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Deposition of William Armstrong

FILE

ORIGINAL OF TRANSCRIPT

BEFORE THE PUBLIC UTILITIES COMMISSION OF OHIO

IN THE MATTER OF THE
APPLICATION OF THE
EAST OHIO GAS COMPANY
D/B/A DOMINION EAST OHIO
FOR AUTHORITY TO INCREASE
RATES FOR ITS GAS
DISTRIBUTION SERVICE
Case No. 07-829-GA-AIR

DEPOSITION OF WILLIAM ARMSTRONG

Taken on Tuesday, June 17, 2008 at 8:33 a.m.

At the law offices of:
Jones Day
North Point Tower
901 Lakeside Avenue
Cleveland, Ohio 44114

Before Nancy Geiger, a Registered Professional Reporter
and Notary Public in and for the State of Ohio

APPEARANCES:

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ALSO PRESENT:

Trevor Roycroft,

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- - - -

WILLIAM ARMSTRONG, of lawful age, called for examination, being by me first duly sworn, as hereinafter certified, deposed and said as follows:

EXAMINATION OF WILLIAM ARMSTRONG

BY-MR.SAUER:

Q. Good morning, Mr. Armstrong. Again, my name is Larry Sauer and I'm with the Office of the Ohio Consumers' Counsel.

Have you had your deposition taken before?

A. Yes.

Q. Then you're generally familiar with how these things go. As you can see, there's a court reporter taking down the questions I ask and the answers that you give. Try to -- this is a little more difficult because we're not in the same room together, so we're trying to do this over the telephone which complicates things a little bit. But I'll try to not talk over you and let you answer your questions fully.

And if you could do so with yes or no answers instead of um-hums on uh-huhs because those are difficult for the court reporter to transcribe and for us to read later when we're going through the deposition.

If I ask you a question and you don't understand it, just ask me to clarify it. If you answer the question, I'll assume that you understood the question as it was asked. If your counsel objects to a question, you're still required to answer the question unless he specifically instructs you not to. If you need to take a break, just let me know and we'll take a break. I just ask that if there's a question pending that you answer the question and then we'll break. Do you have any questions?

A. No.

Q. Okay. Then we'll get started. Are you with Dominion East Ohio?

A. No.

Q. Who are you with, sir?

A. I am with Dominion Virginia Power.

Q. Dominion Virginia Power. And are you familiar with the Dominion East Ohio rate case that's pending right now, it's Case Number 07-829-GA-AIR?

A. Could you be more specific?

Q. Have you filed any testimony in that rate case?

A. No.

Q. Are you familiar with the company's requests for recovery of costs associated with their advanced meter reading program?

A. Could you be more specific please?

Q. Are you aware that the company is asking for cost recovery of costs associated with deployment of advanced meter reading devices in their current rate case?

A. Yes.

Q. Can you explain what the advanced meter reading deployment

program is?

A. Can you be more specific?

Q. Instead of advanced meter reading, I'm just going to use the term AMR, is that agreeable with you, sir?

A. Yes. But could you repeat the question?

Q. Yes. I will do that.

MR. KUTIK: When you say advanced, let me just break in here, when you say advanced, do you mean automated?

A. Automated meter reading, yes.

Q. And what are the automated meter reading devices, sir?

A. Can you rephrase your question?

Q. What is your understanding of what an AMR device is?

A. An AMR device is a device that can be attached in this case to a gas meter that would record the consumption on that meter and through various means relay that information to a collecting unit.

Q. And Dominion East Ohio is proposing to install these AMR devices on certain meters in their service territory, are they not?

A. Yes.

Q. And can you explain the extent to which the DEO is proposing to install these AMR devices in their service territory?

A. We are proposing to install a system-wide deployment of AMR devices.

Q. And over what period of time have you been involved with DEO's AMR program?

A. Since January of 2006.

Q. Were you involved in a similar program at Dominion Virginia?

A. Yes.

Q. And when was that program rolled out?

A. That program was rolled out beginning January of 2003.

Q. And was that for -- did that program entail installing AMR devices on gas meters in Dominion Virginia

territory?

A. No.

Q. Did that program just involve installing AMR devices on electric meters in Dominion Virginia territory?

A. Yes.

Q. And was that a full deployment in Dominion Virginia territory as well?

A. No.

Q. What was the deployment in Dominion Virginia?

A. The deployment in Dominion Virginia was on all but 150,000 electric meters.

Q. How many AMR devices were installed in Virginia Dominion territory?

A. Approximately 2.2 million.

Q. What was it about the 150,000 that they didn't install AMR devices that left that group out of the deployment?

A. The 150,000 meters not included in that deployment are high-end

electric meters typically for our larger customers. The AMR deployment technology utilized for the 2 -- approximately 2.2 million customers did not apply, in other words, was not technically feasible for those 150,000 customers due to the nature of the electric meter.

Q. Did Dominion Virginia install the same AMR devices on all the 2.2 million customers that were included in the deployment?

MR. KUTIK: You mean the same type?

Q. The same type, yes.

A. No.

Q. What were the different types of AMR devices that were installed in Dominion Virginia?

A. It's basically the same device. There were some devices that had a higher power frequency output to transmit the information, so there were -- I cannot remember the number, but there were a number of higher powered

devices installed at specific locations.

Q. Did the AMR devices that were installed in Dominion Virginia have the same capability as the AMR devices that are being proposed by Dominion East Ohio?

MR. KUTIK: Objection.

A. Can you read that question back, please.

(Record read.)

A. No.

Q. Can you explain what some of the differences are between the devices that were actually installed in Dominion Virginia Power in comparison to the devices that DEO is proposing to install in this case?

A. Yes.

Q. Please do so.

A. The main difference, the devices installed at Dominion Virginia Power on electric meters were, excuse me, pardon me -- let me take a drink of water -- the devices installed on Dominion Virginia Power are powered by

the company side of the power going to a customer's premise. The devices deployed and planned to be deployed for Dominion East Ohio are powered by battery.

Q. Okay. Do they have the same capabilities, for instance, Dominion Virginia Power, is there just one-way communication ability or is there two way, what would the devices do?

MR. KUTIK: Objection. Compound.

A. Could you rephrase the question please?

Q. Sure. The AMR devices installed in Dominion Virginia Power do they have two-way communication capabilities?

A. No.

Q. Do the devices proposed to be installed in Dominion East Ohio territory, will those have two-way communication capabilities?

A. No.

Q. So other than the methods by which the devices are powered, do they

have essentially the same capabilities?

A. Yes.

Q. Are they similarly priced?

A. No.

MR. KUTIK: Objection.

Q. Mr. Armstrong, what's your position with Dominion Virginia Power?

A. Manager of metering services.

Q. And other than your involvement with the AMR in Ohio and in Virginia, is there anywhere else on the Dominion system where you've been involved in the installation of AMR devices?

A. No.

Q. And I believe you said in Dominion Virginia territory the roll out for the AMR devices began in January of '03, is that correct?

A. Yes.

Q. And how long did that deployment take in Virginia?

A. Three and a half years.

Q. I believe you said your involvement with the Ohio, Dominion East

Ohio AMR deployment program began in January of '06, is that correct?

A. Yes.

Q. And have you been involved on a consistent basis throughout the development of the AMR program in Ohio?

MR. KUTIK: Objection.

A. Could you rephrase the question?

Q. What has your involvement been with the AMR program since January of '06?

A. My involvement with the AMR program consisted of participating on a team to select the technology, participating on a team to develop the business case and participation on a team to plan the deployment.

Q. And would your involvement with the deployment in Ohio, in other words, the participation of the team to select the technology, similar to what you did in Virginia?

A. Could you clarify that question please?

Q. When DEO, when Virginia Dominion deployed the AMR devices in their service territory, were you on a team to select the technology?

A. Yes.

Q. Were you also on a team to develop the business case?

A. Yes.

Q. And were you also on a plan -- on a team to plan the deployment in Virginia?

A. Yes.

Q. Were you involved in Virginia in deployment -- were there any other areas of involvement in Virginia that you had with the deployment of AMR devices that you didn't have in Ohio?

A. Can you please repeat that?

MR. SAUER: Can I have the question reread please?

(Record read.)

A. No.

Q. Mr. Armstrong, has DEO used an outside consultant to help with the analysis and program deployment in Ohio?

A. No.

Q. Did Dominion Virginia use a consultant to help with their analysis or program deployment?

A. Yes.

Q. Who was the consultant that Virginia Dominion used?

A. Accenture.

Q. What was the consultant's role in Virginia?

A. The consultant's role in Virginia was to assist with the business case and assist with the initial deployment plan.

Q. What was the reason for not bringing a consultant to assist with the deployment in Ohio?

A. Could you be more specific?

Q. Well, let me ask it this way. Did the team that you were participating in in the Virginia deployment, was it a team recommendation to bring a consultant in to assist with the deployment?

A. No.

Q. Was the consultant just part of the team in Virginia from the outset?

A. Can you rephrase that?

Q. When the Virginia AMR deployment began, were you on the team from the very beginning?

A. Yes.

Q. And was there a consultant on that team from the very beginning?

A. No.

Q. So in the Virginia deployment, how did it come to be that a consultant was retained to assist with that deployment?

A. Senior management determined that a consultant would add speed and value to the deployment.

Q. Were you on the DEO AMR deployment team from the very beginning?

A. Yes.

Q. And was there discussion to -- whether or not a consultant was needed for the Ohio deployment?

A. No.

Q. So based on the lessons

learned from the Virginia deployment, was there a determination that a consultant would not add need or value for the Ohio deployment?

MR. KUTIK: Objection.

A. Can you rephrase the question?

Q. You stated that management in Virginia decided that a consultant would add need or value I believe you said?

MR. KUTIK: He actually said speed.

Q. Speed, I'm sorry. Speed and value to the Virginia deployment. Was the determination made in Ohio that a consultant would not add speed or value to that deployment?

A. No.

Q. Mr. Armstrong, which -- of the devices that were installed in Virginia, who is the manufacturer of the AMRs?

A. The manufacturer of the devices in Virginia was a company called Itron.

MR. KUTIK: Spell that for the court reporter.

A. I T R O N, as in Nancy.

Q. And Itron is the manufacturer of AMR devices that DEO is considering for Ohio deployment as well?

A. Yes.

Q. I'm sorry, Mr. Armstrong, I didn't hear an answer to the last question.

MR. KUTIK: He answered.

Q. Did you hear the question?

MR. KUTIK: He answered yes.

Q. Okay. Is DEO considering any other AMR devices for deployment in Ohio other than the Itron?

MR. KUTIK: Objection.

A. No.

Q. Was that no?

A. That was no.

Q. Mr. Armstrong, can you explain how DEO or, yes, DEO utilizes a business case to analyze an investment decision such as the AMR deployment?

MR. KUTIK: Can you read the

question please.

(Record read.)

A. Can you be more specific please?

Q. Sure. You said you participated in a team to develop the business case, both in Virginia and Ohio, is that correct?

A. Yes.

Q. And what was your involvement in the development of the -- well, let me ask you this. Were the business cases essentially the same between those two deployments?

MR. KUTIK: Objection.

A. Can you rephrase the question or be more specific?

Q. How did you develop the business case for the Ohio deployment?

A. Could you please be more specific?

Q. I'm sorry, sir, could you repeat that?

A. Could you please be more specific?

Q. How did you develop the business case for the AMR deployment in Ohio?

A. Could you read back that question compared to the previous question?

MR. KUTIK: It was the same question, but go ahead.

(Record read.)

A. Could you be more specific please?

Q. Mr. Armstrong, were you involved in the development of the business case for the Ohio deployment?

A. Yes.

Q. What was your involvement in the development of that business case?

A. My involvement on the development of the business case was on the team to look at technology, on a team to look at potential or projected costs and savings, and on a team to look at projected deployment.

Q. So your role in this team was -- part of your role was to develop

the business case you just said, correct?

A. Yes.

Q. Can you tell me what is a business case?

A. A business case is an analysis of the costs, deployment timeline associated with that, those costs and savings associated with the proposed technology over a timeline with various financial measures applied.

Q. Mr. Armstrong, do you have a background in finance?

A. Could you be more specific?

Q. Do you have a degree in finance?

A. No.

Q. Do you have a degree in business?

A. Yes.

Q. And what is that degree, sir?

A. Master of Business Administration.

Q. So you've taken finance

classes?

A. Yes.

Q. Can you tell me under what circumstances does Dominion utilize, yes, utilize business case analysis?

A. Could you be more specific?

Q. Yes. Is there like a threshold investment that requires the company to undertake a business case analysis?

A. I do not know a specific threshold.

Q. You stated that on the team you participated in Virginia you did a business case there, correct?

A. Yes.

Q. And was the investment in Virginia equal to the investment that DEO is proposing for AMR deployment in Ohio?

A. Can you read that question back to me please?

(Record read.)

A. No.

Q. Was it greater than?

A. Can you be more specific please?

Q. How much did Dominion Virginia spend on their AMR deployment -- how much did Dominion Virginia spend on their AMR deployment in Virginia?

MR. KUTIK: Is that a confidential piece of information?

A. I believe that's a confidential piece of information.

MR. KUTIK: All right. So I'll object and instruct you not to answer.

Q. The business case that your team prepared for the DEO deployment, was that done internally?

A. Can you be more specific?

Q. Who prepared the business case analysis for the deployment in Ohio?

A. Members of the DEO AMR project team.

MR. SAUER: Mr. Kutik, I have sent some documents last evening and then this morning, I sent an application. Did you receive those?

MR. KUTIK: I did.

MR. SAUER: I wonder if we might have marked as Deposition Exhibit 1 the application in Case Number 06-1453-GA-UNC, do you have that document?

MR. KUTIK: Yes. While we're doing that, the witness needs to take a personal comfort break so we'll break for a minute or two and we'll get right back to you while we're marking the document.

MR. SAUER: Great.

(Recess taken.)

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(Thereupon, Deposition Exhibit-1 was marked for purposes of identification.)

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Q. You've marked as Deposition Exhibit Number 1 the nine page application, do you have that in front of you, Mr. Armstrong?

A. Yes.

Q. Okay. Have you seen this

document before, sir?

A. Yes.

Q. Okay. Did you participate in its preparation in any way?

A. No.

Q. Okay. Could you turn to page 2 of the document please, sir, specifically a provision that's marked as 4A, do you see that, sir, and it states, the AMR provides the most cost-effective way for DEO to comply with the MGSS on a long-term basis, do you see that?

A. Yes.

Q. Okay. Can you explain what it means by being more cost effective?

MR. KUTIK: I'll object as, A, beyond the scope, and B, because this witness, as the witness stated, he has not participated in the preparation of this document.

Q. You can answer if you know, sir.

A. I don't know.

Q. In the development of the

business case was the AMR deployment being cost effective, was that a criteria in the business case?

MR. KUTIK: Objection.

A. Can you rephrase that question?

Q. In the development of the AMR deployment in Ohio, was whether or not the deployment was cost effective, was that a factor in the business case decision?

MR. KUTIK: Objection.

A. Could you please be more specific?

Q. In the AMR deployment business case in Ohio, was the cost effectiveness of that deployment a consideration?

A. Yes.

Q. And what did cost effective mean to you?

A. Can you please rephrase that question?

Q. Yes. I'm just trying to understand from your perspective as a

member of the team who was evaluating the AMR deployment in Ohio, what did it mean to you -- what does cost effective mean to you?

A. Cost effective means that the deployment meets various financial measures.

Q. And what are those various financial measures that it must meet?

A. Net present value, internal rate of return, and payback.

Q. When you say net present value, can you explain what that term means?

A. Can you be more specific?

Q. Well, when you were explaining what cost effective considerations there were, you gave me net present value, internal rate of return, and payback, were there any others?

A. No.

Q. And how does net present value correlate with cost effectiveness?

A. Net present value is an

analysis where you look at cost versus potential savings over a time period and you -- because implicitly implies money and savings over time, you discount through the net present value analysis to the current state and it provides a dollar figure that in its own right can be used to compare investment alternatives.

Q. So you're saying the net present value analysis allows you to look at various investment options or scenarios and make a decision as to which is most cost effective?

A. Yes.

Q. How does the internal rate of return correlate to cost effectiveness?

A. It is a different financial measure that also can be used to compare investment alternatives.

Q. So the net present value and internal rate of return are tools an entity can use to determine between different investment options the most

cost effective option available, is that fair?

A. Yes.

Q. And what about the payback analysis you spoke to, how does that correlate to cost effectiveness?

A. Payback is a third financial look that can be used to compare competing investments.

Q. If I understood what you told me regarding net present value, it was a method of analyzing the costs and benefits and discounting them to -- was it present value, is that what you told me?

MR. KUTIK: I think he said current state?

Q. The current state?

A. Current state meaning the value of the investment at the moment, today or whenever the analysis is being conducted.

Q. And is the internal rate of return, is that a similar type of analysis of costs and benefits?

MR. KUTIK: Objection.

A. Could you rephrase the question please?

Q. Yes. I'm trying to understand what -- sort of what the inputs are to the internal rate of return calculation.

A. There are various inputs.

Q. Cost being one of the inputs?

A. Yes.

Q. And how about the benefits to be derived by the investment, is that part of the analysis?

A. Yes.

Q. Is there any other consideration that goes into the internal rate of return analysis?

A. No.

Q. And the payback analysis, did you say was you take the investment and -- so you're looking primarily at the cost in that calculation?

MR. KUTIK: Objection.

A. Could you rephrase the

question please?

Q. Yes. In a payback analysis, are there -- is cost one of the considerations in the calculation?

A. Yes.

Q. And what are the other considerations that you look at in that analysis?

A. The annual savings.

Q. And in the AMR deployment in Ohio, what were the different savings that were being considered with that deployment?

A. The savings that were considered for that deployment were operational savings due to the deployment of the AMR technology.

Q. And operational savings would include meter reading savings?

A. Yes.

Q. And associated costs with meter reading, such as maybe automotive or fuel or those types of things?

A. Yes.

Q. Were there other

considerations regarding savings?

A. Yes.

Q. And what other savings considerations were there?

A. There were other savings related to the work of field metering services.

Q. What work in field metering services could result in savings by the AMR deployment in Ohio?

A. One specifically is a type of work called a re-read order. A re-read order is a customer request for a meter reading that is outside of the normal meter reading cycle.

Q. So you're suggesting that by the AMR technology, the meter readings are more accurate and you have less customer requests for re-reads?

A. That's one benefit.

Q. Are there any other savings items?

A. Yes.

Q. What would those be?

A. On the re-read order, the

current state is that the field metering service employee needs to drive to the premise, gain access to the meter, read the meter and to complete that work assignment. In the AMR world, that field service rep would just need to drive by the premise.

Q. So the savings are associated with the labor involved in accomplishing that re-read, is that correct?

A. Yes.

Q. Any other savings that your team identified and utilized in the payback analysis?

A. Yes.

Q. What would those be?

A. Savings associated with the Ohio Minimum Gas Service Standards.

Q. And what were the Ohio Minimum Gas Service Standards that were resulting in cost to the company?

A. One in particular would be the requirement to obtain an actual eyeball meter reading on every meter at least one time per year.

Q. And the deployment of the AMR devices would alleviate the cost associated with obtaining that eyeball meter reading, is that true?

A. The Ohio Minimum Service Standard allowed for a meter reading obtained by an AMR device to count as fulfilling that annual meter reading requirement.

Q. And were there any other savings items that your team identified associated with AMR deployment?

A. Yes.

Q. And what would have those savings been?

A. With the deployment of AMR, we would expect savings for the call center.

Q. And how would the call center realize benefits from the AMR deployment in terms of savings?

A. The call center would realize overall benefit from the deployment of AMR due to the fact that in the AMR state, so to speak, every customer will

receive a meter reading every month, it will be an accurate meter reading, therefore, the number of estimated meters would drop significantly. Inaccurate meter readings and consecutively estimated meters are two sources of calls to our call center. Therefore, by being able to provide an accurate meter reading, a monthly meter reading, and therefore, consecutive estimate reduction, should translate into reduced calls to the call center.

Q. Any other identified areas where savings could be achieved by the AMR deployment in Ohio?

A. Yes.

Q. What would those be?

A. In the current state of what I'll term manual meter reading defined as people meter readers going out daily on meter reading routes to obtain customer meter readings, particularly in the environment of Northern Ohio in the winter, we have experienced slips, trips and falls so to speak and on occasion

meter readers who have been placed in certainly uncomfortable situations, we would dramatically reduce these safety items with deployment of an AMR system.

Q. Any other areas where your team identified savings that would be associated with the AMR deployment in Ohio?

A. No.

Q. And were these various savings items that you've just listed, were they consistent with the savings that Dominion Virginia realized when they did their deployment of AMR?

MR. KUTIK: Objection.

Q. For instance, in Virginia did Dominion Virginia recognize savings in the operational areas that you were discussing, such as meter reading?

MR. KUTIK: Objection.

A. Could you rephrase the question?

Q. Yes. In Virginia, in Dominion Virginia once the deployment was done in 2003 and since 2003, has

the company recognized savings such as the operational savings that you spoke to, the savings in the meter reading department?

A. Yes.

Q. And so just field metering services?

A. Yes.

Q. Call center savings, did they achieve savings in that area?

A. We believe so, but it's very, very hard to measure specifically.

Q. And in Virginia were there fewer Workers' Comp or lost time accidents?

A. Yes.

Q. When you were doing your business case analysis in Ohio, were you able to quantify what the expected savings would be as a result of the AMR deployment in Ohio?

A. Could you be more specific please?

Q. Yes. In Ohio as part of the team analyzing the deployment of AMR

devices, did you quantify the savings to be expected associated with reduction in meter reading costs?

A. Yes.

Q. And do you recall what those savings were anticipated to be?

A. No.

Q. Were the savings that you quantified used in developing the NPV?

A. Yes.

Q. The IRR?

A. Yes.

Q. And payback?

A. Yes.

Q. And you said that you anticipated savings, I think it was field meter services regarding the re-read issue, were those savings included in your analysis in the NPV?

A. Yes.

Q. In the IRR?

A. Yes.

Q. And the payback?

A. Yes.

Q. And do you recall, if you

recall, can you quantify what those savings were?

A. No.

Q. Okay. You said there were savings, anticipated savings from the Ohio MGSS, do you recall what amount of savings were anticipated there?

A. Yes.

Q. How much did you anticipate to save in the Ohio MGSS?

MR. KUTIK: I'll object. Go ahead.

Q. You can answer if you know, sir.

A. We had in the business case a range of in the mid $9 million annually.

Q. And that savings item was included in your NPV analysis?

A. Yes.

Q. And the IRR?

A. Yes.

Q. And payback?

A. Yes.

Q. Was that the area that you

had anticipated the greatest amount of savings?

MR. KUTIK: Objection.

A. Could you rephrase the question?

Q. Yes. Looking at the different items that you've listed, the operational savings or the field meter services savings or the savings from the Ohio MGSS or the call center savings or the employee incident savings, you've listed several of them, I'm trying to get a sense as whether your team anticipated savings from -- regarding the Ohio MGSS would be the greatest of the savings to be anticipated?

MR. KUTIK: I'll object because it assumes that that's a separate item from the other things.

If you can answer the question, go ahead.

A. Can you read the question back to me please?

(Record read.)

MR. KUTIK: So the question is

would the savings, anticipated savings from the Ohio Minimum Gas Service Standards be greater than any of the other items, is that your question? Counsel?

MR. SAUER: Yes. That was the question.

MR. KUTIK: Note my objection.

A. The way I would answer this question is going into the business case for AMR, I don't believe we anticipated any specific savings, you know, one versus another or what the magnitude would be. It was only after the analysis then did it reveal itself.

Q. And with the hindsight that you have based on the information that came to light through the business case analysis, I was just trying to get a sense as to where the different items that you listed, where the MGSS fell in terms of anticipated savings.

MR. KUTIK: Well, do you want to ask him a question?

Q. You listed several items

regarding the savings, sir, we just kind of ticked them off, operational savings, savings from Ohio MGSS. Let's go on, call center, you identified there were savings, did you include those savings in your NPV analysis?

A. No.

Q. And why not?

A. We felt they were too hard to quantify exactly.

Q. And what is it about those savings that made them hard to quantify?

A. We don't have a specific accounting mechanism per se to track savings related to AMR in an exact fashion or even in an inexact fashion.

Q. Does the call center currently track how many calls they receive?

A. Yes.

Q. Do they track the nature of the calls they receive?

A. I don't know.

Q. So the fact that meters are being read more accurately, it's only

speculation on your part that the call level would go down?

A. Yes.

Q. Are you not aware or are you aware, let me ask it that way. Are you aware if the call center maintains statistics on calls, the nature of calls that they receive?

A. I am not aware.

Q. Are you aware that in discovery the company has supplied data regarding call center savings?

MR. KUTIK: Objection. Mischaracterizes the documents.

You can answer if you know.

A. Can you read back the question please?

(Record read.)

A. Yes.

Q. And do you recall what the items identified as savings were?

A. Those were estimated savings for the call center.

Q. And do you recall specifically what type of savings were

anticipated or estimated?

A. Yes.

Q. And can you tell me what those were?

A. The bottom line saving that I recall was a number of full-time equivalents that equal ten.

Q. Did you say, I'm sorry, did you say a full-time equivalent equaling ten?

A. The number that I recall was a savings of ten full-time equivalent call center agents.

Q. Were these savings identified over a course of time?

MR. KUTIK: Objection.

A. Could you rephrase the question please?

Q. Yes. Did the estimated savings, were those achieved over a number of years?

A. I don't know.

Q. Were the estimated savings dependent on the investment decision Dominion made regarding the AMR

deployment?

A. Could you please be more specific?

Q. Yes. Were the savings estimate that you are speaking to, for example, the full-time equivalent of ten, was that dependent on whether Dominion -- was that based upon Dominion doing the full AMR deployment?

A. Yes.

Q. And was Dominion considering other deployment scenarios?

A. Can you be more specific please?

Q. Besides deployment of AMR devices on every meter, was Dominion considering other deployment scenarios?

A. Yes.

Q. And what were some of those scenarios?

A. One scenario -- well, the full deployment scenario was one. A second scenario involved deployment of AMR devices on inside meters plus on meter reading routes that had 50 percent

outside meters. And a third scenario was deployment with a different technology than Itron, called a fixed network.

MR. KUTIK: Let's go off the record for a second.

(Discussion had off the record.)

MR. SAUER: Okay. I was wondering if I might have marked and this may be a good time to go back off the record.

MR. KUTIK: Okay.

(Discussion had off the record.)

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(Thereupon, Deposition Exhibit-2 was marked for purposes of identification.)

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MR. KUTIK: We have marked as Exhibit 2 a document that starts Dominion, It All Starts Here, and ends on page 18, a document that's labeled Call Center Impact. We should note that this document has been produced under the protective agreement in this case.

My understanding is Staff has agreed to abide by the protective agreement that was reached with Blueridge and any testimony with respect to this document will be deemed confidential pursuant to those agreements.

MR. REILLY: Hello. Hello.

MR. KUTIK: Yes.

MR. REILLY: Hello. This is Steve Reilly from Staff, can you hear me?

MR. KUTIK: Yes.

MR. SAUER: Yes.

MR. REILLY: Okay. Just a couple of corrections before we go much further here. Anne Hammerstein and I were the ones originally on the call, but since it's been going on, Steve Puicin and Barbara Bosard apparently have come in the room.

Another thing more importantly, on the confidential portion of this, what Staff has always told everybody is that we are bound by statute, those statutes I think everybody on this call

knows and those are the things that apply with regard to our confidentiality. We haven't seen nor have we agreed to any private documents regarding confidentiality. Our -- that which binds the Staff is laid out by statute and is fairly severe if it is breached. That has been acceptable to everybody all along in this case as far as I know and has been acceptable to everybody in every other rate case that I'm aware of or that other people have told me about.

Is there some misunderstanding here?

MR. KUTIK: My understanding is that you advised our team that you would abide by the provisions of the confidentiality agreement with Blueridge and maintain our documents confidentially --

MR. REILLY: You have been given --

MR. KUTIK: Hold on a second.

MR. REILLY: You have been --

MR. KUTIK: Let me finish.

MR. REILLY: I never said that.

MR. KUTIK: Let me finish. Subject to your statutory obligations.

MR. REILLY: We have said that we would --

MR. KUTIK: All right.

MR. REILLY: -- be subject to statutory obligations. Don't let there be any confusion about that.

MR. KUTIK: Let's make it easy. We will not let this witness in this deposition testify about confidential information. If the Staff has any qualms about keeping anything confidential, go ahead.

MR. REILLY: We have agreed to abide by our procedures with regard to confidential information and that included -- did you mark it confidential, Mr. Whitt, Mr. Murphy, Mr. Campbell are well aware of what those procedures are.

MR. KUTIK: I know, I am aware and I thought I stated them correctly.

Apparently you have a problem with that.

MR. REILLY: I have never seen your confidential agreement nor I've never agreed to it. That's right, I do have a problem with that part of it. That's in addition. What we have said all along to be very clear with everybody, is that the Staff is bound statutorily. Those are the rules that apply to Staff. Dominion is well aware of this.

MR. KUTIK: You're not telling me anything I don't know, counselor.

MR. REILLY: Okay. Then you mischaracterized what Staff had said because we never said that we will be bound by anybody's private agreement. We have never said that to anyone.

MR. KUTIK: Did you not tell Mr. Campbell that, was there not an exchange of e-mails with respect to Mr. Murphy's deposition documents on that subject?

MR. REILLY: I'm sorry, what? Regarding what?

MR. KUTIK: That you folks were

going to maintain the document that was going to be discussed in Mr. Murphy's deposition, that was going to be maintained as confidential subject to the Staff's statutory obligations.

MR. REILLY: We told him that we would comply with normal procedures, I think we're talking about the same thing, counsel.

MR. KUTIK: I agree.

MR. REILLY: What we said we would do, just so there's no misunderstanding, is that we are bound, our confidentiality requirements are provided by statute, one.

Two, the Commission's procedure with regard to confidential information, with regard to information that's claimed confidential, if somebody marks something confidential, the Commission holds it as such under its procedures unless -- until there's a request.

At that point the Commission makes a determination under the statute whether it is not -- whether indeed it

is confidential.

It under its current procedures, provides notice to the person or the side requesting confidentiality, that that request has been made. They have ability to seek protective orders or whatever other things they may want to.

MR. KUTIK: Counsel, and that's my understanding of what the agreement --

MR. REILLY: And I also point out --

MR. KUTIK: And that was my understanding of the agreement, so why are we having this discussion? Let's move on.

MR. REILLY: Because I've never seen your agreement and you said we were subject to some agreement we've never seen.

The other things I point out, just so there's no misunderstanding on this and I don't expect it to ever be a problem is the Commission will always apply its current procedures. These are

the current procedures that I have outlined to you. Now I don't think it should be a problem. It's never been a problem in the past, but I don't want there to be any mistakes about it.

MR. KUTIK: There aren't any mistakes, counsel.

MR. REILLY: Okay. Then we're fine.

MR. KUTIK: All right. Let's proceed then.

MR. REILLY: Okay.

MR. SAUER: Mr. Kutik?

MR. KUTIK: Yes.

MR. SAUER: Do you suggest we proceed under seal from this point forward given the confidential nature of the information within this document?

MR. KUTIK: Yes. That's why I believe at this point to the extent you're going to have discussions about this document, that we would treat this portion of the deposition going forward as confidential. And if the deposition is going to be submitted to the

Commission that we would do it under seal pursuant to the agreement that we have with you.

MR. SAUER: Correct. I think that's reasonable. Let's move forward then.

Q. Mr. Armstrong, do you have a copy of what's been marked previously as Deposition Exhibit Number 2?

A. Yes.

Q. I'm sorry, I didn't hear your answer, did you say you have seen this document before?

A. Yes.

Q. Okay. Can you tell me what this document is?

A. It's a PowerPoint presentation.

Q. Okay. How is it you're familiar with this document, sir?

A. I didn't hear that question?

Q. How is it that you are familiar with this document?

A. I have seen it before.

Q. Do you know who prepared

this document?

A. The AMR business case team.

Q. And if we look at the second page on this document at the top it says, AMR Business Case Team and lists nine members and an adhoc column with three members, is that correct?

A. No.

Q. I'm sorry, eight members, I can't count this morning. Eight members and three adhoc members?

A. Yes.

Q. Thank you. At the very top of the list it says, Bill Armstrong, is that you, sir?

A. Yes.

Q. And who is Joe Patten, the second name on the list?

A. Joe Patten is the manager of meter reading for Dominion East Ohio.

Q. And Patty Gilinsky, who is that?

A. Patty Gilinsky is a financial analyst for Dominion East Ohio.

Q. And Bob Metzinger?

A. Bob Metzinger is a manager of field metering services for Dominion East Ohio.

Q. And David Batson?

A. David Batson is a senior business performance analyst for Dominion Virginia Power.

Q. How about Rod Holmes?

A. Rod Holmes is the supervisor for meter engineering and planning for Dominion East Ohio.

Q. Supervisor of meter, did you say planning?

A. Supervisor of meter engineering and planning for Dominion East Ohio.

Q. Okay. And Abby Corbin?

A. Abby Corbin is manager of financial services for Dominion Services.

Q. And Ken -- I'm not sure -- Opipery, is that a correct pronunciation?

A. You've got it correct. Ken Opipery, I am not sure of his exact

title but he in general terms is a financial analyst working for Abby Corbin in the Financial Services Group for Dominion Services.

Q. And were any of these team members part of the Dominion Virginia AMR deployment team?

A. Yes.

Q. And who would they have been?

A. David Batson.

Q. He's the only one?

A. And myself.

Q. And you, yes. The adhoc members that are noted here, what was their role?

A. The role of the adhoc members was primarily someone in certain areas of the company that we could reach out and touch and get information needed for the business case.

Q. And Brett Crable who is on the adhoc list, what's his position?

A. At that time or at this time of this document, he was the director of

credit for Dominion Virginia Power and for Dominion East Ohio.

Q. Did Mr. Crable serve in a similar adhoc role on the Dominion Virginia AMR deployment?

A. I'm trying to remember back that far, I believe it was him.

Q. Okay.

A. There's a lot of movement of folks.

Q. I understand. Gwen Beadles, what was her role?

A. At the time of this document she was director of billing for Dominion Virginia Power and Dominion East Ohio.

Q. And again, did she play a similar adhoc role for your Dominion Virginia AMR deployment team?

A. Yes.

Q. And Ella Hochstetler, what was her position?

A. Ella was our adhoc member representing the Dominion call centers.

Q. And again, did she play a similar adhoc role for your Dominion

Virginia AMR deployment team?

A. No.

Q. And when was that business case team formed, sir?

A. This case team was formed in early 2006.

Q. And were you the team leader?

A. Yes.

Q. And did you have any particular role in particular as a team leader, any particular responsibilities I should say?

A. Could you be more specific?

Q. Did you have any responsibilities on this team in addition to or different from -- scratch that.

Did you have any responsibilities different from the other team members because you were the team leader?

A. Yes.

Q. And what were those additional responsibilities you had?

A. Well, as team leader, I

scheduled, arranged for and scheduled meetings of the team, managed overall work assignments. And by manage meaning through general management practices ensured that the various members of the team were working towards conclusion of their particular pieces. And it would be my responsibility to make sure that our effort to develop the business case scenarios was done in a timely fashion per management's direction.

Q. Did you have a specific deadline in which the business case had to be completed?

A. Not specifically that I can recall.

Q. Did the team report to upper management?

A. Yes.

Q. And who in Dominion, Dominion East Ohio's upper management did the team report to?

A. There was a steering committee that we reported to.

Q. And who was on the steering

committee, sir?

A. Richard Walden, who was director of metering services. Jeff Murphy, Carrie Fanelly, Brett Crable, Gwen Beadles, Mike Reed. That's it.

Q. Can you tell me what Carrie Fanelly's position is or was at the time? Is it a -- is that a male or a female, Carrie?

A. Carrie Fanelly's position at the time of this document was director of call centers for both Dominion Virginia Power and Dominion East Ohio. Carrie Fanelly is a female.

Q. Okay. I think you told me who Brett Crable and Gwen Beadles were. Mike Reed, what is Mike's position?

A. At the time of the document, Mike Reed was director of -- I'm not sure of the exact title, but director of field metering services.

Q. Is Mr. Reed in that position for Dominion East Ohio only?

A. Yes.

Q. And is your business case

team still meeting?

A. No.

Q. When did the team disband?

A. Sometime during the first quarter of 2007.

Q. And between early 2006 when you said the team was formed and the first quarter of 2007, how many times would you say your team met with the steering committee?

A. I cannot remember exactly.

Q. Was it on a set schedule?

A. No.

Q. Do you know when this particular document was prepared?

MR. KUTIK: Well, counsel, I'll note that I think there was -- on the electronic version, I think there's a date that does not show up on the printed version, so I don't know if you have the electronic version available to you, but we do not.

MR. SAUER: I don't here, but I do recall that that was the case.

MR. KUTIK: But if the witness

knows, you can obviously testify.

A. Yes. I believe it was March of 2006.

Q. And I think that would be consistent with the date Mr. Kutik was referring to. Did the team -- was this the only such document that the team provided to -- let me ask you this. Scratch that. Was this document presented to the steering committee?

A. Yes.

Q. And was it presented to the steering committee in March of '06?

A. Yes.

Q. And what did the steering committee do with the information the team provided in March of '06?

A. I don't know.

Q. Did the steering committee give the team any instructions after meeting with the team in March of '06 and being presented this information?

A. Could you be more specific?

Q. Following the meeting in March of '06 where this information was

presented, did the steering committee give the team any instructions?

A. On the day of the meeting with the steering committee where this information was presented, the steering committee did not receive any instructions from the steering committee.

Q. Well, not necessarily the day of the meeting, but after the steering committee had time to look at it, review it and make any decisions, were there any instructions that came back from the steering committee following -- subsequent to being presented with this information?

A. Just that the steering committee was going to present relevant information to senior management.

Q. And do you know when that meeting with senior management took place?

A. No, I do not.

Q. Were you or any members of your team present when that meeting with

senior management took place?

A. I was not present during that meeting and I am not aware that any of the AMR business case team was present.

Q. Would have that presentation to senior management been made by the entire steering committee?

A. I don't know.

Q. Following the steering committee's meeting with senior management, did the steering committee come back to your business case team with any instructions?

A. We were informed -- I'm jumping ahead a little bit, but we were informed that the aggressive business case scenarios were not going to be included.

Q. When you say aggressive business case scenarios, can you describe for me what made them aggressive?

A. What made the three business -- basically there are three business

cases. And what made them aggressive, we ran in essence a sensitivity analysis that assumed whatever the particular business case item was most favorable whether it was price, or installation time, et cetera. So in other words, it would be like if everything fell exactly into a dream case scenario on every aggressive item, what that business case would look like.

Q. Was there a team leader so to speak of the steering committee?

A. No.

Q. And was the document that's been marked as Deposition Exhibit 2, is it the only document that was provided to the steering committee by your business case team?

A. No.

Q. What else was provided to the steering committee?

A. We provided the steering committee a monthly update on our progress.

Q. And did you prepare that

monthly update?

A. It was often done verbally.

Q. And did you do that in conjunction with the entire team or did you do that by yourself?

A. As the team leader, I would gather input from the appropriate members of the team to provide that.

Q. And did you provide that information to the entire steering committee or to components of the steering committee?

A. I provided it to components of the steering committee.

Q. And what would be the typical subset of the steering committee that you would make your monthly updates on progress?

A. To Mr. Richard Walden who was my direct boss.

Q. Did you present anything else to the steering committee other than the monthly updates on progress?

A. No.

MR. KUTIK: We need to take

another break so let's just do that.

MR. SAUER: Okay. This is a good time.

(Recess taken.)

Q. Mr. Armstrong, were there any other documents that you recall providing to the steering committee from your business case team?

A. No.

Q. And what's been marked as Deposition Exhibit 2, is this the final draft of what was presented to the steering committee?

A. Yes.

Q. So whatever information the steering committee had for the executive management, it was derived from information that was contained in this document?

A. I don't know.

Q. If it was information that the steering committee would have had from your business case team, it would have been from this document, is that correct?

A. Yes.

Q. Can you turn to page 2 of that document, sir, it's numbered as page 2, it says, Business Case - What Has Changed, do you see that?

A. Yes.

Q. Can you tell me what analysis was done prior to the preparation of this document?

MR. KUTIK: Objection.

A. Could you rephrase the question?

Q. In the title of this document it says, What has changed, changed from what?

A. There were two additional scenarios run previous to this document.

MR. SAUER: I'm sorry, can I have that answer reread please?

(Record read.)

Q. And what were those scenarios, sir?

A. One scenario was to deploy AMR on premises or meters that have a current device called a Badger or

American Read-O-Matic device. The second scenario was a scenario that included moving all current inside meters to the outside of the premise and then deploying AMR full deployment.

Q. So under the first scenario you were describing deploying AMR on premises or meters that have a Badger or American Read-O-Matic device, how many AMR devices would have been deployed under that scenario?

A. I can't remember exactly.

Q. Do you have just an approximation as to the percentage compared to full deployment?

A. My best guess is approximately 50 to 100,000 premises with Badger or Read-O-Matic devices.

Q. And then the second involved moving all current meters that were inside to the outside and then full deployment of AMR, is this what you said?

A. Yes.

Q. And did you do a full

business case analysis on those two scenarios?

MR. KUTIK: Objection.

A. Could you rephrase the question?

Q. Yes. Did you do a similar business case analysis on those two scenarios as you've done within this document?

A. No.

Q. Did you present these two scenarios to the steering committee?

A. No.

Q. Were those two scenarios that were -- well, let me ask you this. How did you arrive at the two scenarios that you mentioned?

A. Could you clarify the question please?

Q. Yes. How did the team come to review the scenarios that you just identified, one, being deploying the AMR on premises or meters that have a Badger or American Read-O-Matic device as being one scenario and the second scenario

moving all inside meters outside and then full deployment of the AMR devices?

A. In analyzing our distribution system, we could break the analysis down into logical subsets. The deployment to the Badger, Read-O-Matics only was a logical subset. Moving meters, moving the inside meters outside was also a logical subset scenario.

Q. And if you'd move the inside meters outside were the AMR devices necessary anymore in order to comply with the Ohio MGSS rules?

A. Could you rephrase the question please?

Q. Under the scenario number two you were talking about, moving all current meters from the inside to the outside, would DEO then be able to comply with Ohio MGSS without deployment of AMR devices?

A. Yes.

Q. So when were these two scenarios that your team was initially thinking about, when did those first

come to light?

MR. KUTIK: I'm sorry, what scenarios are we talking about?

Q. The first one being the deployment of AMR on premises, on meters that have a Badger or American Read-O-Matic device and the second scenario being moving all current meters from the inside to the outside and then full AMR deployment, when were those two scenarios first being considered by the team?

A. In the period of January of 2006 up to no later than this presentation.

Q. And I was going to say when were they rejected?

A. I cannot remember.

Q. Do you remember how they were rejected?

A. Yes.

Q. How did it come that they were rejected?

A. The installation of AMR on just the Badger and American

Read-O-Matic devices for those, what I can recall 50,000 to 100,000 meters, would be such a small slice of the pie and still not have us comply fully with the Ohio Minimum Gas Service Standards, we rejected that. The scenario where moving all meters outside and then deploying AMR was viewed as too costly.

Q. And when you say the scenario of moving all inside meters to the outside was too costly, was that after performing a net present value analysis?

A. No.

Q. After performing an IRR analysis?

A. No.

Q. Looking at the payback?

A. No.

Q. How was the decision made that it was too costly?

A. The estimated cost to deploy that option was much higher than the three scenarios that we forwarded on.

MR. KUTIK: Let's go off the

record for a second.

MR. SAUER: Okay.

(Discussion had off the record.)

Q. Mr. Armstrong, we were just discussing a couple of different scenarios that your team decided not to go forward with, how was the decision not to go forward, who made that decision?

A. The AMR business case team by consensus.

Q. And is that typically how decisions were made, were they put to a vote or as team leader, if it was a 4-4 tie, did you have -- did you break the tie?

MR. KUTIK: Objection.

Q. Could you clarify the question?

A. Yes.

Q. I'm just trying to understand how the decisions were made, you said it was by consensus, does that mean you put these type of decisions to a vote by the team?

A. No.

Q. How did you decide what was a consensus?

A. Different points of views were expressed and debated and then decided upon or agreed to.

Q. Not necessarily unanimous decisions?

MR. KUTIK: Objection.

A. Can you clarify the question?

Q. Well, I'm just trying to understand how the dynamics of the team decision making was working, I mean, you said you didn't put it to a vote, so how exactly did these decisions get made?

A. By consensus.

Q. And I'm asking, what does by consensus mean?

A. Consensus means that points of view were allowed to be expressed. During that point of view discussion oftentimes various members of the team were -- would, excuse me, possibly see the point in a different light with

added information.

Q. The decision not to go forward with the two scenarios we were talking about earlier, the deployment of AMR on premises where the Badger or American Read-O-Matic devices were located or moving all current meters to the -- inside meters to the outside, did you agree with those decisions?

A. Yes.

Q. And was there different points of view on the team as to whether or not those scenarios should go forward?

A. No.

Q. The team agreed in totality that those scenarios should not be pursued?

A. Yes.

Q. Okay. Besides the two scenarios we were talking about here, are there any other scenarios that the team contemplated that aren't described within this document itself?

A. No.

Q. On page 2 right below the title of this, there's something about added fixed network technology solutions scenario, can you tell me what that means?

A. Yes.

Q. What is that?

A. Fixed network technology is an AMR technology where the device that reads the meters would be on a elevated structure of some sort that would be able to read all the meters in an approximate radius surrounding that elevated structure collector device.

Q. And was this fixed network technology added to all the different scenarios within the business case in this document?

A. No.

Q. Is the fixed network technology solution included in the scenario the company is proposing to go forward with?

A. I'm sorry, could read that one back to me, that question.

(Record read.)

A. The answer to that is no.

Q. So what was the technology, which scenario was it added to?

A. Could you clarify that question please?

Q. On this page 2 the bullet point says, Added fixed network technology solution scenario, added to what?

A. Added to the array of scenarios.

Q. And then this was rejected, is that what you're telling me?

A. Could you rephrase the question?

Q. I thought I asked you the question of whether or not this fixed network technology is included in any of the scenarios within this document and I thought you had said no?

MR. KUTIK: No. That mischaracterizes his testimony. What he said no to was that it was not part of the scenarios or the scenario that's

been proposed by the company.

Q. All right. Within this document there are various scenarios that your business team analyzed, is that correct?

A. Yes.

Q. Within any of those scenarios is the fixed network technology included?

A. Yes.

Q. Okay. Which of those scenarios is the fixed network technology included in?

A. The scenario of partial deployment, all inside meters, plus a 111,000 outside meters.

Q. And what was the determining factor in deciding which scenarios to include the fixed network technology solution in?

A. Rephrase please.

Q. How did your team come to determine which scenarios to add the fixed network technology to?

A. The fixed network scenario

was added to the inside meter, the partial deployment scenario based upon this technology applying to that subset of the distribution system.

Q. What do you mean by the technology applying to that subset of the scenario?

A. We considered the fixed network for the partial deployment that's listed as all 560,000 inside meter locations plus the 111,000 outside meter locations, we considered the fixed network for that scenario.

Q. And I thought your previous answer had said something about its application of the technology to that scenario, did I misinterpret something you said?

A. Could you clarify please?

MR. SAUER: I wonder if you could reread the answer, not previous but the one before that.

MR. KUTIK: Well, let's do that, but I think we need to be breaking so.

(Record read.)

Q. And my follow-up question was what did you mean by that technology applied to the subset -- to that subset of the distribution system?

MR. KUTIK: Objection. Asked and answered. Go ahead.

A. What I mean by that is that technology would -- that technology would work for that scenario.

Q. And when you say work, in a operational sense it would work?

A. Yes.

Q. And not work in a cost effective sense of the word?

MR. KUTIK: Objection.

A. Could you clarify that last question?

Q. Yes. I was trying to determine whether the decision as to where to deploy the fixed network technology was a cost-based decision?

A. Yes.

Q. So there's a couple of components to how your team arrived at where to put the fixed network

technology or where it best fit, one being from an operational standpoint it worked best in that partial deployment scenario, you agree with that?

A. No.

MR. KUTIK: Well, at this point we do really need to break.

MR. SAUER: Okay. Let's take a break and resume at 1:30.

(Recess taken at 11:19 a.m.)

MR. SAUER: Go back on the record.

Q. All right. Mr. Armstrong, earlier this morning we were asking you some questions about the benefits of the AMR program or the AMR deployment that you included in your business case, do you recall that discussion?

A. Yes.

Q. And with regard to potential benefits of the AMR, did DEO consider the possibility of benefits arising from the reduction in fraud or theft or meter tampering, those kind of items?

A. No.

Q. Did Dominion Virginia experience any reduction in costs associated with fraud or theft or meter tampering as a result of their AMR deployment?

A. Could you be more specific please?

Q. Does Dominion Virginia experience any problems that you're aware of with theft of service or meter tampering or those kind of items?

A. Yes.

Q. And once Dominion Virginia implemented or deployed the AMRs in their service territory, was there a reduction in cost associated with theft or meter tampering?

A. I don't know.

MS. HAMMERSTEIN: Hello, this is Anne Hammerstein. I've joined the call.

MR. SAUER: Hi, Anne, we were just getting started.

MS. HAMMERSTEIN: Thank you, Larry.

Q. Mr. Armstrong, remember this

morning we had asked you some questions about the Ohio Minimum Gas Service Standards?

A. Yes.

Q. With regard to DEO's outside meters, do you believe that there are impediments to DEO obtaining an actual reading once every 12 months?

MR. KUTIK: Objection.

A. Can you be more specific?

Q. In terms of attempting to comply with the Ohio Minimum Gas Service Standards, does DEO face an impediment to that compliance when attempting to read outside meters?

MR. KUTIK: Objection.

A. Is there a way you can rephrase that question please?

Q. In your business case you've quantified some benefits associated with doing the AMR deployment as a result of cost savings will be derived from compliance with Ohio's Minimum Gas Service Standards, is that correct?

A. Yes.

Q. Are the cost savings that you've identified, are those all in relation to inside meters?

A. No.

Q. So that you're anticipating there will be some cost savings from the AMR associated with -- in the area of saving costs in DEO's compliance with Ohio Minimum Gas Service Standards resulting from AMRs that are installed on outside meters, is that correct?

A. Is there a way that you can rephrase that question?

Q. Are there cost savings that DEO has estimated in your business case associated with the deployment of AMR technology on outside meters?

A. Yes.

Q. So that DEO has identified impediments to obtaining meter reads in compliance with Ohio Minimum Gas Service Standards on outside meters?

MR. KUTIK: Objection. Go ahead.

A. Yes.

Q. And can you kind of explain

what those impediments are?

A. Yes.

Q. What might those be?

A. Because a meter is designated as outside does not equate to that it is accessible for manual meter reading purposes.

Q. Can you explain what would create a situation where an outside meter is not accessible to a meter reader?

A. Yes.

Q. Please do so.

A. For example, a typical example would be a row of either condominiums or townhouses that might have the meter outside but located at the rear of the property building wall. And each one of those townhouse/condo properties have fences around the perimeter of each of their lot parcels that are -- that separate one from another and are behind locked gates.

Q. Is that a prevalent problem?

MR. KUTIK: Objection.

A. Could you be more specific?

Q. How much of a problem is that, can you quantify it?

A. No.

Q. Is that the only example that you can identify where an outside meter is not accessible to a meter reader?

A. A similar occurrence would be on an apartment complex again where the meters are outside but they are what's termed as banked, in other words, they're meters that are side by side by side at, for instance, one end of the complex and the apartment owner has, again, enclosed those by a security fence or a fence that would, again, limit access for the meter reading.

Q. Were you able to quantify what the estimated cost savings would be by the deployment of AMR devices to outside meters?

A. No.

Q. Are the impediments that you've described, were they deemed

sufficient to justify deploying the AMR to all outside meters?

MR. KUTIK: Objection.

A. Can you rephrase the question please?

Q. Yes. You've stated that there are impediments in attempting to read outside meters that make compliance with the Ohio Minimum Gas Service Standards problematic, such as apartments or condos putting up a security fence or in a manner blocking the meter reader from access to those. In looking at your business case, were those impediments deemed sufficient to deploy AMR to all outside meters?

MR. KUTIK: Objection. Assumes that that analysis was done. Go ahead.

A. That analysis was not conducted.

Q. Mr. Armstrong, you indicated that there are cost savings by the deployment of AMR associated with DEO's compliance with Ohio Minimum Gas Service Standards, correct?

A. Yes.

Q. Do those costs -- do those estimated cost savings include savings associated with DEO's deployment of AMRs to outside meters?

A. Can you please rephrase?

Q. The estimated cost savings by deploying the -- by deploying AMR associated with compliance with Minimum Gas Service Standards, can you tell me what makes up your estimate of those cost savings?

A. Yes.

Q. What are the components of the cost savings, please?

A. The cost savings derived -- well, the avoided costs from having to gain access to limited access meter locations. The -- that's it.

Q. And are those avoided costs broken down by how much of that pertained to outside meters versus inside meters?

A. No.

Q. How were those cost estimates

derived? Let me ask you another question. Let's try this. Would the cost savings associated with compliance with Minimum Gas Service Standards, would you expect those to be the same for inside meters versus outside meters?

A. I would expect them to be the same for inside meters and outside meters knowing that the accessibility of particular outside meters and inside meters are essentially the same.

Q. Are there impediments to reading all the inside meters?

A. Can you be more specific?

Q. Isn't it true that DEO has meters that are installed inside of customers' homes that DEO actually reads every other month?

A. Yes.

Q. And for those meter locations there are no impediments for reading those meters?

MR. KUTIK: Objection.

A. Can you rephrase the question?

Q. You had previously answered that on DEO's system there are inside meter locations that DEO is able to read every other month, and my question was in those situations, there are no impediments to reading those meters, correct?

MR. KUTIK: I'll object because the question doesn't state over what period of time we're talking about reading meters. You're talking about, for example, reading meters every month, are you talking about reading meters every other month, once a year?

Q. The question was just surrounding the reading of meters every other month, is that DEO's normal meter reading practice, Mr. Armstrong, that meters are read every other month?

A. Currently DEO's practice is to read all meters every other month.

Q. And with those meters that happen to be located inside that DEO is able to receive -- to actually gather actual reads, there is no impediment to

reading those meters then, is there?

MR. KUTIK: Objection.

A. Is there any way you can restate or rephrase that question please?

Q. What do you consider to be an impediment to reading the inside meters?

A. Accessibility.

Q. And for the meters that are located inside the DEO is able to get access to every other month, is that because, one, the customer's at home, may that be one reason how you get access?

A. That's one reason how we gain access.

Q. Another way does Dominion have a key to some of the locations where the meters are located inside?

A. Dominion has keys to some locations to gain access.

Q. Are there other ways that Dominion has access to these inside meters other than that?

A. No.

Q. So if I understand what you told me, the business case that you've prepared and is contained in the document that was marked as Deposition Exhibit Number 2, the cost savings associated with installing or deploying the AMR that would be achieved complying with the Ohio Minimum Gas Service Standards did not differentiate between cost savings associated with inside versus outside meters, is that true?

MR. KUTIK: Objection. Misstates his testimony.

A. Can you rephrase the question please?

Q. Your business case you have identified and estimated there to be savings associated with compliance with the Ohio MGSS because of the deployment of AMR technology, is that correct?

A. Yes.

Q. Do those estimated savings contain -- do those estimated savings assume savings associated with inside

and outside meters?

A. Yes.

Q. Was there any attempt when quantifying those savings estimates to differentiate between inside and outside meters?

MR. KUTIK: You mean to break it down?

MR. SAUER: Yes.

MR. KUTIK: Okay. Objection. Asked and answered. Go ahead.

A. No.

Q. All right. Could you turn to page 9 of the document that's been marked Deposition Exhibit Number 2. At the top it says, Financial Summary, do you see that?

A. Yes.

Q. Can you tell me what page 9, what this page is attempting to do?

A. Yes.

Q. There's a column at the far left that has what appears to be different deployment scenarios, do you see that?

A. Yes.

Q. There is the first one full deployment, A 3, A - 3 year installation, what is that depicting, what is the full A - 3 year installation deployment?

A. The full deployment A - 3 year installation depicts the scenario of full AMR deployment with the aggressive assumptions over a deployment period of three years.

Q. And right. Below that it says, full deployment three-year installation, that would be the full deployment without the aggressive assumptions?

A. Yes.

Q. And then coming down the next box it says, inside meters, A - 3 year installation and the description says, a partial deployment, all 560,000 inside meters, plus 111,000 outside meters, does the A there depict again the aggressive assumptions?

A. Yes.

Q. And are the aggressive assumptions in the partial deployment the same as the aggressive assumptions in the full deployment?

A. Yes.

Q. These deployment scenarios all involve installation of the Itron AMR devices?

A. Can you be more specific?

Q. There are if I'm counting right now, there are five different scenarios depicted on this pages identified as financial summary, is that correct?

A. Yes.

Q. Two full deployment scenarios and three partial deployment scenarios, true?

A. Yes.

Q. And those five scenarios, do they all involve installation of the Itron AMR devices?

A. No.

Q. And which ones -- which one or ones involved installation of the

Itron?

A. The installation -- let me answer that in reverse. The one installation that does not involve an Itron device is the inside meters network three-year installation.

Q. The very last one, is that correct?

A. Yes.

Q. And what device does that deployment assume installation of?

A. That installation assumes a Neptune meter device.

Q. You say that was a Neptune device?

A. Excuse me, I misspoke, that was a Hexagram, a Hexagram metering device.

Q. Hexagram. And how does the Hexagram device differ from the Itron device?

A. The Hexagram device on the meter and the Itron device on the meter are similar devices.

Q. They perform the same

functions?

A. Essentially, yes.

Q. Hexagram is battery operated?

A. Yes.

Q. And Hexagram has one-way communication capabilities?

A. Yes.

Q. Is there a reason why there wasn't full deployment scenario done with the Hexagram?

A. Yes.

Q. And what would that reasoning be?

A. That the cost for a full deployment with the Hexagram technology was too expensive.

Q. So are the Hexagram meters themselves more expensive than the Itron devices?

MR. KUTIK: Objection.

A. Could you be more specific or rephrase that?

Q. Is the cost of a Hexagram meter device more expensive than an Itron meter device?

A. Yes.

Q. Is the cost to install a Hexagram meter device more expensive than to install the Itron device?

A. No.

Q. The second column in that financial summary describes each of the scenarios that we were describing or you were just describing, correct?

A. Rephrase please?

Q. The second column it's labeled, description and it is a description of the different deployment scenarios that you were discussing, correct?

A. Yes.

Q. And the next column coming over, it says, deployment costs, do you see that?

A. Yes.

Q. And for a full deployment aggressive three-year installation, it says it's $94.8 million, do you see that?

A. Yes.

Q. Can you explain where this -- where your cost information, how that was derived?

A. Yes.

Q. How was that information derived, sir?

A. It was derived by per scenario and it was derived by determining the cost of the technology plus the estimated labor cost to deploy that technology.

Q. Are there any other factors that went into developing the deployment costs?

A. Yes.

Q. What else went into that cost item?

A. There are certain existing meter types in our distribution system that the technology would not fit so to speak. The technology could not be installed on a certain subset of meters.

Q. Can you explain what technology that is, Mr. Armstrong, that was not compatible with the AMR

technology?

A. Yes.

MR. KUTIK: Objection. Go ahead.

Q. What is that?

A. There are existing meters in our distribution system that are known as tin case meters. In general, these are old meters and the technology would or cannot physically be installed on that type of meter.

Q. So in order to do the deployment, you had to actually take that tin case meter out and put a different type of meter in and then install the AMR technology?

A. Yes.

Q. And how many of those tin case meters are on your system?

A. Approximately 88,000.

Q. And the cost of the removal of the tin case meter and the replacement of that with a different meter and installation of the AMR technology, is that all included within the deployment cost of 94.8 million

shown on the full deployment A - 3 year installation scenario?

A. Yes.

Q. And are there any other costs that flowed into the calculation of that 94.8 million?

A. No.

Q. What is it about, I'm looking at the next deployment cost down, the 102.8 million for the full deployment three-year installation, what is it about the aggressive nature of your assumptions in the one above that would actually reduce the cost of that deployment?

A. Can you please rephrase that question?

Q. Yes. Do you see the deployment costs shown for the full deployment three-year installation of 102.8 million?

A. Yes.

Q. And the difference between that one and the one right above it is $8 million, is that correct?

A. Yes.

Q. And what I was asking is what is it about the assumptions, the aggressive assumptions in that first deployment scenario that reduces the deployment costs by the $8 million?

A. The aggressive assumptions on various items are financially lower in the aggressive scenario.

Q. Can you give me an example?

A. Yes.

Q. What would that be?

A. The cost to change those tin case meters that we spoke of.

Q. Okay. And on the full deployment how does the cost treatment for the tin case meters differ from the scenario in which there are aggressive assumptions?

A. Could you read that question back to me please?

(Record read.)

A. Might you rephrase that please?

Q. In the aggressive scenario,

why is it cheaper to replace the tin cost -- the tin case meters than in the nonaggressive scenario?

A. In the aggressive business case, we took the approach of certain cost items to be assumed to be the best that we could foresee them to be for the installation. So that is why in this example the meter change labor cost was lower than in the full deployment aggressive scenario versus the full deployment regular scenario.

Q. So are you suggesting under a normal scenario, it might take you two hours to change out the tin case and put a different meter in and the AMR device and under the aggressive you're suggesting, well, we cut that in half, maybe we can do that in an hour, I mean, best case scenario, is that the kind of thing you're talking about?

MR. KUTIK: Objection.

A. Can you be more specific?

Q. In the full deployment, three-year installation, what did you

assume for the time to remove the tin case meter and installing the AMR device, do you recall?

A. We did not assume a time.

Q. Well, when you said your aggressive assumptions were kind of a best case scenario, what did you assume?

MR. KUTIK: For what?

Q. All right. We've agreed that there's an $8 million difference between the full deployment three-year installation and the full deployment aggressive scenario, is that true?

A. Yes.

Q. And you stated that one of the areas in which there were cost savings was in the installation of the tin case meters, was that true?

A. Yes.

Q. Can you quantify what that estimated difference would be pertaining to the tin case meters, how much of that 8 million is encapsulated in your assumptions regarding the tin case meter installations?

A. Yes.

Q. How much would that be?

A. $20 times 88,000. I don't have a calculator.

Q. What does that $20 represent?

A. The labor cost assumption delta between the aggressive and the standard business case.

Q. Okay. And that labor cost difference is the only difference between those two scenarios?

MR. KUTIK: With respect to tin can meters?

Q. Tin case meters, yes.

A. With respect to tin case meters?

Q. Yes.

A. Yes.

Q. And in the aggressive case is there a different assumption for the cost of the technology between the aggressive and just the standard full deployment three-year installation?

A. Yes.

Q. And what drives that

difference, sir?

MR. KUTIK: Objection.

A. Can you be more specific?

Q. Why have you estimated a cost difference between the full deployment and the full deployment aggressive relative to the cost of the technology?

A. Because in the aggressive scenario, we believe that it is possible to extract a better price.

Q. The next column, sir, is labeled, first year net income, do you see that?

A. Yes.

Q. What do those numbers represent?

A. The net of the cost benefits for the first year of the deployment.

Q. I'm sorry, could you reread that answer please.

(Record read.)

Q. Do you mean that the benefits -- does the 3.8 million in the first column, the first row here for

full deployment aggressive three-year installation, does that mean the benefits are greater than the costs, is that what you're saying?

A. Yes.

Q. And what benefits were factored in to your calculation of the first year net income?

A. I don't know specifically.

Q. And what cost factors did you consider in deriving the first year net income?

A. The total cost of --

Q. The 94.8 million in the first example, first scenario?

MR. KUTIK: Objection. Mischaracterizes his testimony. Go ahead.

A. Can you rephrase the question please?

Q. Yes. In computing the first year net income, are you suggesting that in the first year the cost of the technology, the labor cost to deploy the technology, the replacement of the tin

case meters, all of those costs were compared to the benefits and the result of that comparison is $3.8 million?

A. For the first year of the deployment.

Q. And in each of the five scenarios, the benefits were greater than the costs in the first year each time, is that correct?

A. The first year net income are -- for the various scenarios are shown in that fourth column.

Q. Okay. And they're all positive numbers, does that mean that the benefits of each of those scenarios outweighs the cost?

A. Yes.

Q. And how did your team utilize this information?

A. Can you be more specific?

Q. What did a positive 3.8 million in first year net income in the full deployment aggressive three-year installation scenario, how did your team use that information?

A. It was one comparison statistic to compare the -- in this case the five scenarios listed.

Q. So for example, if you look at down the line, the third one coming down, the 4.5 million inside meters aggressive three-year installation, is that the best of the five scenarios then?

MR. KUTIK: Objection.

A. Can you be more specific?

Q. Yes. I'm just focusing on that column that's labeled first year net income, you said that was one factor that was being considered, was it considered based on the higher the number, the better the scenario?

MR. KUTIK: Objection.

A. The higher the number on first year net income, that statistic, the higher the number, the better, relatively speaking.

Q. Okay. And if we come across to steady state net income, years four to six, what does that column represent?

A. It's a numerical statistic similar to the first year net income but during years four, five and six of the project.

Q. So --

MR. KUTIK: Before you ask your question, I need to take a break.

MR. SAUER: Okay.

MR. KUTIK: We'll be back in a couple minutes.

(Recess taken.)

A. This is Bill Armstrong, before we proceed any further, I'd like to go back and clarify, I believe I may have misstated an answer to a previous question.

Q. Okay. Which question are you referring to, Mr. Armstrong?

A. I don't know the exact question number. I know I can easily -- more easily refer to it as on this financial summary page 9 document.

Q. Okay.

MR. KUTIK: Go ahead and explain.

A. Okay. I want you to

reference column four that's titled, first year net income.

Q. Okay.

A. What that represents is the effect of each particular scenario on the net income as a result of the first year of the project. Before I believe I stated that it was a net of the cost and the savings or the cost and the benefits I think is the word I used. What -- I'm correcting that and what I'm telling you that these numbers represent is the -- and again, for each scenario the relative effect on net income from the first year of the project.

Q. And maybe it's a distinction that I'm not sure I'm completely following, but are you saying -- just a second please. Can you explain what the distinction is between your first answer and what you're answering now?

A. Yes.

Q. And please do.

A. I believe I implied that in my first answer that, for example, under

the full deployment A - 3 year installation scenario, the number under first year net income column of 3.8 million, was the net of the cost for deployment and the savings. And you had followed with several questions regarding that. What I am now hoping to correct and explain to you is that that number represents in the first year of, again, using the full employment deployment A - 3 year installation example, in the first year of that project, that project's effect on net income is $3.8 million.

Q. Your original description you said it was a net of cost and benefits. The cost of the program, would they have an effect on net income?

A. Net income in a macro sense are revenues less expenses, everybody pays taxes, gives you net income.

Q. And what we were talking about, let's say the cost of technology when you're doing your full deployment A - 3 year installation that cost of

technology, will that have an effect on net income?

A. I do not think so.

Q. And the labor cost to deploy that technology will that have an effect on net income?

A. No, it would not.

Q. The tin case meter, the cost associated with the change out of the tin case meters to create compatibility with the AMR technology, would the cost associated with that portion of the cost you identified effect net income?

A. No.

Q. So the cost side of the deployment doesn't factor into the first year of the net income column at all, is that correct?

A. That's correct.

Q. So the effect on net that is represented by this fourth column is just the benefits side of the deployment?

A. No.

Q. Why not?

A. It would include, and we may be talking the same thing, it would include the reduced O and M expenses or operating expenses as a result of the deployment.

Q. And maybe we are talking the same thing, I mean, the savings that are derived from the deployment, benefits from the deployment are what you're trying to capture in the first column, effect on net, that fourth column, is that true?

A. Column four is the effect of the operating expense in this case savings that have that particular effect on net income.

Q. Let's move over to the next column, steady state net income, years four to six?

A. Same as we just explained or I just explained but for a different time period.

Q. Okay. And was there a reason for selecting years four to six?

A. I don't know.

Q. Was there a reason not to look at years two to three?

A. Years four to six are typical years that the financial group uses to evaluate in this case this project for this item.

Q. Was there a transition or a change in the effect on net in that time period that made that a relevant period to look at?

A. Can you rephrase that?

Q. Yes. I was just trying to get a sense, between years one and years four to six, was there some reason in particular that made that a relevant period to look at for your study?

A. Yes.

Q. And what is that?

A. The net income will -- the effect of the -- for any given scenario, the effect of the benefits or the savings on net income will change during the deployment time period. Under this scenario, years four to six are three years post-deployment completion,

therefore, deemed steady state which the financial numbers show in full deployment A - 3 year installation became steady at 3.5 million.

Q. And if we can step back for just a second to the first year net income column. You said relatively speaking, the greater the number, the better the scenario, did that change with your change in or your clarification on your answer to what that column represented?

A. No.

Q. And would the same hold true for the steady state net income column, years four to six, the higher the number, the better the scenario?

MR. KUTIK: Objection.

A. Just rephrase the question please.

Q. Sure. Does the same hold true in the column marked steady state net income, years four to six, is it true that the higher the number, the more desirable the scenario?

MR. KUTIK: Objection.

A. Please rephrase or clarify.

Q. How did your team view the numbers that are in the various boxes under the steady state net income, years four to six?

A. The way the team viewed the numbers under the column steady state net income, years four to six was for that financial measure, the higher the number, the better that financial measure is for any given scenario.

Q. And did your team pit scenario versus scenario in looking at how they shake out based on the results of the steady state net income, years four to six?

MR. KUTIK: I think there was a word that cut out, so could you repeat that please?

Q. Yes. Did your team compare scenarios based on the outcome of the steady state net income calculation?

A. Yes.

Q. For example, was the full

deployment aggressive three-year installation viewed more favorably than the full deployment three-year installation because the steady state net income was higher in that first scenario versus the second scenario?

A. Under the assumptions that were made in the aggressive case, yes.

Q. And the next column is labeled, unlevered IRR, do you see that?

A. Yes.

Q. Can you explain what an unlevered IRR calculation represents?

A. Yes.

Q. And what does that mean?

A. IRR is a particular financial analysis that is yet an additional measure of investment projects. And unlevered means that in that financial analysis calculation, the unlevered piece means that the relative financial structure of the Dominion subsidiary submitting the project is in effect discounted from that IRR calculation.

Q. And the results of the

unlevered IRR calculation are depicted in percentage form, correct?

A. Yes.

Q. And again, is the higher the percentage, the more -- or the higher the percentage, the better the scenario?

MR. KUTIK: Objection.

A. Can you rephrase the question?

Q. Yes. How did your team utilize the percentages that are depicted under the unlevered IRR column?

A. The team used the percentages under the unlevered IRR column as a, again, for that financial measurement, a benchmark to the relative financial performance of that scenario.

Q. And relatively speaking, is the higher the unlevered the IRR, the better the scenario?

A. Yes.

Q. And why did DEO -- let me ask you this. Are there also levered IRR calculations, can you do that?

A. Can you rephrase the

question?

Q. Yes. When you're doing financial analysis, what you've depicted here are unlevered IRRs or unlevered NPVs in the next column, can you also do the same analyses using a levered methodology?

A. Yes.

Q. And is there a reason why your team chose to use unlevered versus the levered methodology?

MR. KUTIK: Objection. It assumes that that's what they did. Go ahead.

A. Using an unlevered approach enables senior management of Dominion to equitably compare investment opportunities from the various business units.

Q. Again, in the next column over, there's the unlevered NPV, 9.4 percent for 15 years, do you see that?

A. Yes.

Q. What's the 9.4 percent represent?

A. That represents the discount rate input to the NPV analysis.

Q. And what does 15 years describe?

A. 15 years describes over what time period we evaluated the net present value.

Q. And why was the 9.4 percent discount rate decided upon?

A. That was decided on because that's the weighted average cost of capital for Dominion for this analysis.

Q. Okay. Not necessarily Dominion's authorized rate of return?

A. Weighed average cost of capital doesn't have anything to do with authorized rate of return.

Q. Okay. How was the 15 years decided upon?

A. 15 years was decided upon because looking at other industry projects of a similar nature, typically the technology device on the meter will last 15 years.

MR. SAUER: I'm sorry, could I

have that answer reread?

(Record read.)

Q. When you look at the unlevered IRR column, is there a benchmark that DEO compared the results of their study to?

A. Can you be more specific?

Q. Did you look at the results of your analysis, and right now I'm just focused on the unlevered IRR column, did you look at your results in a vacuum?

A. Can you be more specific? I'm not sure what you mean by vacuum.

Q. I mean, did you have -- let's take the 15 years, for example, you said that that was -- you had looked at what the industry practices had been and what you thought the technology would last and you came up with 15 years and that was what was input in the NPV. When you did your IRR calculations, were the numbers just what they are and you didn't do anything else with them?

A. The numbers that are shown

on this financial summary for each column of financial calculation were used by the team to compare the scenarios.

Q. As part of this analysis is there a threshold IRR percentage result that must occur for a project to go forward?

A. Not that I'm aware of.

Q. So an IRR of zero, the project still could have gone forward?

MR. KUTIK: I'll object. Incomplete hypothetical. Go ahead.

A. I would say yes.

Q. And moving on to the unlevered NPV, what do these numbers represent?

MR. KUTIK: I'll object to the extent that this question has been asked and answered. Go ahead.

A. NPV analysis takes in this case deployment costs and associated savings, orients them over the time period specified and then since we're talking about a future period when the

analysis is being done, brings those -- that net value back to the date and time you're doing that analysis. So it gives you a dollar figure from which to compare alternatives.

Q. Again, how did your team use the results of your unlevered NPV analysis?

A. Again, on this particular financial benchmark or analysis, the unlevered NPV looking at 15 years and a discount rate of 9.4 percent, we used the results of that to compare the different alternatives.

Q. And again, in doing that comparison, would your team view the higher the unlevered NPV to be the better scenario?

MR. KUTIK: Objection.

A. Could you rephrase the question?

Q. Yes. Based on the assumptions contained on this financial summary, would your team view relative one scenario to another scenario, the

better scenario to be the one that has the higher unlevered NPV?

A. The scenario with the higher NPV for an unlevered NPV shows the alternative that has the more attractive financial result.

Q. If you come down to the second box under the unlevered NPV column, full deployment three-year installation, there's a negative number in that box, do you see?

A. Yes.

Q. Can you explain the significance of the negative value associated with that unlevered NPV calculation?

A. In an NPV analysis when the result is a negative number represents a scenario in that NPV analysis where the net present value is a negative number.

Q. I understand it's negative, what I'm trying to understand is what's the significance of the fact that that's a negative number?

A. The significance is that it's

a negative number would be, again, over that time period at that discount rate that the money invested would -- the net present value of the money invested would be negative. So what I'm trying to explain is that, as we said before, the higher -- there's NPV analysis that could come out positive and negative, and again, it's the more positive the number, the better the financial indicator is for that analysis for whatever scenario you're running it on.

Q. For let's say if you come down to the box, the third box down, there's a number in there, approximately $23 million, do you see that?

A. No.

Q. 22,690,000?

A. Got it, got it. Yes.

Q. Does that mean for over the 15 year period that you're looking at, the money invested would have a positive return in that amount over that period of time?

A. No.

Q. What does that represent?

A. Can you be more specific?

Q. Yes. The 22 million, almost 23 million dollar number, what would that represent?

A. What that represents, means for the -- I think you said the third box down, which to be specific is referencing the inside meters aggressive three-year installation scenario, what that means is when analyzing that scenario looking at the costs and the benefits and bringing it back to today's dollars with today being the date that you did the analysis, that that scenario is in essence worth $22,690,245. That's the present value of that analysis.

Q. The last column, sir, the payback in years. Similarly, how did your team use the numbers that are under that column?

A. We, again, for that financial measure, we used the numbers in that column to compare the scenarios.

Q. And for this particular

column, would it be true that the reverse is true, the lower the number or the faster the payback, the better the scenario, is that true?

A. The lower the number in this column would represent the scenario or this payback financial measure would indicate the most favorable financial measurement when comparing these scenarios.

MR. SAUER: Mr. Kutik, if I could have another document marked as Deposition Exhibit Number 3. It's a data request, OCC 14th Set, question was number 524, do you have that one there?

MR. KUTIK: Yes, we do. Let me mark it.

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(Thereupon, Deposition Exhibit-3 was marked for purposes of identification.)

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MR. SAUER: That's been marked?

MR. KUTIK: Yes, it has.

Q. Mr. Armstrong, do you have a

copy of what's been marked as Deposition Exhibit Number 3?

A. Yes.

Q. Have you seen this document before?

A. Yes.

Q. And what is the document, sir?

A. It appears to be Dominion's response to an OCC interrogatory regarding items that are articulated under the section called question.

Q. Okay. And did you assist in the preparation of this response at all?

A. No.

Q. And you see part B of the question it says, if the company has not conducted any business case analysis that assumed a five-year deployment schedule, please explain why. Or I'm sorry, let's move up before that under A, it says, please explain whether the company has conducted any business case analysis that assumed a five-year deployment schedule and the answer is

your company did not, is that your understanding?

A. Yes.

Q. And then under B it says, if the company has not conducted any business cases that assumed the five-year deployment schedule, please explain why. And then the response below is, the company's decision to propose a five-year deployment was based on additional criteria, including the time needed by company employees to complete the program, and additional studies were not necessary, do you see that?

A. Yes.

Q. And is it your understanding that the deployment the company is undertaking right now is a five-year deployment?

MR. KUTIK: Objection.

A. Could you rephrase the question please?

Q. Yes. Under what period of time does the company propose to deploy

its AMR technology?

A. It's my understanding that we have proposed a five-year deployment.

Q. And do you know when that decision was made?

A. No.

Q. Was that decision made while your business case team was still intact?

A. I answered that I don't know when that decision was made, so I can't answer this question.

Q. The analysis that we've been looking at on page 9 was all done pursuant to an assumption that the deployment would be in three years, correct?

MR. KUTIK: Are you talking about Exhibit 2?

MR. SAUER: Back on Deposition Exhibit 2, page 9.

A. All of the scenarios on Exhibit 2, page 9 assumed three-year deployment scenarios or time frames.

Q. And why was the three-year

deployment scenario selected?

A. That deployment scenario was selected because that's the time frame that would be feasible for those deployments to occur assuming we use a contractor.

Q. Assuming you use a contractor for what phase of the project?

A. For the labor to deploy, excuse me, for the labor to deploy the technology.

Q. Why assume three years for a contractor?

MR. KUTIK: Objection.

A. Can you rephrase the question please?

Q. Yes. You said you decided on three-year deployment because of the assumption that you were going to use a contractor to perform the deployment. Why did you assume three years for that assumption?

A. Based on our experience with the Dominion Virginia Power deployment and industry experience and knowledge,

we knew for the deployment scenarios in question on Exhibit 2, page 9, that with a contractor they could be feasibly completed in that time frame.

Q. And now that the deployment is five years, does that still assume using a contractor?

A. No.

Q. Does it assume using Dominion in-house labor?

A. If by Dominion you mean Dominion East Ohio, the answer is yes.

Q. Exclusively Dominion East Ohio labor?

A. With the exception of myself and David Batson, whom we referenced earlier, we're on the deployment management team.

Q. Okay. But as far as the actual, the physical deployment, there's no assumption for the use of a contractor to do any of that work?

A. Rephrase please.

Q. As far as the actual physical deployment of the AMR devices

under a five-year deployment scenario, you're not assuming the use of any contract labor to do that deployment, is that correct?

MR. KUTIK: And this is as proposed, correct?

MR. SAUER: As proposed.

A. That is true. That is correct. No contractor.

Q. Does the use of in-house labor versus contract labor change the cost profile of the deployment?

MR. KUTIK: Objection.

A. Could you be more specific?

Q. Has your team done any analysis on the change in deployment costs that might arise due to the use of in-house labor rather than contract labor?

A. Yes.

Q. And when did your team perform that analysis?

A. I can only answer that relatively, it was after the decision of a five-year scenario was put forth.

Q. But your team did that analysis, is that correct?

MR. KUTIK: Objection.

A. Just rephrase the question.

Q. Did I understand you to say your team has done the analysis to compare the deployment cost of the -- the difference in deployment cost assuming the use of Dominion East Ohio labor versus contract labor?

A. Yes.

Q. Your team did that study or analysis?

A. Was that another question? Yes.

Q. And I asked when did your team do that analysis?

MR. KUTIK: And he answered that question after the decision was made to go to the five-year scenario.

Q. And was that analysis performed in a comparable fashion to the analysis that was performed on what is depicted on page 9 of Deposition Exhibit Number 2?

A. No.

Q. So you didn't do a full deployment aggressive five-year installation and look at what the net present value of that scenario might have been?

A. We did not do that.

Q. Do you recall what the difference in the deployment cost was when you did that analysis of using company labor versus contract labor?

A. Yes.

Q. And what was that, what did that analysis show?

A. That the difference in, again, we're talking labor costs for deployment, for a five year full deployment timeline would be approximately $4 million difference.

Q. I'm sorry, you trailed off after you said $4 million, I didn't hear the rest.

A. I'm sorry. The difference between --

MR. KUTIK: The word was

difference.

A. A $4 million difference.

Q. Was it more expensive to use company labor than contract labor?

A. Yes.

Q. And did you look at that only in the sense of a full deployment scenario?

A. Be more specific. Did we look at what?

Q. The difference in the cost of labor for the deployment of AMR devices using company labor versus contract labor?

A. We looked at that under the assumption of a five-year deployment.

Q. For how many different scenarios?

A. Just the -- one scenario.

Q. Mr. Armstrong, when you looked at what changed relative to the costs, were there any change in the benefits as a result of using company labor versus contract labor?

A. No.

Q. Based on the results of the financial summary that's shown on Deposition Exhibit 2, page 9, did your team make any recommendations to the steering committee as to which scenario was most desirable?

A. No.

Q. Was there any discussion with the team from the steering committee regarding one scenario versus another?

A. Yes.

Q. And based on that discussion, did the team have an understanding of what scenario the steering committee felt was most desirable?

A. No.

Q. Mr. Armstrong, do you have an opinion as to which of the five scenarios shown on page 9 is most desirable?

MR. KUTIK: I'll object to the extent it's beyond the scope of this deposition, but you can answer.

A. Yes.

Q. And which installation or

which scenario do you believe to be most desirable?

MR. KUTIK: Same objection.

A. I believe the most desirable installation is full deployment over a five-year period performed by company labor.

Q. And how do you come to that conclusion, sir?

MR. KUTIK: Objection.

Q. Well, let me take a step back before we do that. Based on the five scenarios that are on page 9 of Deposition Exhibit 2, which of these five do you believe to be most desirable?

A. I would believe the scenario full deployment three-year installation, in other words, the second row down, to be the most desirable.

Q. Now, as I come across the columns, the most desirable scenario that you've identified is the most -- it has the highest deployment cost?

A. There was a word that

blanked out there.

Q. Okay. As I come across the full deployment three-year installation that you have identified as being the most desirable scenario on this page, the deployment cost column shows it to be -- that scenario to have the highest deployment cost, correct?

A. Yes.

Q. And in the next column over, the first year net income, it has the least effect on net, correct?

A. Yes.

Q. And if I keep coming across, it's not the worst, it's the -- it's the second to lowest effect on net in this column, correct?

A. No.

Q. No? What is this, what does the steady state net income --

A. It appears --

Q. -- presume?

A. Can you repeat the question he asked me?

Q. Yes. I'm sorry. It's

getting a little confusing here. As you come across the columns under the scenario that you've identified as the most desirable, I'm trying to understand where it ranks in the various analyses that are performed on this page, as you come to the steady state net income, years four to six where you said the greater the number, the more desirable the scenario, I said this isn't the lowest, but it's the second to the lowest on the page?

MR. KUTIK: Objection. Mischaracterizes his testimony. Go ahead.

A. The full deployment three-year installation is the second lowest for the steady state net income, years four to six.

Q. As we come across to the unlevered IRR, which one of the scenarios has the most desirable unlevered IRR calculation?

A. The aggressive inside meter, partial deployment, plus 111,000 outside

meters.

Q. And which one has the least desirable unlevered IRR?

A. The full deployment three years installation.

Q. And if we come across to the unlevered, net present value, 9.4 percent, 15 years column, which one has the most desirable result of that particular calculation?

A. The inside meters aggressive partial deployment, plus the 111,000 outside meters.

Q. And which one has the least desirable NPV calculation?

A. The full deployment three-year installation.

Q. As we come across to the payback, sir, which one has the most desirable payback calculation?

A. The inside meters aggressive three-year installation.

Q. And which one has the worst?

A. The longest payback is the full deployment three-year installation.

Q. So I'm somewhat confused as to what leads you to the conclusion that the full deployment three-year installation is the most desirable scenario on this page?

MR. KUTIK: So your question is?

Q. What is it about the full deployment three-year installation that makes it the most desirable scenario on this page?

A. My view, which is what you asked, that makes the full deployment three-year installation scenario on this page the most desirable in my view relies on factors that are not articulated on this page.

Q. And what would those factors be?

A. What I need to establish that -- and it appeared to me that you were primarily in your questioning comparing the full three-year installation deployment versus the inside meter aggressive three-year installation scenario.

Q. I wasn't doing any comparison whatsoever other than trying to get some sense from you as to what the relative ranking of these different scenarios were based on the outcome of the financial analysis that you and your team performed.

A. The reason that I'm -- that my opinion that the full deployment is the most desirable solution on this page is that any nonfull deployment solution, and let me speak to the aggressive full year deployment, that as we have spoken, the aggressive assumptions assume the best of all worlds for various cost factors which I believe are unrealistic. So any deployment short of full deployment in effect creates or would create two classes of customer in the Dominion East Ohio system. One would be if you were, on any partial deployment shown on Exhibit 2 page 9, if you happen to be endowed with an inside meter or an outside meter that just happened to be on a route where there

was predominantly inside meters, you would at the end of deployment be blessed with monthly meter readings, accurate monthly meter readings, dramatically reduced consecutive estimates. And if you happened to have a meter that was not part of any of these partial deployments, you would continue to get the quality of service that exists today that includes manual meter reading, subject to errors in that manual meter reading process, additional consecutive estimates, along with other company benefits of safety, the fact that to have a less than full deployment means that we would have to have two different meter reading systems maintained with two different databases in our customer Legacy system, that would all increase the possibility of mistakes being made as we try to service those customers on essentially two dramatically different platforms of service.

Q. Are those the factors then

that lead you to the conclusion that a full deployment three-year installation is preferable --

A. Those are the --

Q. -- based as scenarios as they are on page 9?

A. Of the scenarios on page 9, those are the factors that lead me to conclude that the full deployment three-year installation is the most desirable scenario.

Q. Are there any of those factors contained within your business case analysis that was presented to the steering committee?

A. No.

MR. KUTIK: Why don't we take a break?

MR. SAUER: All right.

(Recess taken.)

MR. SAUER: Mr. Kutik, I had sent you a couple of documents, one of which is discovery response to a 14th set question number 517 and I think attached to that is a very similar