holiday detection equipment is. It makes kind of a Jeeping sound when it goes off.

Q. Like a chirp?

A. It's kind of a chirp, yes.

Q. I don't know what page this is, but it's in reference to Exhibit D of your direct testimony, 195.559.

A. Okay.

Q. Do you have that there?

A. Yes.

Q. It starts out that this section describes the properties that a coating material must possess. Do you have that there in

front of you?

A. Yes, I do.

Q. Okay. So mitigate corrosion, adhesion to the metal, sufficient ductile -- what's meant by sufficient ductile to resist cracking?

A. Basically is that any flexing in that coating either doing handling or burial has to be sufficient enough that it doesn't crack when that's being handled so it's ductile.

Q. When pipe of this type that's being proposed for this project is bent in the field does the FBE crack, or can it crack?

A. It can, but it would still go through the same inspection process and repair as through -- before it was directly buried. That's a requirement under code.

Q. So it would be tested with the testing device and if you found a Holiday or a crack, it would be coated?

A. Yes.

Q. I had a question on Exhibit J, 195.571. Do you have it there?

A. Uh-huh.

Q. Okay. And where it starts out the third paragraph down, April 30, 2007?

A. Uh-huh.

Q. In the center of that paragraph it's at least one CP -- I assume that's cathodic protection station?

A. That's correct.
Q. Must be located within each HCA with a maximum spacing between test stations of one-half mile within the HCA?
A. That's correct.
Q. What's the purpose of that test station in the HCA, in your opinion?
A. All test stations are used to measure the application of cathodic protection and take annual readings to determine the performance of the cathodic protection system. So regardless of whether it's an HCA or outside of the HCA, that purpose is basically to allow connection to the pipeline and to take annual readings through that device.
Q. And if the annual readings were taken, how does that help protect the pipe? Does the reading change and then someone acts on that change?
A. The readings are used to look against the criteria for cathodic protection. So they're measured and looked against that, and that would be the case. If there are less deficiencies in cathodic protection, then it would be looked at, and that deficiency would be resolved.
Q. So if you got the wrong reading or low reading or something that concerned the person taking the test, what would happen? What do you think might happen after that was found?
A. Typically if there's a low reading, that reading's confirmed, and then additional investigation is determined as to

whether -- what's causing that low reading to occur. And the mitigation system designed to cathodic method -- to the pipe would either be adjusted in the case of impressed current systems, or additional cathodic would be placed at that location.
Q. By impressed current what do you mean by impressed current?
A. There's two types of cathodic protection systems. One's galvanic. The other is impressed current. TransCanada's proposing to use a impressed current system. It's just a form of cathodic protection.
Q. Is impressed current where an electrical current is added or a voltage?
A. Both systems make use of voltage.
Q. Would that kind of testing on that -- you said an annual basis; right?
A. It is required under code on an annual basis.
Q. So if you're getting a reading that the test technician didn't like or didn't think was appropriate, they'd do some additional testing to verify what the problem is? How does it help you protect the pipe?
A. It's used in the determination of the criteria. Again, the sections that I am designed to look at really was the intent of whether or not they are taking annual readings and they have compliance.
This section says that must comply with one of the

criteria. Those measurements are used to comply with the criteria. So under code under Subpart H by taking these measurements and using the criteria -- they have established the criteria they meet under Section H, the right requirements, they are complying with that code element.
Q. And the reason for the code is to protect the pipe from corrosion?
A. That's correct.
MR. HOHN: Thank you.
MR. SMITH: Commissioner questions?
COMMISSIONER HANSON: Good afternoon.
THE WITNESS: Good afternoon.
COMMISSIONER HANSON: Welcome to South Dakota.
THE WITNESS: Thank you.
COMMISSIONER HANSON: I have just a couple of questions, I believe. On question 9, 15, 16, 22, 23, 24, 26 you make the statement that Keystone's plan in each case I believe you refer to a different exhibit needs additional documentation and providing the additional documentation is recommended as a condition of issuing the construction permit.
Will there be oversight other than the PUC as to the issuance of that construction permit? Will you or your -- are you aware of any federal or state regulation that would prohibit the issuing of the construction permit unless these are met?
THE WITNESS: No. In fact, in my surrebuttal I

removed that because I eventually received the information I needed to determine intent against the code items.
COMMISSIONER HANSON: Thank you. Question -- well, in a number of the questions as well you refer to best practices.
Are there any areas that you're aware that Keystone has not adopted best practices?
THE WITNESS: Within Subpart H, no.
COMMISSIONER HANSON: On question 19, being a novice on this I was trying to figure out exactly why TransCanada's taking a good proactive approach. You stated that they are taking a good proactive approach and have selected best practices.
However, as I read the question, the question was must Keystone provide electrical isolation. And the answer is they have chosen not to electrically isolate the pipeline. Why is not selecting -- not electrical -- why is not electrically isolating the pipeline a good idea? I thought that was not a good idea.
THE WITNESS: In the terms of their protection of their facilities under the code, they have a choice to do whether they can electrically isolate. Some companies electrically isolate at pump stations. Or in the case of dissimilar metals or different piping systems based on age, such as distribution pipeline companies. So the use of those insulators are there to help them understand and control the

pipeline system.

For a new pipeline system like TransCanada's proposing they have chosen to not put the electrical insulators in, which is their choice on how to do that under code. It allows them to install more concise cathodic protection systems, primarily within the pump stations which they're proposing that will also protect the pipeline facilities.

It removes the electrical isolation devices which would then need to be monitored on an annual basis and also protect it against lightening strikes because that lightening strike will come up to that insulator and could jump across there. So by removing that they've also reduced that risk for those capabilities of that issue as well.

So in the terms of when I reviewed the document on how they were proposing to design the pipeline system electrically by not putting electrical insulators in and to protect the system by the methods they are choosing, traditionally that method on what they're choosing is what I would call a best practice on how they were doing it. So that's why I noted it as being best practice.

COMMISSIONER HANSON: Thank you very much, Mr. Schramm.

MR. SMITH: Other Commissioner questions?

COMMISSIONER KOLBECK: Hi. Thank you for being here. I just have a few.

Are the corrosion factors for gas or refined crude and crude oil different?

THE WITNESS: I'm not sure I understand the question.

COMMISSIONER KOLBECK: We've had a lot of examples of gas pipelines and crude oil pipelines and trying to get a good comparison.

Does the inside of a gas or petroleum pipeline corrode faster or not as fast as a crude oil pipeline?

THE WITNESS: I'm not sure there's a real good way to answer that. Each of the products has their own sort of unique characteristics that you need to address through design characteristics. Wet gas situation, obviously you have the wet gas. The wet grass, the water within the gas is causing the issue.

Here in the crude oil the same issues there. And TransCanada has reduced the sediment as well as the water intake, and they're showing a turbulent flow through their modeling. And so that basically would take any water and sweep it through the pipeline system.

So they're all unique to the type of product and type of system depending on what you have.

COMMISSIONER KOLBECK: So there's really not a good apples-to-apples comparison?

THE WITNESS: Not really.

COMMISSIONER KOLBECK: Does the outside temperature

matter in the application of the FBE?

THE WITNESS: Outside temperature, fusion bond epoxy is usually applied at over 400 degrees depending on what the temperature is. I believe the pipeline from an operating standpoint is around 100 degrees. So there's a great difference when it's going to operate versus when that would need to be applied.

So, yes, there is a temperature criteria recommended by the manufacturer that would have to be met as far as the inspection requirements for TransCanada during the application.

COMMISSIONER KOLBECK: If it's raining that day or 110 that day or 40 that day, should that matter?

THE WITNESS: It shouldn't. That kind of material is applied from the Arctic Circle down to the Equator. So, again, you know, there's different formulations. Again, they're using induction heating equipment.

COMMISSIONER KOLBECK: Would you ever suggest a case-in-case method to be used for safety, a pipe inside a pipe?

THE WITNESS: I would not recommend the use of a casing on a pipeline.

COMMISSIONER KOLBECK: Why would that be?

THE WITNESS: They were traditionally used in the pipeline industry for a very long time. There are two -- and I believe Meera Kothari covered this in her testimony as well. But there are two cases.

One is called a metallic short where the casing actually comes in contact with the carrier pipe. So they basically touch each other. When that happens the cathodic protection system is no longer protecting within the casing.

There's also what's called electrolytic short where you have fluids that fill up inside the casing. And that produces what appears to be an electrolytic short, and so corrosion could occur under those aspects as well. So traditionally those aspects would tell you not to do those anymore. And most pipeline companies today no longer install casings.

COMMISSIONER KOLBECK: Okay. Thank you.

CHAIRMAN JOHNSON: I have nothing.

MR. SMITH: Any last Commissioner questions? Seeing none, redirect?

MS. SEMMLER: I have one.

REDIRECT EXAMINATION

BY MS. SEMMLER:

Q. You were asked a question by Mr. Rasmussen about the field work and that epoxy bond process and whether or not there could be an inconsistency or mistake potentially in the application of that in the field. Do you know if there would be an inspection process after that application in place to find that sort of inconsistency or mistake?

A. There's an ongoing inspection as the whole entire coating

is done. There's measurements to look at surface profile and other things that could be taken. But, yes, to answer your question that the electrical inspection of that pipeline at the end would be the final inspection typically done before the pipeline's installed down into the ditch.

MS. SEMMLER: Thank you. Nothing else.

MR. SMITH: Mr. White, additional questions?

MR. WHITE: Just a couple.

CROSS-EXAMINATION

BY MR. WHITE:

Q. The inspection process that you just described with regard to field application of FBE, in your opinion does that provide an adequate level of assurance that the FBE coating by the time the pipe is lowered in the ground will have been appropriately applied?

A. Yes.

Q. And I believe you indicated that you reviewed 49 CFR 195 Subpart H. And as a result of that review did you reach a conclusion as to whether the Keystone Pipeline would require with all applicable laws and rules as they relate to that section of the code?

A. Yes.

MR. WHITE: Thank you.

MR. SMITH: Mr. Rasmussen.

RECROSS-EXAMINATION

BY MR. RASMUSSEN:

Q. Your testimony about the casing, that wouldn't apply to putting a plastic pipe inside a metal pipe, would it?

A. That would be correct.

MR. RASMUSSEN: Okay. Thank you. That's all I have.

RECROSS-EXAMINATION

BY MR. HOHN:

Q. I'm trying to find where in your testimony -- it's your direct testimony Exhibit D, 195.559. It's the second page of that. And it looks like it's Q7-1 and then R7-1.

Do you see that?

A. Yes.

Q. The question you asked there related to how many failures or incidents related to external corrosion have occurred, and the answer responded to external corrosion.

Did you ask the question about internal corrosion, the similar question?

MS. SEMMLER: I think we're beyond the scope of redirect here. I object.

MR. SMITH: I don't know. Do you even remember?

THE WITNESS: I'd have to dig through here. I mean, there is a requirement under code for internal corrosion, and TransCanada is meeting the requirements for internal corrosion protection of the pipeline as they presented it.

Q. This question and answer related to external. Did they know of any externals, and they answered.

But did your testimony -- or did your statement and your questions ever ask about internal? That I guess is the question.

A. I couldn't answer without digging through.

MR. HOHN: Okay. Thank you.

MR. SMITH: Do you have a follow-up question?

MS. SEMMLER: I do not.

MR. SMITH: With respect to these data requests that were made -- is that what you're referring to, the data requests?

Did you make data requests only in areas where you deemed the documentation that you had already received to be in need of additional explanation?

THE WITNESS: That is correct.

MR. SMITH: Thank you. Any last questions? You're excused.

(The witness is excused)

MR. SMITH: Do you want to plow ahead, or do you want to take a short break before your next witness?

MS. SEMMLER: I'm good to go. It's up to you guys.

CHAIRMAN JOHNSON: Short break and try to get one more done before the end of the day?

MR. SMITH: That's what I'm kind of thinking.

10 minutes? 10 minutes.

We'll reconvene at 20 to 5. Thank you.

(A short recess is taken)

MR. SMITH: We're going to come back to order. It's just slightly after the time we had set, but we were having a discussion here among counsel. It's a little after 20 to, and we're back in session in the -- in Docket HP07-001, Application of TransCanada Keystone Pipeline, LP. We have a little bit of a housekeeping matter before we proceed with staff's next witness.

Earlier we had had a discussion about the responses to Staff's first data request. And there was a reference in one of the testimonies submitted I believe by the Applicant to a particular set of things in Staff's data request set 2. And that led to a discussion about whether or not the data request 1 and 2 ought to be admitted into evidence.

And it's my understanding that this has been discussed by the parties and that the parties have agreed to stipulate to the admission of Staff's -- and responses that Staff's data requests 1 and 2 and the responses to those.

Is that correct?

MR. KOENECKE: I believe so. You'll have to hear from the other parties. But we've been waiting to circle the wagons around and then it came to our attention that Mr. Rasmussen won't be here tomorrow and his replacement counsel wouldn't have the benefit of having looked at that. So I thought we better

bring it up before we close business up today.

MR. RASMUSSEN: Yeah. And that's fine for the admission of those.

MR. SMITH: Mr. Hohn, any --

MR. HOHN: 1 and 2, yes.

MR. SMITH: Number 1, of course, has been on the website all along since the -- almost the beginning. I haven't seen the entirety of 2. But if counsel has -- no side has an objection, we'll just admit those.

Do we want to -- do we need to give them an exhibit number? Should we --

MS. SEMMLER: You're looking at me. Are these going to be Staff's exhibits?

MR. SMITH: Well, you can call them whatever you want to. They're stipulated. They could be. They were responses to your data request. What's your last exhibit number?

MS. SEMMLER: 20.

MR. SMITH: Why don't we just call them Staff 21 and 22 just so we know what to call them. I don't know if you have copies that are handy for the reporter. Otherwise, we'll have to get copies for the reporter at the conclusion today.

MS. SEMMLER: I don't have copies available.

MR. SMITH: Okay. We can get those, though.

MR. KOENECKE: We'll bring copies.

MR. SMITH: Okay. Sounds good. Staff, should we -- I

don't know. Did I formally admit those? I think I did.

MR. KOENECKE: I think I did.

MR. SMITH: Okay. Staff's 21 and 22 are admitted. Those are the data requests and the responses.

MR. KOENECKE: Mr. Smith, do you show the Draft Environmental Impact Statement as admitted yet?

MR. SMITH: You know, maybe we should let her get started, and I'll dig around here and look. I can't remember. If so, it would have been your exhibit.

MR. KOENECKE: That's correct. And we did replace it and put it in those two black binders on the desk and they've sat there for a couple of days now but it's something I thought we ought to get around to.

MR. SMITH: I will look and see if I have those in my list of exhibits.

MR. RASMUSSEN: I'm sorry. What was the question?

MR. KOENECKE: The Draft Environmental Impact Statement --

MR. RASMUSSEN: It was admitted but with the understanding you guys were going to put in the full thing.

MR. KOENECKE: We did, and it's on the table there. Very well.

MR. SMITH: Yeah. I show that as TC 15. And we did admit it subject to being confirmed as being complete.

MR. KOENECKE: And we've done that to our

satisfaction, and any other party can review it. It's in the two black binders on the right-hand side of the witness table.

MR. RASMUSSEN: I'll have Mr. Tobin review that tonight.

MR. SMITH: With that, Ms. Semmler, please proceed.

MS. SEMMLER: Staff now calls Jenny Hudson.

(The witness is sworn by the court reporter)

DIRECT EXAMINATION

BY MS. SEMMLER:

Q. Ms. Hudson, please state your name, business address, and employer for the record.

A. My name is Jenny Hudson. I am currently employed by EN Engineering. My business address is 7135 Janes Avenue, Woodridge, Illinois.

Q. Please state your educational background, Ms. Hudson.

A. I have a Bachelor of Science degree in geological engineering from the University of Missouri-Rolla. Also I am a registered professional engineer in the State of Illinois.

Q. Please state your work experience since college.

A. Currently I am employed as a senior project manager at EN Engineering. My current job function includes oversight of pipeline integrity projects. I have written integrity management programs for both liquid and natural gas pipeline companies. I have assisted both liquid and natural gas companies during jurisdictional integrity management audits. I

have reviewed integrity management programs and helped operators prepare for their jurisdictional audits. Also I have done work related to corrosion control and cathodic protection.

Q. And you were employed by the Commission to consult with Staff on this case?

A. Yes.

Q. Please tell us in general what you analyzed or reviewed in order to file your prefiled testimony and to testify here today.

A. The objective of my review was to ensure that TransCanada Keystone Pipeline has met the requirements of the federal pipeline safety regulations 49 CFR 195.

Specifically, my task was to review aspects pertaining to 195.452, what is commonly referred to as the liquid integrity management rule. I reviewed various filing documents from TransCanada, including but not limited to Appendix B, Preliminary Evaluation High Consequence Areas, Petition of TransCanada Keystone Pipeline for a Special Permit to Design, Construct, and Operate a New Crude Oil Pipeline Applying Pressures up to 80 Percent, and data responses from TransCanada. Also reviewed various documents from the Pipeline and Hazardous Materials Safety Administration, including CFR 195.450 and 195.452, PHMSA protocol documents, and PHMSA frequently asked questions.

Q. Did you submit any data requests to a party when you needed additional information to do your review?

A. Yes. I did. To TransCanada through the PUC staff.
Q. And did TransCanada respond in a timely fashion?
A. Yes, they did.
Q. You'll see in front of you what's been marked for identification purposes as Staff Exhibit 9. Is that your prefiled direct testimony?
A. Yes, it is.
Q. Do you have any additions, deletions, or edits to make?
A. Yes. I would like to make one addition to line 4 of page 5 of my written testimony. It should state yes, as they have been identified by TransCanada.
Q. You'll also see in front of you what's been marked for identification purposes as Staff Exhibit 17. Is that your prefiled surrebuttal testimony?
A. Yes, it is.
Q. Do you have any additions, deletions, or edits to make to your surrebuttal?
A. No, I do not.
Q. If asked the same questions today, you would answer the same?
A. Yes.

MS. SEMMLER: With that, I will offer Staff Exhibit 9 and 17.

MR. WHITE: No objection.

MR. RASMUSSEN: No objection.

MR. HOHN: No objection.

MR. SMITH: Staff's 9 and 17 are admitted.

Q. Ms. Hudson, could you please summarize your prefiled direct and surrebuttal testimony for us.
A. Yes. In an effort to increase the integrity of hazardous liquid pipelines the United States Federal Government stated specific regulations for hazardous liquid pipeline operators to assess, evaluate, repair, and validate pipeline segments that in the event of a leak could affect populated areas, areas unusually sensitive to environmental damage, and commercially navigable waterways.

As I stated in my written testimony, I was not able to review the TransCanada Keystone Pipeline written integrity management program. However, from a code standpoint this is acceptable since per code the integrity management program does not have to be completed until one year after the pipeline commences operations.

High consequence areas as defined by 49 CFR 195.450 must be identified by the date the pipeline begins operation. Speaking from a regulatory standpoint at this stage in the process TransCanada Keystone Pipeline is meeting the requirements of 49 CFR 195.452.

To summarize my surrebuttal testimony, the process TransCanada has used for identifying high consequence areas to date is in compliance with 49 CFR 195.452. Per code, HCAs do

not need to be identified until the pipeline commences operation.

Additionally, in both my written testimony and surrebuttal I discuss preventive and mitigative measures. A preventive and mitigative measure is a measure to prevent and mitigate the consequences of a pipeline failure per 49 CFR 195.452. It is not required for TransCanada to have all preventive and mitigative measures identified at this time.

Q. Are there any areas that you feel deserve some clarification for your observations at this time?
A. Yes, I do.
Q. What are those issues?
A. During hearings and in written and surrebuttal testimony I have heard various terms used such as geologically sensitive high consequence areas and hydrogeologic sensitive areas. 49 CFR 195.452 addresses high consequence areas and unusually sensitive areas. Both of these have specific definitions which are given in 195.450 and 195.6 respectively. An unusually sensitive area is a type of HCA.

High consequence areas are specifically addressed in 195.452, and a pipeline operator must assess, evaluate, and repair pipeline segments which they have determined have the ability to affect an HCA in the event of a pipeline release. Geologically sensitive high consequence areas and hydrogeologic areas are not defined or addressed in 49 CFR Part 195.

Q. Do you have a recommendation for the Commission?
A. Yes.
Q. Based on your education, experience, and review of these documents please state in summary your recommendation.
A. I recommend that TransCanada review the proposed pipeline route and unusually sensitive areas as defined by 49 CFR 195.6 to ensure all unusually sensitive areas having the ability to be affected in the event of a pipeline release have been identified. This should be done prior to the pipeline commencing operation.

As appropriate, TransCanada should incorporate any additional USAs into their integrity management program.

MS. SEMMLER: With that, Ms. Hudson is available for cross-examination.

MR. SMITH: Is it Mr. White again?

MR. WHITE: Yes, it is.

MR. SMITH: Please proceed.

CROSS-EXAMINATION

BY MR. WHITE:

Q. Good afternoon.
A. Hi.
Q. I'd like to look at page 3 of your direct testimony. And specifically lines 20 through 31.
A. Okay.
Q. Apologies. Your surrebuttal testimony.

A. It was page 3?
Q. Page 3. Line 20 through 31.
A. Yes.
Q. Where you indicated, I believe, that -- you were referring back to testimony of a Mrs. Anderson, and you indicate that you cannot comment if these water systems that she has identified should be considered HCAs and then suggest that prior to the pipeline going into operation TransCanada should incorporate local knowledge into the HCA identification process; is that right?
A. Correct.
Q. Is that the normal process that's followed in the development of an integrity management plan?
A. Code and guidance documents by PHMSA suggest the pipeline operators should incorporate local knowledge into the development of their integrity management program.
Q. Okay. And who is it that initially identifies high consequence areas? Is it the operator, or is it the PHMSA, DOT PHMSA?
A. The Federal Government through use of the National Pipeline Mapping System has identified high consequence areas, and in order to develop those maps PHMSA worked with various agencies.
Q. And then does PHMSA incorporate feedback from operators as they further define -- as the operator helps to further define HCAs in their operating area?

A. PHMSA has stated that they will periodically update the National Pipeline Mapping System.
Q. Okay. So looking at the correction that you made to your direct testimony where you indicate that TransCanada -- that you reviewed the hazardous liquid consequence areas identified in the State of South Dakota as they have been identified by TransCanada, does that answer then suggest that it would be the high consequence areas as identified by PHMSA?
A. That would be my assumption, yes, that TransCanada has used the National Pipeline Mapping System to identify their HCAs.
Q. Okay. And then in your surrebuttal testimony on page 3, lines 43 carrying over to the top of page 4, I think you indicate that the final Keystone integrity management plan -- in the final Keystone integrity management plan TransCanada will need to demonstrate they made a good-faith effort to identify all HCAs.
Is the integrity management plan submitted to PHMSA by the operator?
A. The integrity management plan is subject to review during a jurisdictional audit.
Q. And are there sanctions if the audit determines that the integrity management plan has not been appropriately prepared?
A. During an audit -- yes.
Q. And in your surrebuttal testimony at page 4 you indicate that in your opinion at this time based on the information

you've received, the HCA analysis performed by TransCanada meets the intent of the code for this stage of pipeline design and construction process.
Does anything in your review today cause you to have any concern that TransCanada will not adequately perform the remaining HCA identification process and incorporation into its IMP?
A. No.
MR. WHITE: Thank you.
MR. SMITH: Mr. Rasmussen.
CROSS-EXAMINATION
BY MR. RASMUSSEN:
Q. How has the National Pipeline Mapping System been prepared? I mean, who -- how does that come about?
A. My understanding is that the United States Government collaborated with various agencies such as state agencies, the EPA, in order to develop the information that's included.
Q. And it covers the entire country then?
A. Yes.
Q. And you said it's periodically updated; is that right?
A. Correct.
Q. Have you seen the maps that are on file, the HCA maps that are on file for this proceeding?
A. Yes, I have.
Q. When were those prepared? Do you know?

A. I do not know.
Q. Okay. How often are they updated?
A. PHMSA has stated that they will try to update the National Pipeline Mapping System every five years pending resources.
Q. Which could mean it could be more than five years depending on -- as you say, on resources; is that right?
A. I suppose it could, yes.
Q. You state in your surrebuttal testimony that in addition to using the National Pipeline Mapping System that TransCanada should have a process for incorporating local knowledge.
What are you referring to there? What should they do to -- what sort of local knowledge are you talking about, and what do they do to obtain such knowledge?
A. If there is other information that TransCanada learns regarding HCAs, even if it is not included in the National Pipeline Mapping System, they should include it in their integrity management program.
Q. What sort of protections then are necessary for HCAs with a pipeline such as this? Or is that in your area of expertise or not?
A. What do you mean by protection?
Q. Well, if you identify an HCA or USA, what do you have to do then other than just say it's there, or do you have to do something to protect it?
A. Well, 195.452 gives specific guidelines that a pipe

operator has to follow for HCAs.
Q. Do you know whether TransCanada has attempted to obtain any of this local knowledge that you referred to?
A. I do not know.
Q. I can't remember if this was mentioned, but you do say in your testimony that you have not determined what should or should not be classified as an HCA along this proposed route.
A. That is correct.
Q. And that to do so takes a detailed analysis; is that right?
A. Correct.

MR. RASMUSSEN: Thank you. That's all I have.

MR. SMITH: Mr. Hohn.

CROSS-EXAMINATION

BY MR. HOHN:

Q. Would the HCA map show existing gas and hazardous liquid pipelines?
A. I believe they do, yes.
Q. And to follow up on local knowledge, would local knowledge include the State Geological Reports?
A. It could.
Q. Would local knowledge include input or comments or testimony from local landowners?
A. It could.
Q. Was the National Pipeline System, identification system, when was that established, if you know?

A. I do not know the specific date.
Q. On page 2 of your direct testimony under Integrity Management, that's line 11, After several high-profile pipeline ruptures in the United States, the Government identified the need to implement additional regulations.

Do you know what the high-profile ruptures were that caused that?

A. One that comes to mind is the event in Carlsbad, New Mexico.
Q. Carlsbad, New Mexico. It was a gas line?
A. That is correct.
Q. Did that result in regulations changing for both oil and gas lines?
A. There is a similar integrity management rule for natural gas lines.
Q. And on that same page, line 28, 27, and 28, The pipeline operator's not required to have a written integrity management plan until one year after the date the pipeline begins operation.

Do you know why the one-year wait before this integrity management plan is implemented?

MS. SEMMLER: I'm going to object. It's rule, and we can't change it.

MR. SMITH: I think he's just asking her if she knows why it's like that. If you know. If you don't know, don't

answer.
A. I do not know.
Q. In your opinion as a professional who reviews these projects, would you think it may be helpful to have that in advance of the pipeline going into operation?

MS. SEMMLER: Again, I'll object. Same grounds. We can't change it. It's federal code.

MR. SMITH: Can you rephrase the question, Curt? Or can you tell me -- I didn't catch exactly the way you asked that. I'm sorry.

MR. HOHN: In her opinion as a professional, someone who reviews these kind of projects, would it be helpful to have the written integrity management plan in advance of a project going into operation?

MS. SEMMLER: And it's simply irrelevant. It doesn't matter. We can't change that.

MR. SMITH: Well, I think it is what it is, but if you're asking for her opinion on it, that's fine but realizing the rule is what it is.

MR. HOHN: Yes. I realize.

CHAIRMAN JOHNSON: Mr. Smith, if this question is inappropriate at this time, let me know, but isn't it possible that the Commission might require a completion of a report prior to when federal statute might ask it to be?

MR. SMITH: Well, that's one reason why I wouldn't

mind allowing her to answer. And I'm not quite sure there's a legal issue.

CHAIRMAN JOHNSON: Maybe there's federal preemption. Maybe there's not.

MR. SMITH: A big legal issue. And that's the extent to which we can require things outside of what the Federal Government requires. But to the extent we might be able to do that, and I don't know if I can answer that question right now, I would just as soon know what you think. If you have an opinion --

A. I guess my answer to that is that it's not required by code.
Q. But in your opinion would it be helpful?
A. It's not required by code.
Q. Okay. Thank you. Page 36 and 37 --
A. Line 36 and 37?
Q. I'm sorry. Line 36 and 37, page 2 still. Your answer to that question is, No. TransCanada's not operated a liquid pipeline since the 1990s. This was before the Hazardous Liquid Integrity Management Rule went into effect.

What do you mean by operated liquid pipelines since 1990? Did they operate a liquid pipeline prior to 1990 in your knowledge?

A. My understanding was TransCanada had operated liquid pipelines in the past.

Q. I thought that I heard testimony that they had helped build but had not operated, and that's why I'm asking the question.

Do you have information that would --

MR. WHITE: I'm going to object. I think that testimony misstates the record.

MR. SMITH: Sustained anyway. Do you know? If you don't -- do you know the answer to that question?

THE WITNESS: I guess I'm not 100 percent positive.

MR. SMITH: Okay. I think there are many better witnesses here to answer that.

MR. HOHN: All right.

Q. Moving along, on the bottom of page 3 of your direct testimony there's -- on line 41 through 46, Have any of the pipelines owned or operated by the Applicant received a notice of probably violation? And your answer is, No. TransCanada has received a Notice of Amendment.

What is a Notice of Amendment?

A. In general a Notice of Amendment is a -- well, I guess as stated earlier in my written testimony, a Notice of Amendment is a -- I guess a notice identifying shortcomings in an operator's integrity management plan.

Q. Okay. Thank you. On page 5 of your direct testimony, line 23 through 27 refers to community water systems and nontransient, noncommunity water systems.

They are covered under HCA in the federal guidelines; is

that right?

A. Can you repeat the question, please.

Q. You list examples of drinking water resources included but are not limited to water intake for a community water system or a nontransient, noncommunity water system that obtains its water supply primarily from a surface water source.

Examples of drinking water resources included but are not limited to. Is drinking water in general, in your opinion, considered an HCA?

A. The Federal Government gives a specific definition for an HCA in 195.450.

Q. And is this statement saying that in general water systems are -- or does the regulation state in your opinion that water in water systems are covered under HCA?

A. There is a specific definition given in 195.450.

Q. That same page, line 33 through 37, TransCanada has identified 40.7 miles of pipe that has a possibility of affecting an HCA in the event of a pipeline release.

Did you confirm that in the review of the documents?

A. I obtained that information from documents.

Q. From the documents filed?

A. Correct.

Q. What were those -- which were those documents that you looked at to confirm the 40.7 miles?

A. I do not recall specifically which document it was.

Q. That's a pretty specific number, 40.7. Was it identified on a line drawing showing mile posts?

A. Do not specifically remember which document it was.

Q. The same page, line 43, TransCanada's identified nine HCA locations. Did you see documents that you felt could confirm that there were nine locations?

A. Yes, I did.

Q. Was that -- did you review the HCA map that's on file marked confidential?

A. I reviewed some HCA maps, yes.

Q. Do you recall whether they were confidential? Did you have to sign something to look at the documents?

MS. SEMMLER: I object. Staff signed, and as a consultant she, of course, fell underneath that agreement. And I find it irrelevant.

MR. SMITH: Yeah. Staff is covered in any case by confidentiality commitments here.

MR. HOHN: Yes. I understand. I was just trying to verify if she had seen the map.

MR. SMITH: Right. I think she answered that.

MR. HOHN: Okay.

Q. Page 6 of your direct testimony, from line 11 to 30. Line 16, TransCanada screened HCAs to determine which HCAs were within reasonable proximity to the centerline. And then later it refers to within one mile.

Is it normal on a line of this -- or common I guess on a pipeline of this type from your experience that the HCA be 1 mile from centerline, or can it be broader than that?

A. Different pipeline operators can use different criteria.

Q. There's nothing in the regulations that would prevent them from looking at a wider area?

A. The regulations are not specific.

Q. Okay. Page 7 of your direct testimony, lines 21 through 31. On line 29 you state, Additionally the presence of a thick clay layer between the pipeline and the aquifer would prevent crude oil from reaching the aquifer.

Do you see that part of it?

A. Yes, I do.

Q. Were you present when Dr. Perry Rahn and Dr. Arden Davis testified on the geology?

A. No, I was not.

Q. Were you monitoring testimony by computer --

A. I listened to some testimony over the Internet.

Q. Were you able or did you have time to review the testimony submitted by Dr. Rahn and Dr. Davis?

A. The written testimony?

Q. Yes.

A. I believe I did.

Q. Do you recall their testimony that part of the pipeline route is in a shallow aquifer area?

A. I do not recall that.
Q. Okay. On page 8 of your testimony, direct testimony, 22 through 31, the second line of the answer, line 27, Each side of a reservoir containing water for human consumption.
What is the meaning of reservoir? Is it an open body or is it a water tank or what's your intent there by that reference?
A. I believe that term is used in Part 195.
Q. And from your knowledge and review of 195, are they referring to a lake, an open body of water, or a storage tank reservoir?
A. I would need to go back to 195 and review the definition.
Q. Okay. Thank you.
MR. HOHN: That's all. Thank you.
MR. SMITH: Commissioner questions of Ms. Hudson? Commissioner Kolbeck.
COMMISSIONER KOLBECK: In your opinion do you think that an integrity management plan can be drafted with correct information prior to the one year after operation?
THE WITNESS: I'm not sure that all of the information could be included.
COMMISSIONER KOLBECK: Okay. Thank you.
MR. SMITH: Other Commissioner questions?
CHAIRMAN JOHNSON: Hi, Ms. Hudson.
THE WITNESS: Hi.
CHAIRMAN JOHNSON: Mr. Hohn asked some questions with

regard to distance from the centerline of a pipeline -- HCAs within 1 mile, as TransCanada has done their analysis.
Is that sufficient? Would you have a greater level of comfort if that distance was greater than 1 mile?
THE WITNESS: It really depends on the geology and the specific conditions around the pipeline.
CHAIRMAN JOHNSON: Given the conditions in South Dakota as you know them to be, would you recommend greater than 1 mile distance for evaluation purposes?
THE WITNESS: I guess I would defer that question not being a practicing geologist.
CHAIRMAN JOHNSON: Is there anybody else, do you know, on Staff's witness list that might be better able to answer that question?
THE WITNESS: I believe that Bryan Murdock would be able to address that question.
CHAIRMAN JOHNSON: And Ms. Semmler can certainly let me know later if that's not where the question should go.
I think that's all I've got, Mr. Smith. Thanks.
MR. SMITH: Thank you. Any redirect by Staff?
REDIRECT EXAMINATION
BY MS. SEMMLER:
Q. You suggested that some local input, local knowledge, is important in identifying HCAs. Would you consider data requests that TransCanada made to the South Dakota DENR for source water

protection areas an effort to obtain such local knowledge?
A. Yes, I would.
MS. SEMMLER: Thank you.
MR. SMITH: Is that all your questions? Any recross?
MR. WHITE: Just a couple.
RECROSS-EXAMINATION
BY MR. WHITE:
Q. Are you aware of any conditions in the special permit that might relate to the reporting of newly identified HCAs through the PHMSA?
A. I would have to review the permit again.
Q. Okay. And is it your understanding that Keystone will perform a fate and transport analysis as part of its emergency response planning?
A. That is my understanding.
Q. And will that help to ensure that any HCAs that might be impacted by a spill are properly identified?
A. Yes.
MR. WHITE: Thank you.
MR. SMITH: Mr. Rasmussen, any follow-up?
RECROSS-EXAMINATION
BY MR. RASMUSSEN:
Q. On this issue of the local knowledge, are there any regulations or standards as to what you're supposed to do to gather the local knowledge?

A. There are no specific requirements given in code.
Q. And then finally this question of the proximity criteria. You state on page 6 of your direct testimony that from the information available to me I have not seen technical justification for these proximity criteria.
What sort of technical justification are you talking about there?
A. During a jurisdictional audit PHMSA would expect a pipeline operator to have documentation discussing any assumptions that they have made in the development of their integrity management program.
Q. Is that something that would typically be prepared at this stage or some later time?
A. I would think it would be developed at a later time.
MR. RASMUSSEN: Okay. Thank you. That's all I have.
MR. SMITH: Any last questions?
MR. HOHN: No questions.
MR. SMITH: Thank you, Ms. Hudson. I think you may step down.
(The witness is excused)
CHAIRMAN JOHNSON: Mr. Smith, I might just note, call it to your attention, there was one of the Interveners in the audience made some gestures that I think was meant to call into question the integrity of that witness.
And I just think all Interveners have an opportunity

to cross-examine the witness, if they question the professionalism or credentials of a witness, and I think doing it in the audience is inappropriate and disrespectful.

MR. SMITH: Thank you. Is this a good time to call it a day? I'm seeing at least one Commissioner nod yes. And unless two -- the other two say no, I'm going to say --

CHAIRMAN JOHNSON: I would, you know, defer to Cheri and the parties, and if people feel as though to complete our work we have to push on, by all means push on. If this is an appropriate breaking time, you're not going to need to convince me.

MS. SEMMLER: I think it's an appropriate breaking time. Staff will jump into its Bay West witnesses, which is an entirely different subject matter.

MR. SMITH: Okay. Sounds like a logical point to take a break anyway. Any thoughts on your end? You probably want to get going anyway, Mr. Rasmussen.

MR. RASMUSSEN: Well, I'm flying out of here tomorrow morning so it really doesn't matter.

MR. SMITH: Okay. Irrelevant. How about the Applicant?

MR. WHITE: I think we'd agree it's probably a good time for a break, given the break in the train of witnesses.

MR. SMITH: Okay. In that case, we will stand in

recess until 8:30 a.m. tomorrow morning. Thank you.

(The proceedings are in recess at 5:30 p.m.)

STATE OF SOUTH DAKOTA)
:SS CERTIFICATE
COUNTY OF HUGHES)

I, CHERI MCCOMSEY WITTLER, a Registered Professional Reporter, Certified Realtime Reporter, and Notary Public in and for the State of South Dakota:

DO HEREBY CERTIFY that as the duly-appointed shorthand reporter, I took in shorthand the proceedings had in the above-entitled matter on the 10th day of December 2007, and that the attached is a true and correct transcription of the proceedings so taken.

Dated at Pierre, South Dakota this 2nd day of January 2008.

Cheri McComsey Wittler,
Notary Public
Registered Professional Reporter
Certified Realtime Reporter

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