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, Approval of an Alternative Rate Plan for its Gas Distribution Service, Approval to Change Accounting Methods, Approval of Tariffs to Recover Certain Costs Associated with a Pipeline Infrastructure Replacement Program Through an Automatic Adjustment Clause, and for Certain Accounting Treatment, and Approval of Tariffs to Recover Certain Costs Associated with Automated Meter Reading Deployment Through an Automatic Adjustment Clause, and for Certain Accounting Treatment.	Case Nos. 07-829-GA-AIR 07-830-GA-ALT 07-831-GA-AAM 08-169-GA-ALT 06-1453-GA-UNC

\- - -

PROCEEDINGS

before Ms. Christine M.T. Pirik and Mr. Scott Farkas, Attorney Examiners, at the Public Utilities Commission of Ohio, 180 East Broad Street, Room 11-C, Columbus, Ohio, called at 9 a.m. on Friday, August 1, 2008.

\- - -

ARMSTRONG & OKEY, INC.
185 South Fifth Street, Suite 101
Columbus, Ohio 43215-5201
(614) 224-9481/(800) 223-9481
Fax (614) 224-5724

APPEARANCES:

Jones Day
By Mr. Mark A. Whitt
and Mr. Andrew J. Campbell
325 John H. McConnell Boulevard
Suite 600
Columbus, Ohio 43215-2673

Jones Day
By Mr. David A. Kutik
and Ms. Meggan Rawlin
North Point
901 Lakeside Avenue
Cleveland, Ohio 44114-1190

Mr. Gene A. DeMarr
1201 East 55th Street
Cleveland, Ohio 44114

On behalf of The East Ohio Gas Company d/b/a Dominion East Ohio.

Vorys, Sater, Seymour and Pease, LLP
By Mr. W. Jonathan Airey
and Mr. Gregory D. Russell
52 East Gay Street
Columbus, Ohio 43216-1008

On behalf of Ohio Oil & Gas Association.

Bell & Royer Co., LPA
By Mr. Barth E. Royer
33 South Grant Avenue
Columbus, Ohio 43215-3927

On behalf of Dominion Retail, Inc.

Ohio Partners for Affordable Energy
By Mr. David C. Rinebolt
and Ms. Colleen Mooney
231 West Lima Street
P.O. Box 1793
Findlay, Ohio 45839-1793

On behalf of Ohio Partners for Affordable Energy.

APPEARANCES: (Continued)

Chester, Willcox & Saxbe, LLP
By Mr. John Bentine,
Mr. Mark S. Yurick,
and Mr. Matt White
65 East State Street, Suite 1000
Columbus, Ohio 43215

and

Mr. Vince Parisi
5020 Bradenton
Dublin, Ohio 43017

On behalf of IGS.

Mr. David C. Rinebolt
and Ms. Colleen Mooney
231 West Lima Street
P.O. Box 1793
Findlay, Ohio 45839-1793

On behalf of Ohio Partners for Affordable Energy.

City of Cleveland
By Mr. Robert J. Triozzi,
Director of Law
Ms. Julianne Kurdila
and Mr. Steven Beeler,
Assistant Directors of Law
601 Lakeside Avenue, Room 106
Cleveland, Ohio 44114-1077

On behalf of the City of Cleveland.

Janine L. Migden-Ostrander
Ohio Consumers' Counsel
By Mr. Joseph P. Serio,
Mr. Larry S. Sauer,
and Mr. Gregory J. Poulos,
Assistant Consumers' Counsel
10 West Broad Street, Suite 1800
Columbus, Ohio 43215-3485

On behalf of the Residential Consumers of the State of Ohio.

APPEARANCES: (Continued)

Ohio Attorney General's Office
Duane W. Luckey, Senior Deputy
Attorney General
Public Utilities Section
By Mr. Stephen A. Reilly
Ms. Anne Hammerstein,
Assistant Attorneys General
180 East Broad Street, 9th Floor
Columbus, Ohio 43215-3793

On behalf of the Staff of the Public Utilities Commission.

- - -

INDEX

- - -

- - -

INDEX (Continued)

- - -

- - -

Friday Morning Session,
August 1, 2008.

- - -

EXAMINER PIRIK: The Public Utilities Commission of Ohio has assigned for public hearing at this time and place Case Nos. 07-829-GA-AIR, 07-830-GA-ALT, 07-831-GA-AAM, 08-169-GA-ALT, and 06-1453-GA-UNC which is captioned in the Matter of the Application of the East Ohio Gas Company doing business as Dominion East Ohio for Authority to Increase Rates for its Gas Distribution Service and other Related Matters.

My name is Christine Pirik. Along with me is Scott Farkas. We are Attorney Examiners, and we have been assigned by the Commision to hear these cases.

At this time I would like to take appearances on behalf of the parties. On behalf of the company.

MR. KUTIK: Yes, your Honor. On behalf of the applicant the East Ohio Gas Company doing business as Dominion East Ohio, Jones day, David A. Kutik, K-U-T-I-K, North Point, 901 Lakeside Avenue, Cleveland, Ohio, Meggan, M-E-G-G-A-N, Rawlin, R-A-W-L-I-N; Mark A. Whitt, W-H-I-T-T, Andrew J. Campbell, address 325 John H. McConnell Boulevard, Suite 600, Columbus, Ohio; and Gene A. DeMarr, D-E-M-A-R-R, of East -- Dominion East Ohio, 1201 East 55th Street, Cleveland, Ohio.

EXAMINER PIRIK: Thank you.

MR. KUTIK: On behalf of the Ohio Oil and Gas Association, Jonathan Airey, Vorys Legal Counsel, 52 East Gay Street, and I have with me Greg Russell of Vorys.

MR. WHITE: If it may please the court on behalf of Interstate Gas Supply, Matt White from Chester, Willcox and Saxbe, 65 East State Street, Columbus, Ohio. I am here to make an appearance for John Bentine and Mark Yurick from Chester, Willcox & Saxbe and also Vince Parisi, IGS, 5020 Bradenton, B-R-A-D-E-N-T-O-N, Dublin, Ohio 43017.

MR. SERIO: Thank you, your Honor. On behalf of the residential -- excuse me, residential utility consumers of East Ohio Gas Company, Janine Migden-Ostrander, Consumers' Counsel, by Joseph P. Serio, Larry Sauer, and Greg Poulos, 10 West Broad Street, Suite 1800, Columbus, Ohio.

I would also like to enter the appearance of the City of Cleveland of Robert J. Triozzi, Director of Law, and Julianne Kurdila and Steven Beeler, Assistant Directors of Law, City of Cleveland, 601 Lakeside Avenue, Room 106, Cleveland, Ohio 44114-1077.

MR. RINEBOLT: On behalf of Ohio Partners for Affordable Energy, David C. Rinebolt, Colleen L. Mooney, 231 West Lima Street, P.O. Box 1793, Findlay, Ohio 45839.

MR. ROYER: Thank you, your Honor. On behalf of the Dominion Retail, Inc., Barth Royer, Bell and Royer Co., LPA, 33 South Grant Avenue, Columbus, Ohio 43215.

MR. REILLY: Thank you, your Honor. On behalf of the staff of the Public Utilities Commission of Ohio, Nancy Rogers, Ohio Attorney General, Duane Luckey, Section Chief, Anne Hammerstein and Steve Reilly, Assistant Attorneys General, 180 East Broad Street Columbus, Ohio 43214 -- 43215, excuse me.

EXAMINER PIRIK: Are there representatives here for the Neighborhood Environmental Coalition, that party?

Stand Energy?

Utility Workers Union of America?

We are ready for the company to call their first witness.

MR. KUTIK: Yes, your Honor. Our first witness, your Honor, we call Dr. Michael Vilbert.

\- - -

MICHAEL J. VILBERT

being first duly sworn, as prescribed by law, was examined and testified as follows:

DIRECT EXAMINATION

By Mr. Kutik:

Q. Please introduce yourself.

A. My name is Michael J. Vilbert, the last name is spelled with a V as in Victor I-L-B as in boy E-R-T.

Q. Doctor, do you have in front of you what's been marked for identification DEO Exhibit 9.0 and 9.1?

A. Mine don't have exhibit numbers on them but it's my testimony and the appendices.

Q. Exhibit 9.0 is your direct testimony, and Exhibit 9.1 is your supplemental testimony?

A. Yes.

Q. If I asked -- do you have any corrections or additions to make to your testimony?

A. I have one minor correction on page 2, it's lines 8 and 9.

Q. This is of Exhibit 9.0?

A. 9.0, yes. At the time I filed the testimony I had not previously testified before this Commission but since that time I have in a case for FirstEnergy.

Q. Doctor, if I asked you today the questions that appear in Exhibits 9.0 and 9.1, would your answers be the same as here in these exhibits?

A. Yes, they would.

MR. KUTIK: No further questions.

EXAMINER PIRIK: I will just go down the table and ask.

MR. AIREY: No questions.

EXAMINER PIRIK: No questions?

OCC.

MR. SERIO: Mr. Sauer.

MR. SAUER: We prefer to go last, your Honor.

EXAMINER PIRIK: I would prefer to have the staff go last, but I would ask Mr. Rinebolt if he has any questions.

MR. RINEBOLT: Certainly, your Honor.

- - -

CROSS-EXAMINATION

By Mr. Rinebolt:

Q. Good morning, Mr. Vilbert.

A. Good morning.

Q. If we could, let's refer to page 8 of your testimony and between lines 8 and lines 22 you have an explanation of why customers are advantaged by higher rates. To your knowledge, is Dayton -- or is Dominion East Ohio providing reliable and adequate service?

A. Well, two things, first, the -- you have misinterpreted what I say in this paragraph, I believe. The paragraph is not intended to say higher rates are a good thing. What it says is that setting the allowed rate of return equal to the cost of capital is in the interest of both ratepayers and the company. As far as whether or not Dominion is providing adequate and reliable service, I have no opinion on that other than I believe that they are, but I have not heard complaints one way or the other.

Q. So this is essentially kind of a theoretical overview of why we should have adequate

rate of returns for the company?
A. Yes. It's the essence of what cost of capital witnesses should be attempting to do is to estimate the cost of capital so that ratepayers and the company are treated fairly.
Q. All right, sir. Could we move to page 30 of your testimony where you list what list you have collected of comparable corporations. Just a question, is there a reason why -- it appears that Dominion Resources has much larger revenue than the other companies that you've picked on comparables. Could you explain to me why those companies which are clearly much smaller in terms of revenue are accurate comparisons for the purposes of this analysis.
A. First, we are setting the rate of return for Dominion East Ohio and not for Dominion Resources. Secondly, the sample companies are as close to true play companies whose line of business is providing gas distribution services, and I am trying to estimate the cost of capital for that line of business that Dominion East Ohio is -- engages in. And so the appropriate sample for that task is not a company as large as Dominion Resources but instead is as reflective as possible of the available sample

companies of Dominion East Ohio.

Q. Well, if you could turn to page 32, let's -- I have just a couple of questions about the nature of these companies. Do any of the companies that you selected as comparables purchase gas through an SSO auction process?

A. I am not sure whether they do or not.

Q. Does -- now, you indicated East -- Dominion East Ohio uses hedges as it procures gas; is that correct, or is it a misreading of your testimony? I think you may need to refer back to the chart on 30 to answer that question.

A. My memory of this discussion they do attempt to hedge, but I am not entirely sure I have that accurately in my mind.

Q. Well, traditionally is a hedge involved for the company that bids for supply through a wholesale auction like the SSO? I am trying to understand where a hedge would fit into that process.

A. As I understand, the SSO will be a new process that will go into effect prospectively in replacing the old process of the way they acquired gas, but in an auction process if the prices paid for the auction are deemed acceptable to the Commission, that would be the end of the story as I understand it.

Q. Okay. You discuss POLR risk, provider of last resort risk. What is the risk in your opinion in a scenario where all the gas costs can be passed through to the customers? If you have a duty to serve, they also have the ability to pass through the costs of providing that service so where is the POLR risk for the company?

A. In general POLR risk would come from a situation in which a supplier fails, the company is left to provide that supply, has to go to the market and to buy whatever resource it is, electric or gas in this case, and if it could not fully recover all of the costs of that process, that would be the risk. If instead you have an absolutely iron clad system in which that circumstance, if it were to occur, that the company would be fully protected in all circumstances, then there wouldn't be risk. But there's a pretty heavy assumption underlying that there would be no circumstances under which the company might not fully recover all its costs.

Q. Well, to your knowledge has an SSO provider ever failed to deliver gas to Dominion East

Ohio the last several years they have been running SSO?

A. I don't know.

Q. Okay. Do you know whether or not Dominion East Ohio has credit standards that protect it against the failure of an SSO supplier?

A. I don't know specifically, but it makes sense that they would have such standards.

Q. All right. One last question, do the other companies in your sample have bad debt trackers that allow regular adjustments for in these days increases in bad debt?

A. I was looking at some of these things last night, and I don't remember -- I think there was one or two that do. I don't remember which ones they are.

MR. RINEBOLT: Thank you very much, Mr. Vilbert.

I have no other questions, your Honor.

EXAMINER PIRIK: Thank you.

OCC.

MR. SAUER: Thank you, your Honor.

- - -

CROSS-EXAMINATION

By Mr. Sauer:

Q. Good morning, Dr. Vilbert.

A. Good morning.

Q. How are you?

A. Good.

Q. If you could turn to page 35 of your testimony. And do you see table 3 on page 35?

A. Yes.

Q. Are these the results of equity cost rate studies?

A. The results on the table are the results of my application of the risk positioning model of the DCF model of the conditions I have selected.

Q. And based on these figures, can you tell us how you arrived at an equity cost rate of 12 percent?

A. Well, I rely primarily on the long-term risk-free rate which are in the first three columns from the left. I also rely primarily on the gas LDC subsample companies because those companies have the fewest issues -- data issues that might affect the cost of that group. I also considered the kinds of things we discussed a few moments ago about Dominion

East Ohio relative to the sample companies and concluded that I believe that Dominion East Ohio is slightly less risky than the sample companies are on average. I also looked at the number in the DCF column and while I don't put a lot of weight on DCF I considered it in my analysis and the conclusion of all of those factors led me to believe that 12 percent was representative of what I believe the cost of equity should be for Dominion East Ohio at a 44.8 percent thickness which is important because it is more leverage, it has more financial risk than the sample companies do on average.

Q. And if I understood your answer correctly, did you say you were relying on the gas LDC subsample primarily?

A. Primarily for the cost of equity estimate.

Q. And did you say that you felt Dominion East Ohio had a slightly less -- less risk than the -- that subsample?

A. Than the sample as an average, yes.

Q. And what are the factors that you particularly are relying on when making a determination that DEO has slightly less risk?

A. I think I specify that in a page here so rather than from memory. The kinds of things that I'm talking about are on page 32 starting with question and answer 54, I lay out a number of things that are being proposed by the company in this proceeding and other aspects of the way they recover their rates and I believe that these measures would result in a lower cost of capital for the company going forward and I tried to recognize that in the recommendation I provide. I didn't quantify it in a sense for each one of these different characteristics and say each one of these are worth 10 basis points or 50 basis points. I tried to think of the packet of risk reduction characteristics discussed here and that's how I came up with the conclusion that they are relatively less risky.

Q. Now, would you agree that your DCF results indicate an equity cost rate below 12 percent?

A. I do agree. I don't rely on the DCF method because I believe that it has serious problems.

Q. So you do not believe that the DCF provides a good indication of the utility's equity cost rate?

A. That's too broad. I believe the DCF model is useful and is particularly useful if you believe that the industry you are evaluating is in a stable situation such that the underlying assumptions of the DCF model are fully met, but if you consider the gas LDC currently, it's hard for me to understand how you would conclude it's completely stable. You have natural prices that are fluctuating dramatically. We have average customer use is declining over the last few years. We have the possibility of carbon regulation coming down the road and the effect not only on natural gas usage in homes but also on natural gas usage by the electric utility industry. There is just a lot of things that are going on right now that convince me that relying on the DCF model which requires a stable industry is not a reasonable assumption.

Q. Under that criteria you just spoke about can you give me an example of what you would consider to be a stable industry?

A. I should add to the last answer, to that I do use a DCF model, so I do pay attention to it. Right now, it's hard to point to a regulated industry in the United States that's -- and it's not too hard to think about every regulated industry and recognize that there are significant issues in all of them, electric industry, natural gas industry, the water industry which is facing infrastructure replacement that pipes are over 100 years old, decreasing water quality, safety standards. All of those things say that you need to be extremely cautious when applying the DCF model under the current circumstances.

Q. One of the items you identified was the volatility of the natural gas prices. Does DEO recover their -- the cost of their gas through a rider?

A. I think, again, these are some of the issues that are described in that question 54, the process -- the getting out of the merchant function, the process by which they recover their gas costs are evolving. They now have the bad debt or proposed bad debt rider. Those are the kinds of things in the past when natural gas prices varied dramatically and people didn't pay their bills or there were differences between what they were allowed and not allowed. Those are the kind of things that were affecting the risk of natural gas volatility.

To the extent DEO has removed those kinds of risks, that's one of the reasons why I believe their cost of equity is a bit lower.

Q. Now, I think you also mentioned average customer use is declining as another factor that affects the stability of the company?

A. The natural gas distribution industry or natural gas consumptions I have -- I don't know if it's for DEO particularly but for the industry in general average customer consumption has been declining for the last five or six years or so, 2 percent a year, something like that.

Q. Are you familiar with the company's rate design -- the rate design in the company's application?

A. I am not familiar with it but I -- my memory is they want to go more to a more straight fixed variable type arrangement, but I am not familiar with what they filed.

Q. Well, the company's application, they asked for a small customer charge in the neighborhood of $5.70 and then a decoupling rider, would the utilization of a decoupling rider stabilize the concerns about reduction in average use per customer?

A. Certainly it's an assisted -- it helps in that area. It depends on the specifics of the decoupling mechanism, how -- how it's formulated, what it really covers.

Q. So if you only use the DCF model as a check, is it that you rely primarily on the capital asset pricing model or the CAPM?

A. Yes, that's correct.

Q. And the CAPM you call the risk positioning model; is that correct?

A. The CAPM is a subset of the risk positioning model. There is also the empirical CAPM which is an empirical as opposed to a theoretical model.

Q. And, now, you note that in -- in I think it's table 3 you note that you used a short-term risk-free rate of 4.1 percent; is that correct?

A. Yes.

Q. Do you know what that rate would be today?

A. It's around 2 percent, something like that, maybe a little less.

Q. And if you redid your CAPM calculations using today's rate, 2 percent or something less, would those results be lower today?

A. With the caveat that everything else remains the same, then if I use an intercept that was 2 percent lower or 2-1/2 percent lower, whatever, the numbers would be lower, but whenever you do these things, you have to -- you have to determine whether the Betas have changed, whether the capital structures have changed, so simply observing that interest rates are down while in general it would lead to lower cost of equity, you cannot conclude that without doing the analysis.

Q. Do you know if the Betas have changed?

A. I know that if you -- if you were to produce a table of gas LDCs' Betas for the last five or six years, what you would observe is the average Beta sample for the company has increased dramatically over the last five years. Whether it has changed since the time I filed my testimony I don't know.

Q. Has the capital structure changed?

A. I haven't done the analysis.

Q. And you also used the long-term rate of 5.1 percent?

A. Yes.

Q. And do you know what the current rate on long-term treasury bonds is today?

A. Yes. Yesterday it was 4.65. I think this morning's it's down a little bit, 4.59 or something like that.

Q. And, again, if you redid your CAPM using the long-term treasury bond rate, would your CAPM results be lower?

A. The answer is the same as previously, the conditional everything will remain the same, yes, it would reduce the cost of equity.

Q. And looking at your long-term model, you use an equity risk premium of 6.5 percent; is that correct?

A. Yes.

Q. In Appendix C in your direct testimony you discuss your equity risk premium?

A. Yes.

Q. Can you tell us exactly how you arrive at the 6.5 percent?

A. Well, I should preface this by saying the market risk premium is a topic that has generated a lot of debate over the last five or so years. So it's highly controversial. In the past it used to be the case that people looked at realized rates of return on the U.S. stock market, compared it to yields on government treasury bonds which are -- or bills which are the measure of the risk-free rate and said that that is the best estimate that we can have of the market. That's called the realized rate of return. So I look at realized rates of return and this is published by Ibbotson in the Morningstar Yearbook. You can look it up back to 1926.

I also consider though other things besides realized rates of return. There are many articles out there about the market risk premium based upon theoretical constructs of what the market risk premium should look like. And those models I should say were largely generated by the fact that during the tech bubble you remember the stock market started going off -- up like crazy and there was even articles that said 30,000 for the Dow Jones. And people could not understand how the market could be so high if the risk premium was still 6 or 8 percent, whatever the realized rate of return was.

And so models were developed and came out and said the market risk premium must have fallen to 1 or 2 or 3 percent. Now, to understand that concept, you have to realize that the present value of future cash flows is a function of the discount rate. If the discount rate is higher, the value is lower. If the discount rate is lower, the value is higher. And the market risk premium is essentially the discount rate, and the model said the market risk premium must have fallen.

I have looked at those models, and a lot of them have estimates of market risk premium of 3 percent or lower. I reject that because today if you look at a BBB-rated bond, a utility bond, a BBB-rated bond, a very low risk instrument, it's spread over the treasury that we just quoted you earlier, 4.65, is 260 basis points as of yesterday. So a market risk premium of 300 basis points says a bond is almost as risky as the market and that makes no sense. So a long way of saying I looked at all those articles, but I don't put much credence in them if they are very low.

There are two other approaches I looked at. I considered the building block approaches by Ibbotson and Chen which is an attempt to put together what the risk premium should be going forward based upon an analysis of how the return was provided on equities in the past, things like dividend yield, capital gains, inflation, risk-free rate were all added together, and you put up -- you build the blocks that way.

The fourth thing I looked at were surveys by -- of executives and of financial professors and I considered all of that information and believe -- and have believed for some time that a 6-1/2 percent market risk premium over long-term government bonds is a good estimate in market risk premium. It could be higher, it could be lower, but that's my estimate and that's how I arrived at it. I should say the realized rate of return over 6-1/2 or it has been in the past, building block approach comes out about 6-1/4 or so, so my number is in the ballpark of these -- these areas. It's higher than the models, many of them, but I don't believe 3 percent is irrational.

Q. Do you know how many studies you relied on when you provided the 6.5 percent?

A. There's probably 10 or 15 listed in Appendix C. I know there are many, many more that I haven't listed, but as I say, if a study comes out that's in the same neighborhood as these ones that are 3 percent or less or 4 percent or less, it doesn't seem to add anything to the discussion to have one more of those listed.

Q. Are there studies that agree with your 6-1/2 percent range?

A. There are studies in the past that have been higher than my 6-1/2 percent range. The staff actually uses a 6-1/2 percent range. I have talked to academics such as Professor Meyers, Stewart Meyers at MIT who writes -- really Meyers and Allen, asked him what he thought about the 6-1/2 percent. He agrees it's about right. I didn't just pull it out of the air. I thought about it, carefully gauged it against everything I could find, and it seems like a reasonable number.

Q. In the Appendix C can you point me to the studies that do have the market risk premium of 6-1/2 percent you are relying on?

A. You are asking me for one that is exactly 6-1/2 percent?

Q. In that range, not exactly.

A. Well, as we said, the realized rates of return are higher than that so that's part of it. The Ibbotson and Chen study I mentioned, the 2003

Ibbotson and Chen building block approach, comes out in the Appendix C it is 5.9 percent. The current edition of the -- or the 2007 edition of the Morningstar Ibbotson version was 6.35 percent, the 2008 version of that was 6.23 percent. The first study by Professor Welch which was a survey was 6.7 percent. The second survey a year later was 5.5 percent which shows you how rapidly the studies -- or the surveys can change.

Q. When was Professor Welch's first survey done?

A. Just one second. I will tell you. The first study was in 1998, second one was 1999. He got a more recent one, and the numbers are, I think, 5 to 5-1/2 in that study as well.

Q. Is there any --

MR. KUTIK: Excuse me, your Honor. Excuse me, your Honor. I believe Dr. Vilbert before he was interrupted by the last question was going through the studies that Mr. Sauer had asked for in the previous question, so if he could be allowed to finish if he hasn't finished.

EXAMINER PIRIK: Mr. Vilbert, were you done with your answer? Would you like to --

THE WITNESS: Well, there are other studies I list in here that are higher than 6.5. The point that I guess I would like to make is that I didn't rely on any single study. I relied on the body of knowledge about the MRP that I could find, and I tried to consider all of that in arriving at a 6.5 percent MRP.

Q. I didn't mean to interrupt you, Doctor. I apologize for that.

A. No, I'm fine.

Q. Is there somewhere in Appendix C where you summarize the results of the various studies that would document the 6-1/2 percent that you have come up with?

A. I don't think in the way that you are suggesting in your question. The thought process I went through is I tried to lay it out in Appendix C in the topics that's identified at MRP in that appendix. And it starts -- it's the section B Market Risk Premium of Appendix C beginning on page C-3, and it goes through a list of the lines of research that I rely on in arriving at a conclusion on the MRP. But there's no table that lays them all out what they recommended in each one.

Q. Okay. And these aren't the only studies that estimate a market risk premium?

A. No. There are many, many studies on the market risk premium. As I said, it is a highly controversial topic right now. It's subject to enormous debate and there is no consensus on what the number is. And there is not even a consensus on how the best way to estimate it might be. So it requires of every analyst doing this a measure of judgment.

Q. Was there a method you used in picking these studies that you ultimately relied on?

A. Yes. First of all, I should also note that one of the reasons that the market risk premium gets so confused in proceedings like this one is that analysts sometimes are not careful in specifying what they mean by the market risk premiums. For example, you can record a market risk premium relative to treasury bills, 30-day treasury bills which are very low risk and have generally very low rates of return or treasury bonds longer term which have generally a higher yield. So the risk premium you use for those two situations as I did in my testimony for short-term, I use a different market risk premium than I do for the long-term. It's important, No. 1, to keep that in mind.

The second aspect of it there is geometric mean versus arithmetic mean, and I don't want to get too far down the road on that but an -- a geometric mean is a measure of performance, and an arithmetic mean is a measure you use in a CAPM on an expected basis. So when you talk about market risk premiums, you have to focus on which of those measures you are talking about, short-term or long-term, geometric, arithmetic.

The way I picked the studies was through reading a lot of these studies over time, and the ones that seemed to me to be illustrative of the thoughts underlying the current strand of research, I included representative articles in that line of research, generally the ones by the most prominent professors or the earliest ones in a particular line of research or the ones that reached the most recent conclusion about various issues.

Q. And does -- your sample of studies then is there a balance between short-term and long-term, geometric versus arithmetic issues?

A. Well, for purposes of the MRP for CAPM I disregard geometric because it's inappropriate to use in the capitalistic pricing model for setting the rate of return on equity, so I focus on arithmetic numbers. And as far as the focus between long-term and short-term estimates, most market risk premiums in the past were relative to treasury bills. More recently people focus relative to bonds. I am not sure there is -- I didn't specifically have in mind trying to balance that aspect of the survey.

Q. Going back to table 3 on page 35, you use an equity -- in your short-term model you use an equity risk premium of 8 percent.

A. Yes.

Q. And, again, in Appendix C you discuss your equity risk premium short-term?

A. I describe market risk premium in general. The way to get between the short-term and the long-term is to know that on average the yield difference between long-term government bonds and 30-day treasury bills has averaged 150 basis points over the last -- since about 1926. And so that's the difference between 6-1/2 and 8 is the 1-1/2 percent.

Q. So if I understand your method then, you determine the long-term market risk premium first, and then the short-term market risk premium fell out from that determination?

A. Not -- not precisely. What I do is try to figure out what I believe the market risk premium should be as a general rule and then the difference between the long-term and the short-term is a 150 basis points, so I consider all the studies, the market risk premium issues, and then if I peg the long-term at 6-1/2, that forces the short-term to be 8 percent. If I peg the short-term at 8, it forces the long-term to be 6-1/2. What I did I focused on the long-term.

Q. Did you rely primarily on the historic -- historic equity risk positioning being premiums from the annual Ibbotson study when you arrived at your long-term equity risk premium of 6-1/2 percent?

A. No. For many years the Ibbotson numbers, the realized rate of return was greater than 6-1/2 percent, and I have testified to 6-1/2 percent for a long time. It turns out lately the realized rates of return have declined, so they are close to 6-1/2 percent, but I have been using 6-1/2 percent for many years.

Q. Are you familiar with the 2002 Journal of Finance Article by Fama and French on the equity risk premium?

A. Yes. I haven't read it for a while, but I am familiar with it.

Q. Did you rely on that particular study in arriving at your equity risk premium?

A. It was one of the studies I have considered.

Q. Did you cite any other work by Fama and French in your testimony?

A. I believe I did. They have done a number of things lately. In fact, there's a whole line of research sponsored by Professors Fama and French on a replacement for the capital asset pricing model and that line of research hasn't gotten in general to regulatory commissions, but they are leading proponents of what's called the Fama French Model which is an expansion of the CAPM. And part of the reason that I am raising this point is they recognize that the CAPM as I do and ECAPM has some issues, and it needs to be adjusted.

Q. When you said they, you mean state commissions?

A. When I said they in that particular sentence, I meant Fama and French recognize that the tests of the CAPM were not completely satisfactory, and so they devised a new model called the Fama and French Model that brings in instead of one factor, CAPM is based on one factor, the market, their model has three factors or four factors in the most recent version of it, so you have four Betas and four market risk premiums and so forth.

Q. And the work you are discussing by Fama and French, is that subsequent to the 2002 article that I had asked you about previously?

A. It's contemporaneous and part of the reason was in my judgment they were explaining in part why they thought another model was necessary.

Q. Would you consider Fama and French to be well known and respected -- respected academics in this field?

A. Yes.

Q. And if you know, did Dr. Woolridge cite and use an equity risk premium from Fama and French in his testimony?

A. Dr. Woolridge had a table that I think it was his Exhibit No. 7 where he listed the way he approached market risk premium and he listed articles by a number of scholars and I believe Fama and French were included in that list.

Q. Do you know -- do you recall what the equity risk premium derived by Fama and French in their study was?

A. My memory is 2.4 or something like that. It's less than 3 percent which takes me back to my point about the yields on BBB bonds. If BBB bonds have a spread over treasuries of 2.6 percent today, the market risk premium less than that is nonsense.

Q. Subject to check would you agree that the results of Fama and French study was 2.55 percent to 4.23 percent?

A. 2.55?

Q. To 4.23 percent.

A. I just thought it was 2.4 from my memory. I haven't read it for a while.

Q. Subject to check?

A. Fine.

Q. Is it your position that the research by Fama and French is inaccurate or unreliable?

A. Which research are we talking? Are you still talking about the --

Q. The 2002 Fama and French study.

A. No, I wouldn't say that. Instead I would say that every time you do this kind of analysis, inherent in the papers are a series of assumptions that drive the results, and if you change the assumptions, you can change the results. I mean, this is why I preface this whole discussion with the comment that this whole area is so controversial because it depends completely or very heavily on the assumptions you make in arriving at your models.

Q. Are you familiar with Dr. Jeremy Siegel?

A. I was teaching assistant for Jeremy Siegel at Wharton, so yes.

Q. And would you consider Dr. Siegel to be a well known and respected academic?

A. Absolutely.

Q. And you personally respect Dr. Siegel's work?

A. Sure. I know his estimates in market risk premium are lower than the ones I use, but as I said, I evaluate a lot of things when I come up with my numbers.

MR. SAUER: May I approach the witness, your Honor?

EXAMINER PIRIK: Yes.

MR. SAUER: I have a 13-page --

MR. KUTIK: May I see what he is going to give the witness?

MR. SAUER: I have a 13-page article by Dr. Siegel on equity risk premiums I would like to have marked as OCC Exhibit 1.

EXAMINER PIRIK: The document will be so marked.

(EXHIBIT MARKED FOR IDENTIFICATION.)

Q. Dr. Vilbert, are you familiar with this particular article by Dr. Siegel?

A. No, I haven't seen this one before.

Q. If you could turn to page 10 at the top, there is a page 10 of the fax. I think it's actually got a page 70 at the bottom. There is an article that was in Financial Analysts Journal in November, December of 2005.

Could you read the last sentence in the conclusion.

MR. KUTIK: Objection, your Honor. No foundation laid with respect to this article.

EXAMINER PIRIK: Mr. Sauer?

Q. Dr. Vilbert, you said you are familiar with Dr. Siegel's work?

A. I have not reviewed this article before, but I am familiar with Dr. Siegel's work.

Q. And this is an article on equity risk premiums, correct?

A. Yes.

Q. And you said that Dr. Siegel typically his -- his estimates of equity risk premiums are lower than yours?

A. Yes.

Q. And would it surprise you that in this article his conclusion is that that "although there are good reasons why the future equity risk premium should be lower than it has been historically, projected compound equity returns of 2 to 3 percent over bonds will still give ample reward for investors willing to tolerate the short-term risks of stocks"?

MR. KUTIK: Same objection, your Honor.

EXAMINER PIRIK: Mr. Sauer? Do you have -- I mean, you need to build a foundation before you can start questioning the witness on an article that he has never seen. Do you have further questions on foundation?

MR. SAUER: I am just asking Dr. Vilbert if this is a consistent conclusion with other articles that he's seen from Dr. Siegel.

MR. KUTIK: My problem, your Honor, the basis of my objection he is asking him in direct reference to the article which Dr. Vilbert hasn't seen, so he hasn't laid a proper foundation to ask the question.

EXAMINER PIRIK: I agree with that, and I will sustain the objection with regard to reading this document into the record. If you want to ask the witness generally whether or not he understands or knows what Mr. Siegel's position is on these items, that would be fine and then if you have some other -- someone who actually has read the article and is familiar with the contents of the actual article.

MR. SAUER: Thank you, your Honor.

Q. Did you include any of Dr. Siegel's studies in your analysis of market risk premium?

A. I read his book "Stocks for a Long Run" and I am familiar with Dr. Siegel's work in general. I know that he is one of the proponents of a much lower equity risk premium going forward. He's probably -- by statue he is probably the leading proponent of a lower risk premium. However, I have just noted one thing on this article that you reference where it says 2 to 3 percent in the back, that's a geometric rate of return which takes me back to you have to be very careful when you are looking at these numbers to be sure that you are talking about the same thing because they say it's a compound root. That's geometric.

MR. SAUER: Your Honor, I would move to strike the last answer. If Dr. Vilbert isn't going to answer any other questions about this document, then I would suggest that the last reference that he made should be stricken.

EXAMINER PIRIK: Mr. Kutik?

MR. KUTIK: I believe he was responding to the question about Dr. Siegel's work.

EXAMINER PIRIK: I believe he was too. The motion to strike will be granted.

MR. SAUER: Thank you, your Honor.

Q. Dr. Vilbert, I think you also cite the survey results of Professor Ivo Welch regarding the equity risk premium; is that true?

A. Yes.

Q. And do you recall what the equity risk premium is indicated by that survey?

A. Well, there has been a series of those surveys. The first one is 6.7 percent, the second one is 5.5 percent, and the more recent ones are in the range of 5 to 5-1/2 percent and my memory is that's an arithmetic mean.

Q. The first survey that you reviewed to 6.7 percent, when was that survey done, sir?

A. We went through that a minute ago. I believe that's 1999 or '98, I don't remember which one. It's in Appendix C if you want to take the time to go back and look.

Q. Are you familiar with how Professor Welch conducts that survey?

A. Yes. In general terms he sends out a survey to finance professors around the country who -- and asked them a series of questions about their belief about the market return in the future and the market risk premiums and a number of other questions.

Q. Do you know how many academics responded to the survey?

A. Not off the top of my head.

Q. Is that important?

A. Is what important?

Q. The number of academics who respond to a survey.

A. Well, in -- I am not an expert in survey literature but one of the things that is important when you send out a survey is the percentage of participation because otherwise you are not getting a representative sample of -- of the group that you are trying to survey.

Q. Are you aware that Duke University in the CFO Magazine conducts surveys of CFOs?

A. Yes.

Q. And have you looked at those surveys, sir?

A. On occasion I have, yes. John Graham is the -- is the guy who does the surveys.

Q. And typically would you expect CFOs or chief financial officers to rely or to use equity risk premiums in their day-to-day decision making?

A. I know that CFOs or anyone doing a financial analysis needs a hurdle rate to make judgments about capital budgeting and so forth and part of that would be market risk premium.

MR. SAUER: May I approach the witness, your Honor?

EXAMINER PIRIK: Yes. Could you provide

the document to Mr. Kutik also first?

MR. SAUER: Yes. I have a copy of Duke University CFO Business Outlook Survey Second Quarter of 2008 I would like to have marked as OCC Exhibit 2.

EXAMINER PIRIK: The document shall be so marked.

(EXHIBIT MARKED FOR IDENTIFICATION.)

Q. Dr. Vilbert, are you familiar with this survey?

A. I have never seen it in this form. I have seen it in -- published in the CFO Magazine. They typically will publish a summary of these things, but I have never seen the underlying survey itself.

Q. The survey you are familiar with, is the same information included? Questions such as what appears on page 1, "are you more or less optimistic about the U.S. economy compared to the last quarter?" And then the number of respondents and the percent of their -- I mean, is that a familiar content of information that you have seen in this survey?

A. As I say, the articles that get published in the magazine, the CFO Magazine, are summaries and discussions of these things. They don't give you this kind of information most likely because people would be completely bored by it, but the articles themselves summarize the results and salient issues.

Q. And if you turn to question 11, the -- would you agree that the second --

EXAMINER PIRIK: Could you hold on a minute. He is not there. Neither are we.

MR. SAUER: Okay.

EXAMINER PIRIK: Are you there?

THE WITNESS: Well, I am not sure I can see -- there is --

Q. Are you there yet, sir?

A. Yes, sorry.

Q. And question 3 is addressing 10-year treasury bonds.

MR. KUTIK: I'm sorry. I thought we were at question 11.

MR. SAUER: Question 11.

EXAMINER PIRIK: Yes.

Q. "On June 3, 2008, the annual yield on 10-year treasury bonds was 4 percent."

MR. KUTIK: Objection. No foundation. The witness says he hasn't seen this survey. He's talked about he is familiar with articles that cite this but there has been no connection to this question and the survey and his familiarity.

EXAMINER PIRIK: Mr. Sauer?

Q. And, again, are you familiar with --

EXAMINER PIRIK: No. I am asking you for a response to the objection.

MR. SAUER: Dr. Vilbert is an academic in this area. He's familiar with 10-year treasury bonds and the objection of those, those rates. This data is just a compilation of what -- what respondents to their survey have indicated their expectations are for these rates. I am just asking him if that is indeed what their -- what their survey showed.

EXAMINER PIRIK: Are you finished with your response, Mr. Sauer?

MR. SAUER: I think so. I just want to make sure this is information that's consistent with data he has seen in other articles that are on this very topic.

EXAMINER PIRIK: Mr. Kutik?

MR. KUTIK: Yes. Before he is allowed to ask the witness specific questions about a document, he must demonstrate, A, what the document is to the testimony of the witness. He has not done that. He had -- especially given the fact Dr. Vilbert has not seen this survey in this particular form.

EXAMINER PIRIK: Mr. Sauer, I agree with Mr. Kutik. I do not see where the foundation is for this document.

Q.   Dr. Vilbert, you said you were familiar with the CFO studies, and you have seen those in articles?

A.   As I say, I have seen summaries in the CFO magazine of the results of these surveys, but I have not seen this kind of detailed document underlying it.

Q.   And what exactly have you seen in those articles?

A.   As I recall, these articles attempt to summarize the basic results of the sample and what -- what this -- what they believe to be the highlights of this information in a summary form.

Q.   And is one of the results of the sample expectations of the yield and the annual yield on 10-year treasury bonds?

A.   I don't remember specifically which of the data -- whether it was a 10-year or some other treasury bond or what but in general summary

information about various economic parameters in the market, GDP growth, bond yields, that sort of thing. I don't remember specifically whether 10 was one of the bonds reported or not.
Q. Are you familiar with why they would use a 10-year annual yield versus some other time frame?
A. 10-year bonds, some people believe they should become the standard for measuring government bond yields because they have a consistent trading pattern wherever, for example, the long-term bonds, the 30-year bond wasn't traded for a while. So some people argue that the 10 ought to be the standard bond which is, I guess, why they didn't use it.
Q. Do you agree with it?
A. I use 20 in the work because it's a more representative of a long-term bond, and it's the one that's representative of the 150 basis points that I am talking about.
Q. You rely on 20, but do you use 10 in your analysis, 10-year treasury bonds in your analysis as well?
A. I don't use the 10-year treasury bond for anything other than reporting it as part of the yield curve demonstrating whether the yield curve -- this

is in Exhibit 9 of your testimony, table No. 9. I just use it to show the current shape of the yield curve whether it's upward sloping or downward sloping, but I don't use it for any other purpose.

Q. And what page does table 9 appear, sir?

A. It's in my workpapers at the end. It's Exhibit MJV-9 and panel A is a display of interest rates on U.S. government securities with different -- with different maturities. The 30-day treasury bill is on the far left column and all the way out to the long-term which is a 20-year bond.

Q. And the 10-year is also included in your --

A. Yes. I report the 10-year as I said.

Q. And, again, looking at question 11 in this survey, it is -- the survey is an expectation of what the yield on 10-year bonds would be; is that correct?

MR. KUTIK: Objection.

EXAMINER PIRIK: Objection sustained.

Q. Do you understand what the -- what the survey is asking for in question 11?

MR. KUTIK: Objection.

EXAMINER PIRIK: Objection sustained.

Q. Now, Dr. Vilbert, I want to ask you some questions about your ECAPM calculations. Would you agree that in your ECAPM --

EXAMINER PIRIK: Mr. Sauer -- Mr. Sauer, before you get into that I think I am going to take -- we are going to take a 10-minute break right now, and then we will come back on.

MR. SAUER: Thank you, your Honor.

(Recess taken.)

EXAMINER PIRIK: Mr. Sauer.

MR. SAUER: Thank you, your Honor.

Q. (By Mr. Sauer) Mr. Vilbert, again, I want to ask you some questions about your ECAPM calculations.

A. Yes.

Q. Would you agree that in your ECAPM calculations you adjust the intercept term and risk term by an Alpha value?

A. Yes.

Q. And would you agree that this is done because the empirical studies of the CAPM you cite have found that the security market line or SML is less sloped than theory would suggest?

A. And the intercept is higher, yes.

Q. And that means that the returns for low Beta or companies with Beta of less than 1 are higher than projected by the CAPM?

A. Yes.

Q. And the returns for high Betas, companies with Betas of greater than 1, are lower than projected by the CAPM; is that correct?

A. Yes.

Q. Now, did you use Betas from Value Line?

A. Yes, I did.

Q. And would you agree Value Line adjusts Betas to reflect the fact that Betas tend to regress to 1 over time?

A. Yes.

Q. And would you agree the Betas adjustment procedure involves an adjusted Beta of 1.67 historic Beta plus a .33?

A. Actually Value Line uses a .35 in their analysis and then rounds the Beta estimate to the nearest .05 but the approach is similar to your suggestion.

Q. And did any of the studies you cite in Appendix C use Value Line Beta estimates?

A. No, but that question completely misses the point what the studies are doing. It doesn't matter who -- who calculates the Betas or reports the Betas. The issue is whether the Beta and the security market line are an accurate reflection of rates of return.

Q.   Would you agree by adjusting the Betas you increase the expected return of the low Betas, Betas again of less than 1?

A.   Yes. But I think this is a point where it would be useful to look at page 24 of my testimony to provide a distinction between adjusting Betas and ECAPM. On page 24 there is figure 2 labeled "the Empirical Security Market Line" and if you look at the graph, what you see is a dark line upward sloping that says "CAPM Security Market Line" and then there is a dotted line labeled the "Empirical Relationship." Notice that they cross at a point that it's on the X axis or the risk-free axis. The horizontal axis, the Beta axis, at 1, a Beta of 1 which is the market return so any Betas less than 1 as you said, the Empirical relationship says it has a higher rate of return than CAPM says and vice versa for high Betas.

Now, the point I am making to get to your question is notice that if I adjust the Beta, all I am doing is moving left and right on the horizontal axis. But that's -- the effort is just to get the Beta estimated properly for the company. Once you have the Beta estimated properly you need to go to the proper line to get the return on equity estimated properly. So these are two different corrections independent of one another.

Q. And does adjusting the Betas have the same effect as using ECAPM?

A. No. That's what I just went through. In fact, just as a point of -- point to notice the articles I cite on table C-1 in my Appendix MJV C-1, those articles were written and published at a time that the work of Marshall Bloome, Professor Marshall Bloome, also worked for him by the way, in 1971 those articles post-date his work and had adjusted Betas been the explanation they would have said so, but it's not the explanation.

Q. Now, in your analysis you use what you call an after tax weighted average of cost of capital; is that correct?

A. Yes.

Q. Or ATWACC, is that okay?

A. I call it the ATWACC. It's easier than what -- spelling out the letters.

Q. Okay. Would you agree that in this ATWACC analysis you use a two-step procedure?

A. Two-step procedure in what sense?

Q. The first step measures a cost of equity; is that correct?

A. Yes.

Q. And a second step makes a financial risk adjustment based on the difference between the market value capital structures of the proxy group and the book value capitalization applied for ratemaking purposes?

A. You skipped a couple of steps. The -- after I estimate the cost of equity using either the DCF model or the capital asset model or the risk position model, I calculate the samples, average ATWACC which is for every company in the sample I calculate their average overall cost of capital, take the sample average of that, and then apply that sample average to the rate base. And I report a return on equity that keeps the ATWACC constant and recognizes that in order to do that the determined equity must change. That's what you are calling the financial risk adjustment as I do as well.

Q. And if you know, in how many jurisdictions have you presented rate of return testimony that incorporated your ATWACC methodology?

A. In every proceeding that I have ever testified with the exception of the FERC, Federal Energy Regulatory Commission, I present the ATWACC methodology.

Q. And with respect to your ATWACC methodology, can you name any state regulatory commission which has adopted this approach?

A. To my great regret none has yet adopted it but I remain optimistic.

Q. Would you agree that your analysis in this case the financial risk adjustment adds about 200 basis points to your equity cost rate?

A. The difference between the raw -- how to say this, the difference between the sample average estimated ROEs based on their capital structures and the risk adjusted -- financially risk adjusted on risk of equity for Dominion varied by methodology. It ranges probably as much as 200 basis points. But that's in part because Dominion's equity fitness was relatively thin in 44.8 percent. In fact, the staff recognizes that as well and makes an adjustment so not adjusting for financial risk would not be appropriate.

Q. So if the Commission in this case would not adopt the financial risk adjustment, then would your equity cost rate results be lower by about 200 basis points?

A. If the Commission were to look at returns on equity that estimated from the sample with no consideration in differences for financial risk, the estimates would be lower. I am not exactly sure if it's 200 basis points or some other number, but it would be lower but that would be apples to oranges.

MR. SAUER: Your Honor, may I approach the witness?

EXAMINER PIRIK: Yes.

Q. Dr. Vilbert, I have an excerpt from your testimony in a California-American Water proceeding filed in May 1 of 2008. And --

EXAMINER PIRIK: Could you provide the witness a copy, please?

MR. SAUER: Yes, I will.

EXAMINER PIRIK: Before questions?

MR. SAUER: Can we have this document

marked as OCC Exhibit 3?

EXAMINER PIRIK: I mean, we have two separate documents, correct?

MR. SAUER: They are excerpts from the same testimony so they should be stapled together.

EXAMINER PIRIK: They should be stapled together?

MR. SAUER: Yes, they should be stapled together.

EXAMINER PIRIK: One document, okay. So the document will be marked OCC Exhibit 3?

MR. SAUER: Please.

(EXHIBIT MARKED FOR IDENTIFICATION.)

Q. And, Dr. Vilbert, are you familiar with the document that I have just handed you?

A. Yes.

Q. And can you tell me what that document -- what it is?

A. This is the most current cost of capital proceeding in California for the water utility. In particular I was the cost of capital witness for California-American Water Company.

Q. And this is an excerpt from your testimony in this case?

A. Yes. It appears to be.

Q. And if you will, Doctor, do you remember what your recommended rate of return or equity cost rate was in this proceeding?

A. I remember two things and I am not sure exactly but I think it was 12 percent but if you look at the numbers on this page --

MR. KUTIK: Which page, Doctor?

THE WITNESS: I'm sorry. It's page labeled -- it's table 1.

Q. Okay.

A. It's page 30 of 35. It's the last page on the first handout to me. You will note that I use a gas LDC sample as a check on the water sample because the water sample consists of very small companies, and if you look at the water sample results, you will see that they are very high, and I think that in my sense made me believe that the water sample was not reliable, so I relied on the gas LDC sample and I believe I recommended a 12 percent rate of return on equity with a 42 percent equity thickness so even less equity than here.

Q. Did you use the same ATWACC methodology in that case as you did in the DEO case here?

A. Yes.
Q. And do you recall what the financial risk adjustment was in the California case?
A. Relative to the sample equity estimates without adjustment for financial risk?
Q. Yeah.
A. I don't remember how much it was different.
Q. Subject to check would you agree that the adjustment for financial risk added approximately 400 basis points to your equity cost rate results in this case?
A. I don't remember.
MR. KUTIK: I'm sorry. When you say this case, counsel, are we talking about the water --
Q. In the California water case.
A. I don't remember sitting here right now how big a difference. I wasn't focused on that case. I was focused on this case.
Q. In the California-American Water case did you also use the ECAPM approach?
A. Yes. The table 1 that we were just looking at you can see that it looks pretty similar to the table that you referred to on page 30 of my

testimony. It's exactly the same approach.
Q. And in the California case --
MR. SAUER: -- could I have that last answer reread, please.
(Answer read.)
Q. And, Doctor, when you said page 30, did you really mean page 35 in the DEO testimony?
A. Yes, thank you. It is page 35 of the current document.
Q. Thank you. And in the California-American case did you use Value Line Betas?
A. Yes.
Q. But would you also agree that in your application of the ECAPM in the California water case that you performed your ECAPM calculations differently than you did in the Dominion East Ohio case?
A. In what respect did I do it differently?
Q. In respect to adjusted versus unadjusted Betas.
A. Yes, that's correct, in a water proceeding when I use the gas LDC companies, the sampled companies, as a benchmark against which to

compare the water company because I use unadjusted Value Line Betas, the reason for that is because I believe that on average the water industry is somewhat less risky than the gas LDC industry, and in order to reflect that I use unadjusted Betas for the gas LDC.

Q. I think when we were talking about the relative stability of natural gas companies earlier in your testimony, you had brought up issues with water utilities also, did you not?

A. I did, yes.

Q. I thought you had raised the issue of infrastructure of the water companies being more than 100 years old; is that correct?

A. Yes. All those factors were related to the relevance of the DCF model as an estimator.

Q. Those factors are all in place here as well, right?

A. Absolutely. Are you -- is your question -- the essence of your question why adjusted versus unadjusted in those cases?

Q. That's -- that's a question, not necessarily the one I was going to ask you but we will get there.

A. Okay. Sorry.

Q. But to make sure I understand, in the California-American Water case you used was it unadjusted Betas?

A. Yes, and as I -- what I am -- every procedure I use in California is identical to the procedures here except for the fact that I use unadjusted Betas for the gas LDC sample because I want to be sure that I don't overestimate the benchmark sample's risk.

Q. Now, had you used adjusted Betas in the Dominion East Ohio case, what would have your ECAPM results have been for that?

A. I used adjusted Betas in Dominion.

Q. Had you used unadjusted Betas in Dominion East Ohio what would your ECAPM results have been?

A. If I had used adjusted Betas, the raw or the original estimated returns on equity would have been lower because the Betas would have been lower.

EXAMINER PIRIK: Mr. Vilbert, in your answer did you mean if you had used adjusted Betas or unadjusted Betas?

THE WITNESS: We have two proceedings that we are talking in California.

MR. KUTIK: She just wants you to clarify. I think the court reporter mistranscribed what you said.

THE WITNESS: In here --

EXAMINER PIRIK: Hold on just a second. I am trying to remember what the question was, but I think the question was about this proceeding.

(Question read.)

MR. KUTIK: She has you saying "if you use adjusted Betas."

THE WITNESS: I thought the question asked whether it was -- for clarity I used adjusted Betas in this proceeding. Had I used unadjusted Betas and because Betas on average are less than 1, it would have moved them further away from 1 towards 0. That means that the estimates of the return on equity would have been lower.

Q. Thank you, Doctor.

MR. SAUER: If I could have just a minute, I may be finished.

EXAMINER PIRIK: Yes.

Q. Dr. Vilbert, one last question for you, the sample groups that you used for Dominion East Ohio Gas in the California water case, was it the same sample group?

A. I think there might be 11 companies in California. I think my core or one of the other -- there is an additional gas LDC that's entered the sample because the reasons I excluded it in this proceeding no longer apply but otherwise identical.

MR. SAUER: Thank you.

EXAMINER PIRIK: Thank you. I have one further clarification before we move to staff questioning, and this was a while ago, I should have asked it similar to what I just asked earlier, but I want to be certain the record is clear. I know there is one statement in the record that you had responded when you were talking about the 6-1/2 for the market risk premium and you have a statement that said "it's higher than the models of them but I don't believe 3 percent is irrational."

THE WITNESS: Rational is what I meant to say. 3 percent is not a rational estimate of the market in my judgment.

EXAMINER PIRIK: I wanted to be sure the record is clear because that was the tenor of your comments, and I wanted to be sure that it was clear.

Staff, do you have questions?

MR. REILLY: Could I have a moment your Honor?

Thank you, your Honor.

\- - -

CROSS-EXAMINATION

By Mr. Reilly:

Q. Good morning. Is it Dr. Vilbert?

A. It is.

Q. Dr. Vilbert, my name is Steve Reilly. I am here on behalf of the staff of the Public Utilities Commission. I just have a few questions. In reviewing your testimony and listening to you this morning, is it a fair statement the identifying and appropriate rate of return in this case comes down to a matter of judgment?

A. With all due respect I think that's too simple an answer. Judgment inevitably is part of the cost of capital estimation process but there is science behind it and some science is better than others, more reflective of current research and so forth and so, sure, you must make judgments about a variety of things but there is also a lot of science underlying the what I do and what everyone does that does this sort of thing.

Q. All right. So part of it's judgment and part of it's science, correct?

A. Absolutely.

Q. Okay. Let's talk about the science for just a second, if we might, all right?

A. Sure.

Q. You mentioned earlier a -- a professor at Wharton whom -- under whom you were a teaching assistant? Do you remember that?

A. I do.

Q. And what was his name again?

A. Professor Jeremy Siegel.

Q. Professor Jeremy Siegel? And I believe you testified that you disagree with Dr. Siegel's approach; is that correct?

A. Not quite accurate. I disagree with his result that says that the market risk premium is as low as he believes it to be.

Q. Would it be a fair statement based on that difference of opinion to say that your view of the science, your judgment of the science is different than Dr. Siegel's?

A. As I -- yes, as I said, the issue of MRP is very controversial. Dr. Siegel is at one end of the spectrum of what people believe the market risk premium should be. There are others at the other extreme of what it should be so there's -- it's very controversial, and I disagree with his conclusion.

MR. REILLY: Thank you, sir.

EXAMINER PIRIK: Thank you.

Do you have any redirect, Mr. Kutik?

MR. KUTIK: Yes.

- - -

REDIRECT EXAMINATION

By Mr. Kutik:

Q. Dr. Vilbert, the ATWACC methodology is an adjustment for financial risk that we testified to earlier?

A. Yes.

Q. Have other parties in this case made an adjustment for financial risk?

A. Yes. The staff, I give them great credit for this, they recognize that the 44.8 percent equity thickness that Dominion filed is of more financial risk than the sample companies that they used to estimate the cost of capital. So in response to that they have proposed a hypothetical capital structure recognizing there is roughly 52 percent equity and that has the effect of recognizing the increased financial risk of Dominion relative to the sample.

Q. Has your ATWACC methodology been accepted by any agency?

A. Yes, it has. It is true that it's not yet been accepted in the United States universally. It's used a bit by the Service Transportation Board, but it's the standard in England, it's the standard in Australia, the standard in New Zealand, and the characteristics of those countries are that they came to regulation much later than the United States, and so they were in a position when they started to regulate to skip all of the tradition and precedent that has been in the United States for so many years and go to the best science available at the time. And they have chosen to use the weighted average cost of capital very similar to what I use in my testimony.

Q. There were some questions about geometric mean and arithmetic mean. Do you remember those?

A. I do.

Q. And you had a result of a rate of return on -- which resulted in a compound geometric mean of let's say 4 percent, what would that translate to as an arithmetic mean roughly?

A. It would roughly translate a 4 percent would become 6 percent on an arithmetic basis and that is a calculation based upon the realized variance of the U.S. stock market which has been in the neighborhood -- standard deviation of the deviations has been around .10, so the calculation is you just take one-half of the squared amount, 20 percent squared, 4 divided by 2 is 200 basis points you add to get your number.

Q. There were also some questions about surveys. Are there particular issues and problems relying on surveys coming up with rates of return?

A. Yes, I think there are.

Q. What are those?

A. First of all, surveys are highly volatile. A recent example I just looked I think it was on CNN, the web page, and it said that economists 50 percent or more -- roughly 50 percent do not believe the United States is going into a recession. It was as recent as 60 days ago that it was something like 80 percent of the economists said we are definitely going into a recession, so any regulatory commission that tried to keep up with survey data that's that variable, you just can't do it plus I suspect that investors right now are much more pessimistic about the market and the economy than is warranted just like when we had irrational exuberance, as a quote we were too optimistic about the economy. So surveys are always affected by those kinds of factors.

Q. There were also some questions about decoupling. In your view does decoupling have an effect on rates of return?

A. I think the answer to that question you need to fully consider the decoupling mechanism you have in mind. But decoupling affects a type of risk and there is two types of risk. Some risk affects the cost of equity, that's the symptomatic, and some does not, that's diversifiable risk. To the extent the decoupling mechanism works on, for example, weather-related issues, there would be no effect on -- in my judgment on cost of equity because weather is the classic way -- you can diversify against weather by just picking a company in a different part of the country so the other aspect of that is that all of the sample companies in my sample have some form of decoupling mechanism in place, and so if it were going to affect the cost of equity, it would already be reflected in the estimates that I provided.

MR. KUTIK: No further -- your Honor, we have no further questions.

EXAMINER PIRIK: Thank you.

Mr. Rinebolt, do you have any recross?

MR. RINEBOLT: Yes, I do.

- - -

RECROSS-EXAMINATION

By Mr. Rinebolt:

Q. Dr. Vilbert, are all forms of decoupling the same?

A. No, sir.

Q. So some have more positive impact on company revenues or shall we say better guarantee a revenue stream to a company?

A. To answer the question fully, I would need to look at the decoupling mechanism you have in mind. Some are stronger than others. That's absolutely true. Keep in mind that one thing that decoupling does, not only does it remove the downside of underestimating your sales, it also removes the upside from overselling relative to your sales so it's not a one-way street.

Q. Are you at all familiar with the straight fixed variable rate design?

A. I used it some years ago in a natural gas pipeline case, but I haven't used it since then, so I don't know specifics about what may be here.

Q. But you believe -- excuse me. What type of decoupling approach did you use in your sample? What is the dominant approach?

A. I believe every company that is in my sample has a weather -- some sort of a weather mechanism so that variations in weather which affects the demand of natural gas is adjusted for. So they have -- they all have that. A number of them have attempts to compensate for conservation programs where if the utility is successful in encouraging customers to conserve natural gas usage or reduce natural gas usage, they are not penalized by lower rate of return in some cases. It's not universal among the sample companies.

There are gas cost recovery mechanisms in place, I believe, for all of the companies in the sample and that attempts to balance the difference between forecast to cost of natural gas and actual cost of natural gas. I am sure there are other mechanisms in place of various types among the sample companies but those are the primary ones.

Q. Well, you mentioned earlier that there is both an upside and a downside component to the decoupling mechanisms that you are familiar with, i.e., if revenues rise, then the adjustment could even be negative to the company in order to bring it within the bounds of the revenue requirement authorized in the case?

A. Yes, that's my understanding that these decoupling mechanisms have that effect, could have that effect.

Q. To your knowledge if there is a flat fixed charge on a monthly basis to customers that doesn't adjust up or down, would you say that customers would have any ability to take advantage or to receive any credit for excess collection of revenues by the company?

A. Could you repeat your question? I am not sure I followed it completely.

Q. Let me restate. As we discussed before, in the decoupling scenarios that you describe, the adjustment can be upwards of positive adjustment in terms of the collection of revenue in order to make the company whole or if the company is overrecovered, it can be negative.

A. Yes.

Q. So that is there is a balancing of interests. Now, say that you just sit a fixed fee and there is no ability to adjust that fee, does that eliminate the risk of a company that their revenue could be adjusted downward?

A. I assume you have in mind a rate structure that has a fixed charge that doesn't vary every month and that a variable charge that would potentially vary with the cost of natural gas; is that the scenario?

Q. With consumption.

A. With consumption and the variable charge is not intended to recover any fixed costs whatsoever?

Q. Let's say -- for the purpose of this discussion, yes.

A. All right. So if the variable costs -- if the volumes which is recovered in variable costs has no fixed cost recovery component whatsoever and the variable costs are trued up to actual variable costs, then volume would have no effect on the revenues of the company.

Q. And that would vary as you change the percentage, for example, if your fixed fee captured 80 percent of variable cost, then there would be risk over the 20 percent.

A. The more you move to a fixed charge the less volume matters to the utility in terms of its overall rate of return.

Q. And would that translate then into a reduction of risk of the company collecting its revenue requirement?

A. Potentially but, now, you -- there are a lot of other risks, for example, forecasting error and all of that so if you assume you did all of that perfectly and you move all the fixed costs into the fixed charge, I have to think about it to be sure I am not misstating, but I would say that it would certainly reduce the variance of the revenues to the company.

Q. Well, then let's -- you mentioned that forecasting is still a risk. How is forecasting a risk if you are guaranteed a recovery, a certain level -- dollar level of recovery is guaranteed, what does forecasting risk matter to you?

A. Are we talking variable costs or fixed costs?

Q. We are talking fixed costs.

A. And you have a true-up mechanism in place for differences between all of your fixed costs versus forecast?

Q. No, no. What -- if you have a fixed revenue requirement for the system and you are collecting that fixed revenue requirement through the rate structure, what is the forecasting risk?

A. The forecasting risk is the difference between what you believe your expenses will be and what they actually turn out to be.

MR. RINEBOLT: Okay. That's all, your Honor.

EXAMINER PIRIK: Thank you. Mr. Sauer.

MR. SAUER: Thank you, your Honor.

- - -

RECROSS-EXAMINATION

By Mr. Sauer:

Q. Dr. Vilbert, are you aware of any state public utilities commissions that have reduced the rate of return approved in a case because of the approval of revenue decoupling mechanisms?

A. Yes. I think Maryland instituted a reduction. I know that other states, for example, California which I originally did the revenue decoupling for the public utilities did not impose a reduction.

Q. And there was a question Mr. Kutik asked you about systematic risk. Do you remember that?

A. Yes.

Q. Are you aware that in this case DEO has proposed a pipeline infrastructure replacement program?

A. I don't know the details.

MR. KUTIK: Objection, your Honor.

EXAMINER PIRIK: Yes.

MR. KUTIK: Beyond the scope. I object. It's beyond the scope.

MR. SAUER: Mr. Kutik asked him about systematic risk associated with decoupling mechanisms. I am asking him about systematic risk with other aspects to this case and see if that has a similar reaction from Dr. Vilbert.

EXAMINER PIRIK: Do you -- are you in agreement that he can go down this line of questioning, or are you still concerned about where it's going?

MR. KUTIK: I withdraw my objection. I understand now why he is asking it, but it's still beyond the scope as far as I'm concerned.

EXAMINER PIRIK: I will let you go but his questions about risk did refer to decoupling. That was the focus of his so if it goes much broader than that, then I will ask you to stop.

Q. Are there other things in the -- that you are aware of in the Dominion East Ohio case that would affect systematic risk?

A. In my answer that I took you through about the relative risk of Dominion compared to the sample, I evaluated some of those factors as not individually but selectively making the company less risky than the sample and reduce the cost of equity inherent in that reduction to the cost of equity is a belief that those factors affect systematic risk at least to some degree.

Q. How would a program to upgrade Dominion's pipeline infrastructure affect systematic risk?

MR. KUTIK: Objection.

EXAMINER PIRIK: Objection sustained.

Q. You stated you look at a lot of different things in evaluating the risk of Dominion East Ohio. Was the pipeline infrastructure one of the things you evaluated?

A. Not specifically. I am at a superficial level aware that this is something that's been proposed or going to be put in place, but I don't know anything about it.

MR. SAUER: No further questions, your Honor.

EXAMINER PIRIK: Thank you.

Mr. Reilly.

MR. REILLY: We have no questions, your Honor.

EXAMINER PIRIK: Thank you.

MR. KUTIK: Your Honor -- I'm sorry. Do you have questions?

EXAMINER PIRIK: No, I don't.

MR. KUTIK: Your Honor, at this time we have no further questions, and we would move for admission of DEO Exhibits 9.0 and 9.1.

EXAMINER PIRIK: Are there objections to the admission of these two documents?

MR. SAUER: No, your Honor.

EXAMINER PIRIK: Hearing none DEO Exhibits 9.0 and 9.1 shall be admitted into the record.

(EXHIBITS ADMITTED INTO EVIDENCE.)

MR. SAUER: OCC would move for the admission of OCC Exhibit 3.

EXAMINER PIRIK: I know this is probably just me but for some reason maybe it's the blowers, but I am having a problem hearing both Mr. Kutik and Mr. Sauer. I did hear you there but, Mr. Sauer, you just need to speak up a little bit.

MR. SAUER: OCC would move for the admission of Exhibit 3, OCC Exhibit 3.

EXAMINER PIRIK: So you are withdrawing Exhibits 1 and 2?

MR. SAUER: Yes.

EXAMINER PIRIK: Are there objections to OCC Exhibit 3?

MR. KUTIK: No objection, your Honor.

EXAMINER PIRIK: OCC Exhibit 3 shall be admitted into the record.

(EXHIBIT ADMITTED INTO EVIDENCE.)

MR. KUTIK: Your Honor, as part of the discussions that we had in the prehearing conference, the parties had a discussion about witnesses and the timing of witnesses and who would anticipate doing cross and so forth and part of those discusses, your Honor, I believe I am able to offer to you at this point in time DEO Exhibit 3.0 which is the -- which is the Direct Testimony of Sylvia P. Green. No party advised us they had any cross-examination for Ms. Green and the parties, I believe, your Honor, are prepared to stipulate to the admission of DEO Exhibit 3.0, and so I move admission at this time.

EXAMINER PIRIK: Does any party have any objection to the admission of Exhibit 3.0?

MR. REILLY: No objection.

MR. SERIO: No objection, your Honor.

EXAMINER PIRIK: The Bench does not have an objection to 3.0 but understanding as we pointed out at the prehearing, we reserve the right to ask witnesses questions. In this situation we do not have questions for this witness, but I want to be sure that if there are other witnesses where this is similar to that, you give us a little bit of heads up.

MR. KUTIK: Right. This is all we have and certainly, your Honor, if you are -- if you have a preference in bringing the witness, we will bring the witness.

EXAMINER PIRIK: No. I think this witness in this situation is fine. We do not have any questions, but I just wanted to give you a little heads up on that in case this comes up again.

MR. KUTIK: Yes. As far as we know, your Honor, this is the only witness other than I think potentially Mr. McGarry from Blue Ridge on behalf of the staff, but I think that's the only two witnesses we have discussed about stipulating to.

EXAMINER PIRIK: With that being said DEO Exhibit 3 shall be admitted into the record.

(EXHIBIT ADMITTED INTO EVIDENCE.)

EXAMINER PIRIK: Mr. Campbell.

MR. CAMPBELL: The company would call Ron Edelstein.

(Witness sworn.)

EXAMINER PIRIK: You may proceed.

\- - -

RONALD EDELSTEIN

being first duly sworn, as prescribed by law, was examined and testified as follows:

DIRECT EXAMINATION

By Mr. Campbell:

Q. Please introduce yourself.

A. Yes. I am Ron Edelstein with Gas Technology Institute.

Q. You have in front of you a document that's marked DEO Exhibit 7.0.

A. I do.

Q. Do you recognize that document?

A. Yes.

Q. What is it?

A. This is the document I submitted in testimony on behalf of DEO.

Q. Do you have any corrections or changes to this document?

A. Yes, I have two. First, on page -- let's see here, page 1, change in title, I am now Director of Regulatory and Government Relations. And I believe that appears on line 6 and line 19.

MR. SERIO: Could you repeat that title now?

THE WITNESS: Yes, Director of Regulatory and Government Relations.

A. And the second change on page 15, line 7, particularly with respect to residential customers it says that the "DEO is requesting recovery of $600,000 to be collected for R&D," it says "less than 20 percent of the prior FERC R&D surcharge." It should be say "less than 30 percent of the prior FERC surcharge."

Q. With those corrections if I asked you today the questions that appear in DEO Exhibit 7.0, would your answers be the same?

A. They would.

MR. CAMPBELL: Thank you. The witness is available for cross.

EXAMINER PIRIK: Thank you.

Mr. Rinebolt.

MR. RINEBOLT: Thank you, your Honor.

\- - -

CROSS-EXAMINATION

By Mr. Rinebolt:

Q. Mr. Edelstein, welcome to Ohio.

A. Thank you.

Q. Let's start at page 4 of your testimony where you describe the funding mechanisms that have supported GTI's work over time. You indicate at line 10 and 11 that "GTI no longer collects FERC funds but relies upon state-based approval of R&D surcharges."

Are those state-based state surcharges on regulatory activities on gas companies through gas company rates?

A. Yes, they are.

Q. Is that the exclusive source of funding for GTI?

A. No, it is not. The funding that GTI receives is about 25 percent related to rate recovery of gas distribution companies and probably about 25 percent related to Federal Government funding of R&D including Department of Energy, Department of Transportation, and probably about 20 percent related to state R&D agencies like the California Energy Commission and New York State Energy Research and Development Authority, and then the rest is private sector funding, but for gas company distribution R&D 90 percent of that funding is directly related to recoverable dollars through Public Utilities Commission approval.

Q. Do you license any of the technologies that you develop?

A. Yes, we do. We do. It is our intent in order for the consumers to benefit from these technologies, in fact, when we are finished with the research, that we will attempt to get the products out into the marketplace so the gas companies and the consumers can use the results.

Q. But you receive revenue from licensing those technologies?

A. We do. We do.

Q. And I assume you patent some of the research outcomes?

A. I'm sorry?

Q. You patent some of the research outcomes?

A. We certainly do; we certainly do, yes.

Q. Okay. Now --

A. And we do have a royalty stream of the 50 to 70 million a year we receive. Royalties are probably 1.6 million and that money is put back. Since we are not for profit that money is put back into the research programs.

Q. As a not for profit, I certainly appreciate that. I sometimes wish it would go into my pocket but.

A. I understand.

Q. You mentioned -- you have quite an extensive discussion on page 4 of the role of GTI -- or pages 3 and 4 of the role of GTI in residential

space heating and furnace efficiency.
A. Yes.
Q. Was that activity funded primarily from utility surcharges?
A. Yes, it was through the FERC -- through the FERC surcharge, yes.
Q. Through the FERC surcharge.
A. Yes. That was funded in the -- in the 1980s.
Q. Just out of curiosity do you believe that GTI's research drove the increasing market share of those technologies or did, say, appliance efficiency standards play a role in moving those technologies into the market?
A. The -- when those -- when the high efficiency furnace was developed, a fully condensing furnace, there were no appli -- mega standards did not exist even for the 70 percent efficiency. Residential furnaces were about 60 percent efficient. This was a step function jump, 94 to 96 percent efficiency, first fully condensing furnace ever developed in the country and probably in the world, so it really was the incubus for not only Lennox but also the other companies to get into this market so

that really enhanced the commercialization and movement of that technology by 10 or 15 years. So it even happened before standards were -- were developed for furnace efficiencies, so I think it was very, very important, critical.

Q. Now, did the appliance manufacturers contribute to that research and development effort?

A. No, they didn't. They didn't. And, you know, 1982 the price of gas was $2 a million BTU. Energy efficiency in and of itself did not sell, and so the appliance manufacturers didn't. Now, what Lennox did do once we licensed the technology to them they did the marketing. They did -- they set up the production lines. They did the manufacturing. They did the warranty as you would expect, and we did receive some royalties based on those -- those furnace sales.

Q. I mean, certainly given the prevalence of high efficiency furnaces in the market clearly the manufacturers have certainly been advantaged from that as have customers.

A. Certainly, certainly. Manufacturers do receive an advantage once they developed the technology and carry it forward.

Q. Well, let's -- let's look then at the -- at the potential research projects that Dominion may or may not choose to be involved with. You talk first about a methane/ethane detector for leak surveys.

A. Yes. You are referring to page 9?

Q. Uh-huh, I am referring to page 9, thank you. Do you know whether this technology saves the company money if it's effectively developed?

A. This technology will detect leaks that might not have been detected and it will help the company to distinguish between natural gas contains methane but also ethane of a reasonable percentage, maybe up to 10 percent. Swamp gas, naturally occurring natural gas, does not contain ethane so this will help the gas companies when they do the leak surveys distinguish between swamp gas, if you will, and those leaks that are caused from within the gas system, so it would help it to detect leaks quicker, and so you could anticipate an increase in safety and a reduction in O&M costs which -- which I believe will -- will be shared in -- the reduction in O&M costs will be shared with the consumer and the company.

Q. Is there a mechanism proposed in this case to share those savings?

A. Reductions in O&M costs usually come when the companies file so that might not come until the next filing of the company but what happens is because of the increasing regulations pipeline integrity, distribution system integrity, O&M costs are escalating faster than even companies can estimate at their best estimates so what -- what this kind of research helps to do is to keep down the escalation in O&M costs that would have occurred beyond that's even forecasted by the companies.

Q. Do you think that there should be a mechanism to pass these savings on to customers if they are the ones making the investment through rates?

A. Well, I think the companies do their best to estimate O&M costs, and so I think they take that into account. It's really between the companies and the consumer advocate and the commission staff and commissions to decide how to handle the O&M costs over time.

Q. Uh-huh. Now, you are aware, of course, that this company hasn't been in for a base rate case since the early '90s?

A. I wasn't aware of the date, but I knew it had been a while.

Q. Okay. And are you aware as a part of this case we are considering whether to provide them with a separate infrastructure investment program --

A. I just found --

Q. -- that would be outside the base rate?

A. The pipeline integrity piece, I just found out about that yesterday.

Q. So that would certainly insulate them from the costs of soring O&M in the -- in their pipeline system.

A. As I -- as I say, I just found out about it yesterday, but from what I understand, it has to do with -- not with the O&M costs directly but with other factors like appreciation and other types of factors. It does deal with pipeline integrity but not necessarily distribution integrity which is -- which is a whole other animal.

Q. Now, let's look at your No. 3 topic.

A. Sure.

Q. Remote laser leak surveys, now, you note on line 12 that the current approach to locating leaks is "a very labor-intensive effort."

A. Yes.

Q. So, again, to being able to remotely survey for these leaks would certainly be a savings in O&M for the company.

A. It would increase the productivity of the company workers, certainly also enhance the safety of the system, yes.

MR. RINEBOLT: Those are all the questions I have, your Honor. Thank you very much.

EXAMINER PIRIK: Thank you.

OCC.

MR. SERIO: Your Honor, it's my understanding that the staff report adopted or did not contest the request for the $600,000. To the extent that if they are not contesting it, then any cross would be friendly. I don't have any concern with going next, but to the extent the staff is going to have cross and the staff report didn't challenge the GTI -- the GTI funding, then I would request that the staff go before OCC does.

EXAMINER PIRIK: I appreciate your comment regarding friendly cross. However, staff will question last.

Mr. Serio.

MR. SERIO: Thank you, your Honor.

CROSS-EXAMINATION

By Mr. Serio:

Q. Mr. Edelstein, you are employed by GTI, correct?

A. I am.

Q. You are not an employee of East Ohio in any respect?

A. I am not.

Q. And I believe you indicated initially you are now the Director of Regulatory and Government Relations, correct?

A. That's correct.

Q. And can you tell me when that change occurred in your title?

A. January of this year.

Q. And can you tell me what the change in title translated to as far as responsibilities?

A. Yes. It means more work. Yes, it means I will be picking up Federal Government activities, that is, dealing with the Department of Energy, Department of Transportation, particularly pipeline -- the pipeline safety group as well as the work I do now advocating R&D at the state level. That's the principal change in direction as I will be picking up federal work as well as state work.

Q. So prior to January, you did not do any of this -- the type of work that you do now with the Federal Government was restricted to just at the state level?

A. At the state level with state public utilities commissions, also state R&D agencies as I mentioned, CEC and NCERT, yes.

Q. You are testifying on behalf of Dominion in this proceeding, correct?

A. I am.

Q. Did Dominion approach you about testifying or did you approach Dominion?

A. We have an outreach program to gas utilities and so we came to Dominion as we come to other companies, and we asked them to consider R&D funding probably about six months before they filed. So it was our approach to Dominion.

Q. You are not being paid by Dominion for your testimony in this proceeding, are you?

A. No, no, I am not.

Q. And GTI is not charging Dominion for any of your work related to this case, correct?

A. No, no. Part of my job is to advocate for consumer interest R&D, and when I do that, I don't advocate for the money to come to GTI. I advocate for the funding of consumer interests R&D financing. We hope some of the money comes to GTI, but my job is to advocate for -- for gas consumer interests R&D, one of my jobs.

Q. I'm sorry. Were you done?

A. I say one of my jobs.

Q. You indicated that previously you had held a position as director of sales?

A. I did.

Q. Can you explain to me what the director of sales did?

A. Sure. I had strategic account managers in two or three places in the country. They dealt with gas companies. They dealt with state R&D agencies. And their job was to try to obtain funding for research projects.

Q. So you weren't necessarily involved in selling the products that GTI developed, but you were involved in selling the concept of what GTI was doing?

A. I was selling research proposals, yes.
Q. So when you say -- I'm sorry.
A. Collaborative programs, I'm sorry.
Q. You weren't necessarily selling any end result?
A. Oh, definitely not selling end result, no. It's not part of our job to advocate any specific technologies to the marketplace, no.
Q. Now, you have indicated in your testimony that you filed before other regulatory commissions.
A. I have.
Q. And was that testimony similar to what you are doing on behalf of Dominion today, testifying for an LDC before their state PUC?
A. It was very similar, yes.
Q. And it would have involved in those cases the LDC asking for recovery of GTI funding?
A. Yes, it would. It did.
Q. Now, I believe you indicated that GTI does get royalty revenues, correct?
A. Correct.
Q. I tried to write the numbers down, but I don't know that I got them. I heard you say 50 to 70 million dollars a year?

A. That is our total contract R&D funding. Royalties are about 1.6 million.

Q. So that 50 to 70 would be the total of the 25 percent that's from LDCs, 25 percent from the Federal Government, 20 percent state R&D, and 30 percent private sector.

A. Yes, yes.

Q. Okay. So the 1.6 that's royalty, would that come under one of those four categories or is there just a different catchall category?

A. That's -- that would be an additional piece to that.

Q. So you would give them 25, 25, 20, so the remaining 30 percent would be private sector, royalty, and anything else?

A. Yeah. Private -- private sector is typically proprietary R&D that a company will come in and say a gasification company, they wanted to test bio gasification, coal gasification. They wanted to test your process at our unique gasification facility, so they would pay to rent the facility basically, if you will. The type of research we do here is collaborative R&D, and the results are shared with all the companies that fund the projects and then -- and so it's a little different flavor between those two approaches obviously.

Q. Okay. Let me make sure I understand, the private sector is when a company comes in and that's done discretely for that company, correct?

A. Yes.

Q. The other funding which would include the funding that Dominion is proposing is the collaborative-type funding?

A. That's right. The Federal Government R&D dollars, the state R&D dollars, and the public utilities commission-approved dollars are collaborative R&D programs. What does that mean? That means if a company comes and joins the plastic pipe locator, that might cost a million dollars a year and there are 10 other companies, they can spend 100,000 a year on that project so there is considerable leverage in the collaborative programs. That's one of the advantages of those.

Q. Okay. I think you indicated 25 percent of the rate recovery from LDCs and then you said 90 percent of that is PUC approval. Is that what you --

A. No. I would say of the -- I would say 99 percent of the dollars coming from the utilities are -- are approved by public utilities commission -- public utilities commissions as an R&D charge.

Q. So you have very little funding coming from distribution companies that has not been approved for passthrough to their customers.

A. That's very true, yes, yes.

Q. Less than 1 percent of your funding.

A. Yes, yes, 99 percent of the funding coming from gas utilities is -- is ratepayer funded and there is a reason for that. The end use R&D increases efficiency and goes to the customers and O&M cost reduction, those benefits certainly at rate cases flow through to the customers too, and the companies feel that since the ratepayers are going to benefit from this R&D that the ratepayers should be paying for that R&D.

Q. I believe you indicated in response to Mr. Rinebolt that some of the projects that are proposed that are listed in your testimony would provide a benefit to LDCs also, correct?

A. The projects will reduce O&M costs or prevent O&M costs from escalating so that will benefit the company and will benefit the customers but other benefits that come from those same projects like safety, system integrity, reliability, deliverability, will go through to the customers and safety of the general public, so those benefits go directly to -- go directly to the customers.

Q. Do you think that an LDC benefits from improved safety?

A. As far as its workers not being hurt, yeah. I think it's part of the, you know -- without getting into the specific details it's part of the charter of the company to deliver the gas safely, and they certainly do a good job of that, but the safer you make the system, the more the public and the consumers benefit. Does the company benefit from having a safe system? Sure.

Q. Would an example of the company benefiting from a safe system be if the system is safer, there would be fewer explosions on the system?

A. We say incident but there would be.

Q. Incidents?

A. There would be, yes, fewer incidents, fewer -- fewer corrosion issues, fewer leaks, yes, yes.

Q. And if there is fewer incidents and, in

turn, the company doesn't have to spend as much capital or O&M or any kind of funding to correct the result of that incident, correct?
A. Correct.
Q. And to the extent that the company has built dollars into their revenue stream for O&M and increased safety allows them to not spend as much on O&M, then the company benefits from that, correct?
A. Yes. But there are other pieces to the O&M issues such as distribution integrity where the rules haven't even been written yet so there is a lot of uncertainty in what those O&M costs are going to be. Even with the best estimates we don't know what the distribution integrity rules are going to look like, and so advanced technology is needed just to make sure that those O&M costs don't unduly escalate --
Q. And --
A. -- in order to meet those regulations.
Q. Were you done?
A. Yes.
Q. To the extent those rules haven't been written yet, LDCs have not had an opportunity to react to those rules to see if they are going to file

for additional cost recovery to deal with those rules, correct?

A. That's correct.

Q. And you would assume that if the rules that haven't been written yet do get written and they cause additional costs, LDCs would act at an appropriate time to try to recover those costs, correct?

A. They would consistent with their filing structure. But in between those filings just like they can have O&M savings from this advanced technology because of the additional rules they will have additional O&M expenses between those filings so as much as the company can save between filings, they will be spending extra money between filings as well.

Q. Okay. Now, I believe you were asked the question should there be a mechanism to flow O&M savings or other savings to customers between cases. And you gave a response, but I don't recall if you gave a direct response to that question. So I would like to know is it your recommendation that there be some type of mechanism to flow O&M savings to customers between rate cases?

MR. CAMPBELL: Objection, your Honor.

Mr. Edelstein is called to testify regarding what the GTI program is, what kind of programs it will fund. He is not being called to support any riders or rate design or any ratemaking principle in this case. I think it's beyond the scope of his direct.

EXAMINER PIRIK: Your objection is noted. To the extent that's part of the purpose of your testimony, if you have a response to this question, I will let you answer it.

A. I would say that it's a two-edge sword. If a company is able to -- if a company should pass savings along to the customers, then they should also be able to pass the additional costs on to those consumers.

Q. And do companies pass additional costs to consumers when they file rate cases?

MR. CAMPBELL: Objection, same.

Q. If you know.

EXAMINER PIRIK: Objection overruled.

A. When they file the rate case, they would pass the test year savings or costs on to the consumers as far as I know. I am not a rate expert in this area.

Q. Okay. So I am going to go back to the question I still don't think has been answered. Would you recommend that in between rate cases savings that result to O&M costs from the specific programs that are listed in your testimony, would you recommend that those savings be flowed to consumers?

MR. CAMPBELL: Objection. Asked and answered.

EXAMINER PIRIK: Objection sustained.

Q. In your testimony you indicate that the GTI-sponsored R&D will directly benefit DEO customers.

A. Yes.

Q. Can you define what you mean by direct benefit?

A. Yes. Direct benefits are those that will result in savings to gas consumers that could be monetary, that could be safety, could be environmental where the benefits can be quantified, could be increased deliverability.

Q. Are you done?

A. Yeah.

Q. Okay. I didn't want to cut you off.

A. No.

Q. You indicate they could be monetary.

A. Yes.

Q. And if they are monetary, then would you agree they would have to be quantifiable?

A. Monetary benefits would be quantifiable. Now, you know, there are different types of O&M savings. Some could simply be avoided costs, okay, avoided costs of additional distribution integrity regulation. So those might not result in a dollar given to the consumer but it would mean that at the next filing the company wouldn't have to increase their O&M expenses.

It also might mean that the company has the ability to go from class 1 leaks to class 2 leaks to be able to deal with more problems with the same amount of money or with fewer staff. So if you use this remote leak survey device instead of having, you know, 10 people out there doing the leak surveys, you could have five people out there doing the leak surveys.

Q. If it's a monetary benefit, should you be able to quantify it?

A. Yes.

Q. Whether it's dollars spent or dollars not spent, it should be quantifiable?

A. Yes.

Q. If it's a safety-related benefit, should you be able to quantify the safety benefit?

A. Safety is a risk and uncertainty type of benefit so some of the safety issues you can quantify. Some of the safety benefits you can quantify and some of them are more difficult to quantify. If you fix a mid-efficiency furnace by dealing with the venting issues on these furnaces which were significant at one time, the 80 to 90 percent efficient furnaces you can predict less furnace failures. You can predict less corrosion of the internal working furnace so the homeowner doesn't have to replace the furnace, if you will, and so you -- some of the types of benefits you can quantify. Other safety benefits are more difficult to quantify. Same thing with environmental benefits, some of the environmental benefits you can quantify. Some of them like cleaner air are public good and become much more difficult to quantify.

Q. Okay. The ones for safety that are more difficult to quantify, can you say that it's going to be 10 percent safer and quantify it in that respect versus quantifying a dollar benefit to it?

A. There -- there are always technical goals for these projects so you could say for plastic pipe locator which is impossible to locate now you could say you are going to locate the plastic pipe for third-party digs 90 percent of the time, 90 percent of the locations. And so you could -- you could make those kinds of quantifications.

Q. Are you done? I don't want to cut you off.

A. No, no. Go ahead.

Q. So when there is technical aspects like that, there is always some quantifiable amount that would be identifiable whether it's safety, environmental, or deliverability; is that correct?

A. Well, as I said, some of the safety environmental benefits fall into the public benefits category and those become more difficult to quantify. You know what is the benefit of cleaner air? As the regulations change on greenhouse gases and other things, some of these things become internalized but there are externalized benefits that aren't taken into account in the market system and so these fall -- these would fall outside the realm then of what the market might value.

Q. Okay.

A. It doesn't mean the benefits aren't important.

Q. I understand that. When you are talking about clean air, I understand you might not be able to put a dollar quantification on it but could you put a percent if it's -- we are going to make air 5 percent cleaner, 10 percent cleaner, can you -- can you do a quantification of the improvement that you are talking about?

A. Well, because there is so many variables in the air I would say no but what you can do is you can say gas industry leaks from wellhead to burner tip are 1.4 percent and with some of these technologies maybe they will come down to 1.3 percent. You can do those kind of calculations and, so methane emissions could be reduced by X.

Q. So you can quantify the amount of the improvement. You can't necessarily quantify a dollar amount related to the improvement.

A. You can't necessarily monetize it, yes.

Q. But you should be able to quantify the improvement itself.

A. You should be able to quantify either the improvement itself or the O&M cost savings resulting from using this tool or technique over state-of-the-art techniques, so if a technique costs $50,000 a mile, you should be able to say using this technique the company would expend only $40,000 a mile to do the same job.

Q. Now, you talk about direct benefits. I assume then there is indirect benefits?

A. Yes.

Q. What's the difference between a direct benefit and an indirect benefit?

A. Indirect benefits would be those that would accrue possibly to the public at large, you know. You can look at the whole literature on public and private benefits. Public benefits are basically nonrival and nonattributable, so you really can't use them up. You can't claim ownership of them. So if you have increased safety, the company can't say, you know, unless you pay me I am going to make you less safe like a lighthouse or running trail; those public benefits accrue to all. Those would be indirect benefits. But there -- you can't use them up like safety and your -- they are nonrival and nonappropriable. Those would be the classic public benefits where everyone can use the results.

Venting safety is another one that the public at large benefits. The individual manufacturer won't benefit from venting safety. The gas companies don't benefit from a venting safety. The consumers and the people that are in the house at the time will benefit from venting safety so those are the class public benefits as the indirect benefits, if you will, not that they are not important.

Q. I understand you use the term nonrival.

A. Yes.

Q. I'm not sure what you mean by nonrival.

A. Nonrival basically means you -- you can't use them up so that -- that if you use a lighthouse, it won't prevent me from using the lighthouse.

Q. Okay.

A. Nonappropriable means you can't claim ownership of it and so no individual entity can claim ownership of this. That's why R&D consumer interest -- consumer interest R&D because we believe the benefits flow through to the gas consumer almost entirely.

Q. Okay. If you do a project and the

project benefits an industrial customer, is that a direct or indirect benefit for a residential customer?

A. Okay. Are we talking about just for clarification end use efficiency, or are we talking about safety?

Q. Let me see if I can give you a more concrete example.

A. Okay.

Q. Okay. One of the industrial projects I think you have listed on the attachment to your testimony is "process application of composite radiant tubes." That's under industrial.

A. Okay. Yes.

MR. CAMPBELL: Could we get a page number?

MR. SERIO: It's on page 4 of his table 2.

A. Okay. Yes. That project will have two types of benefits --

Q. First, can you tell me what it is?

A. Sure. The -- it's the -- it's the application of tubes that will radiate energy in the lower temperature regime and so the radiant heat, three types of heat transfer, conduction, convection, radiation, the radiant heat from the device provides the energy to the working substance that you are dealing with whether it's a piece of metal or whatever and this -- this will lower emissions because it's lower temperature so lower NOx emissions. It will also increase the efficiency of the process if the piece of metal or plastic is near the radiant tubes so both efficiency and emission reductions so, yes.

Q. Okay. Efficiency reductions would be one of those nonquantifiable --

A. Emission reduction.

Q. Emission reduction could be one of those nonquantifiable that's a direct benefit to everyone?

A. Except in certain places like California where there is NOx trading locally and NOx in Texas a number has actually been quantified and capped NOx emissions, but in general NOx emissions would be a -- a public benefit aside from those areas that have.

Q. Does Ohio have the same kind of NOx problems that California does to your knowledge?

A. I am not aware of the environmental regulations in Ohio. But let's presume it's a public benefit for purposes of discussion.

Q. So if it's a public benefit, then is it an indirect benefit?

A. Yes, yes.

Q. Okay.

A. Now, the energy efficiency savings have two kinds of benefits. First kind of benefit is it directly benefits the person that uses the device. That's the primary benefit, whether it's a residential furnace or it's an industrial device. The second is a more defused benefit which is quantifiable but that by supply-demand theory if you reduce demand, you reduce prices infinitesimally to every person in the country.

Q. Okay.

A. Now, an economist will say, yeah, that's there but, you know, if you look at the power generation load and whether it's a warm or cool summer, the natural gas load for power generation, that so dominates the price of natural gas that saving a few BTUs on a furnace isn't going to make any difference at all but nevertheless there is this diffused benefits to all consumers for end use R&D, small.

Q. Okay. Going -- I am still talking about the composite radiant tubes so the direct benefit from composite radiant tubes is the industrial customer that uses those tubes as part of their industrial process, correct?

A. Correct.

Q. And any benefit that would come from composite radiant tubes to the general public would be an indirect benefit?

A. It depends how much you believe in supply-demand theory, I guess. The magnitude of any individual, residential, commercial, industrial, or company, or person's decision on what device to use is negligible and would not affect the other customers over time and over the -- over the life of the project and if there is significant penetration across the country, it could make a difference in -- in the price of gas depending on other uses and other -- and other demands for the gas.

Q. Okay. Having said that do you know if there is any way to quantify the indirect benefit from reducing demand and the ensuing price from the composite radiant tubes project?

A. The diffuse benefit to all consumers?

Q. Yes.

A. There are -- there are -- I have been doing benefits now for since -- for a long time. There are price elasticity theories that enable you to convert a reduction in demand to a reduction in price, yes.

Q. Is there any such study as part of your testimony in this proceeding?

A. There is not.

Q. To the best of your knowledge, is there any such study in any of the company applications in this proceeding?

A. There is not. But I have seen such studies and we have done them in the distant past. In 1988, 1989, 1990, we have done those kind of studies.

MR. SERIO: Your Honor, I would move to strike the last part of the answer to the extent there is none in this testimony and none in this proceeding. The fact that they may or may not have been done in the past is irrelevant.

EXAMINER PIRIK: Mr. Campbell, do you have any response?

MR. CAMPBELL: I believe he is explaining his answer, explaining the company's experience doing such studies. I don't see why it should be struck. He was responding to the question.

EXAMINER PIRIK: Motion denied.

Q. If I wanted to look at one of these studies, you don't have any -- I don't have one of them in front of me, in any part of this proceeding so I can look at the assumptions that went into the study or the other exterior factors that might have affected that analysis, correct?

MR. CAMPBELL: Objection. That's argumentative. He didn't even ask a question.

EXAMINER PIRIK: Can you complete your question, please?

Q. I started at the end of it. I said isn't that correct. But you would agree with me that there is nothing in front of us in this proceeding where I could look at any of these studies that you have alluded to and look at the assumptions that went into the study or look at other external factors that went into the study to see if they would apply in Ohio, correct?

A. This is the price of elasticity studies.

Q. The studies that you referenced, yes.

A. That's correct.

Q. Now, I don't want to take a day to go through each one of these, but if we go through on your table 2, we could go through each one of those under industrial and you would agree with me the direct benefit of those industrial projects is the industrial customer that is using that process as part of their business, correct?

A. That's correct.

Q. And under power generation those direct benefits would be for the power generators, correct?

A. No, they are not. When -- when we refer to power generation, we refer to power generation that is supplied by the distribution companies so it's really distributed generation so these are -- these are smaller systems, 10 megawatts and less maybe down even down to 10 kilowatts so these are smaller systems, so it's not the independent power producers or the electric utilities that you might think of. That type of research is done by the Electric Power Research Institute so our research on power generation is -- is focused primarily on distributor generation and combined heat and power systems, the smaller systems.

Q. What do you mean? Like a city system?

A. I would say anywhere from a cogeneration system for a house to a cogeneration system for a building to a cogeneration system for an industrial facility. As I said, 10 kilowatts to 10 megawatts maybe up to 20 megawatts in range.

Q. Are you aware, are there any such power cogen systems in Ohio for residential customers?

A. No. That's one of the reasons for research on -- on smaller combined heat and power systems.

Q. Do you see power generation cogen systems for commercial and industrial customers today?

A. Yes, yes.

Q. So the direct benefit of the power generation research would be -- the direct benefit would be to commercial/industrial customers that could actually use those cogen systems today, correct?

A. You are referring to the systems that exist today.

Q. Yes.

A. Yes, that's correct, with the possible exception with multi-families. There are multi-families buying heat and power, especially in cities where the residential customers, whether they are renters or owners, can benefit directly from those systems.

Q. To your knowledge are there any such cogeneration facilities for multi-dwelling units in Ohio?

A. I don't have that direct knowledge.

Q. So you are aware they are there, but you don't know if they are actually in existence in Ohio today?

A. The multi-family systems?

Q. Yes.

A. No, I don't know that they are.

Q. Okay. Now, under transportation.

A. Yes.

Q. Can you explain to me what you mean by transportation?

A. Yes. Transportation is principally natural gas vehicles, both those used by gas companies and those used by consumers, residential, commercial, industrial consumers.

Q. Would you agree with me that the vast majority of natural gas vehicles used today are either vehicles used by local distribution companies or vehicles that exist in fleets, company fleet vehicles?

A. Yes.

Q. And you would agree that there is very few residential customers that have natural gas vehicles, correct?

A. That's correct. They do have that option. There is a fast fill device that you can put on your house that will enable you to -- actually slow fill device that will enable you to fill up overnight, but it's not in heavy use, I agree.

Q. Do you know if there is any such use for residential customers using natural gas vehicles in Ohio with that slow fill device that you just mentioned?

A. No, I don't know if there are.

Q. And when you talk about distribution, can you tell me what you mean by distribution?

A. Yes. Distribution is the operating and maintenance functions and the maintenance of the system by the gas distribution companies, and so it would incorporate everything from system integrity, to safety, to cast iron replacement, to leaks, the normal functions of a -- of a -- the operating and maintenance functions of a gas company, new pipe materials, fusing of plastic pipe, location of plastic pipe, those kind of things.

Q. So you would agree with me that the distribution functions are a direct benefit to distribution companies?

A. I believe that the distribution functions are a benefit to the gas consumers as O&M costs are -- as O&M costs are reduced and the company comes in for a filing and the test year O&M costs are less. We also keep -- the O&M costs have been escalating, and then you have the safety, the integrity, the deliverability benefits that will improve to the gas consumers.

Q. My question had the word "direct" in it; your answer did not. I want to make sure we are not talking past each other.

A. Okay. When a gas company comes in and their O&M costs aren't as -- for a rate case and their O&M rates aren't as they -- as they would have been with direct technology, then those benefits go directly to the customers in dollars. They don't have to pay more for O&M. Then they would have in the ensuing years from that point on.

Q. Are any of the functions under distribution functions that would be a direct benefit just to the LDC?

A. O&M cost reductions at the rate case get passed through to the consumers so they -- these -- these aren't investment opportunities for the LDCs. These aren't -- the LDCs don't offer these plastic pipe across and on bridges to other -- it's not a shareholder return item. They don't offer the services to other industries. It's O&M savings. And can the company, you know, share some of those savings? Sure. At the next rate case those savings go back to the consumers.

Q. Can we agree that to the extent that there is a direct benefit from distribution functions that direct benefit accrues to both the LDC and customers?

A. It accrues to both until the next rate case, and then at the next rate case those savings go directly through to the consumers from then on.

Q. So the direct benefits until the rate case accrue to the company; after the rate case, they accrue to the customer?

A. From that point on they accrue to the customer, yes. Well, plus the escalation of the O&M costs as well, the company has to deal with those as a negative, as a disadvantage.

MR. CAMPBELL: I just want to object. I think the question mischaracterizes Mr. Edelstein's testimony, "before rate cases it only accrues to the company." I think the testimony was it was shared just to keep the record clear.

EXAMINER PIRIK: We no longer have a link here, so are you questioning what the question was or what the answer was?

MR. CAMPBELL: Mr. Serio, I believe, mischaracterized his testimony by saying the company benefits before rate cases and customers afterwards. I believe the testimony was the company and the consumer share the benefits before the rate cases and then the customer gets them afterward.

EXAMINER PIRIK: I think I will let the witness clarify exactly -- if you could clarify exactly what your response was, I think that would.

THE WITNESS: Okay. At the rate case all the savings accrue to the -- all the savings accrue to the customer. Before the rate case if there are

O&M savings, they are shared by the customer and by the company.

Q. That's a direct benefit to the company as well as a direct benefit to the customer.

A. Yes.

Q. Now, there is a number of projects listed under pipeline.

A. Yes.

Q. I assume that those relate to interstate pipelines that transport gas from, for example, southwest and the southeast parts of the United States up to Ohio?

A. That -- the benefits to the pipelines are certainly part of this. There are also benefits that accrue to distribution companies that have higher pressure lines.

Q. And would higher pressure lines be lines that serve industrial customers or lines that serve residential customers?

A. No. It's not only lines that serve industrial customers. There are higher pressure lines that fall under the pipeline integrity rules, higher pressure lines and higher consequence areas that are owned by distribution companies. So much of this research also deals with distribution expenses as well as pipeline expenses.

Q. Do you know if East Ohio has high pressure distribution lines?

A. No, I don't know that.

Q. If they -- I'm sorry.

A. Go ahead. A lot of this research is for the transmission companies that don't have plastic pipes. Plastic pipes are in the realm of the distribution companies, also for services, for gas services. Steel pipes, however, are in the realm of both the distribution companies and the pipelines, so as this research applies to corrosion on steel pipe, coated, non-coated, and as it applies to welding on steel pipe, as it applies to direct assessment, then the benefits go both to the distribution and to the transmission companies and to the consumers of both.

Q. Okay. But we were talking about high pressure pipes. I believe you indicated you didn't know if Dominion has any high pressure distribution lines, correct?

A. I don't know the answer to that.

Q. To the extent that they do, would you expect that they would be a relatively small portion of the entire distribution system?

A. Yes, but it's not only based on miles. You know, high pressure pipe can cost a million dollars a mile to put in. Distribution pipe might be 50 or 100 thousand a mile, so it's not just a matter of miles. It depends where the pipe is, whether or not it's in high consequence areas, and what the risk -- what the age of the pipe is. There is a lot of considerations for -- for dealing with these high pressure -- high pressure systems.

Q. When we are talking about high pressure systems, would you expect that a smaller percentage of the total rate base that Dominion has is related to high pressure pipe compared to non-high pressure pipe?

A. Yes, I would.

Q. So any direct benefit to Dominion from high pressure research that you talk about here under pipeline would affect a relatively small percentage of Dominion's investment on a dollar basis, correct?

A. I see the source of confusion. You have mischaracterized the pipeline research. It's not directed to high pressure pipe. It's directed to steel pipe. And as Dominion has steel pipe, whether high or low pressure, it still has to deal with the same corrosion issues, the same issues of, I think, environmental contamination inside the pipe, the same direct assessment issues that have to be dealt with, the pinging issues, so the science of dealing with steel pipes pressure is only one of the issues. So all the signs that apply to steel pipes applies to any steel pipes that are within Dominion's system.

Q. If I go through these projects listed under pipeline, how do I know which ones apply to steel pipe and which ones apply to interstate or transmission pipeline?

A. Well, looking at the list I would say that all of these projects apply to steel pipe.

Q. Okay. So if I look at the one that says predicting the integrity of storage caverns in then salt beds, that somehow relates to steel pipe?

A. No. That relates to -- thank you. That relates to gas storage systems and so as -- as Dominion has gas storage systems as part of its distribution, it -- it would apply to Dominion's gas storage activities.

Q. If there are salt caverns --

A. If there are salt caverns, that's

correct.

Q. Do you know if Dominion has any salt caverns?

A. I do not.

Q. If they don't, then this wouldn't apply to Dominion.

A. Then that wouldn't apply, correct.

Q. There is one that says reference manuals of best practices for horizontal directional drilling and its effect in wetlands, that would only apply if a distribution company had wetlands in its service territory, correct?

A. That's correct.

Q. Do you know if Dominion has any wetlands in its service territory?

A. I don't.

Q. If they don't, that would not apply to Dominion, correct?

A. Correct.

Q. Could you tell me what AIRCalc Software is? It's about a little more than halfway down in that list.

A. Yeah, I see it. I am not sure about that one. I am not sure about that one.

Q. So if you are not sure about it, we don't know that it would directly apply to Dominion East Ohio, correct?

A. That's correct.

Q. Emeritus report B31.8 Code, Federal Pipeline Safety Regulations, is that for interstate pipes?

A. That is for interstate pipes and that is for pipes that fall under the Pipeline Safety Regulations. PHMAS looks at pipes that contain hazardous materials and that deal with transportation, and so they deal with pipes that are part of distribution systems as well and many of the PHMAS -- PHMAS is the Office of Pipeline Safety Pipeline Hazardous Materials Assessment Safety, and so a lot of the regulations that deal with -- with pipelines also apply to gas line distribution companies that have a larger diameter pipe.

Q. I think you had a couple of categories in there, so if it's federal pipeline, then that would not apply to Dominion, correct?

A. No. That -- the regulations are established for pipes that are of a certain diameter and a certain pressure.

Q. Okay.

A. So they could apply to Dominion and that are in some cases in high consequence areas and actually distribution systems are more likely to be in high consequence areas, that is, urban population or higher buildings than are pipeline systems and so the -- a lot of the PHMAS' regulations also apply to certain classes of distribution pipe.

Q. You indicated that hazardous materials was part of the PHMAS -- I'm sorry. I didn't catch that acronym.

A. Yeah, Pipeline Hazardous Materials Assessment Safety Group. They deal with oil pipelines, gas pipelines and pipelines that transmit other types of materials.

Q. Does the hazardous materials refer to PCBs, for example, or is the natural gas itself considered a hazardous material?

A. Neither. It's -- they deal with pipelines that carry more toxic substances than natural gas so that is -- that's the part of it that is the hazardous material. It's the old Office of Pipeline Safety.

Q. So to the extent -- do you know, does

Dominion carry anything more hazardous than natural gas in its pipe?

A. Not that I know of. There may be some minor constituents, but the PHMAS' regulations still apply. They are Pipeline Safety Regulations, and they deal with steel pipe in certain places and at certain pressures, and so they apply to distribution systems and pipeline systems.

Q. I understand. I am trying to take these in pieces.

A. Okay.

Q. To the extent we are talking about the hazardous material piece, to the extent that Dominion only transports natural gas through its system, then the hazardous material piece would not apply to Dominion, correct?

A. That's right, but the codes referred to are pipelines. These are for pipelines that transmit natural gas.

Q. Right. I understand there is two parts. I was just looking at the one --

A. Right.

Q. -- with hazardous materials.

A. We are not dealing with -- we don't do studies on Hazmat pipeline at GTI.

Q. Under exploration and production that's on the next page.

A. Yes.

Q. That has to do with exploring and finding natural gas, correct?

A. Exploring, finding, and producing natural gas, that's correct.

Q. That's generally the bailiwick of exploration and production companies, correct?

A. That's correct.

Q. Dominion East Ohio is not in the business of exploring and producing natural gas, are they?

A. Well, Dominion may have some wells but in general -- in general these are exploration and production companies or their subsidiaries. There seems to be some misunderstanding between this list so let me describe what this list is.

MR. SERIO: Your Honor, I haven't asked for that. I am trying to ask questions, and I am letting the witness go for a while, but a direct question shouldn't be an opportunity to explain everything and anything.

EXAMINER PIRIK: That's fine, Mr. Serio.

We will have an opportunity later for you to explain the list.

THE WITNESS: Okay.

MR. CAMPBELL: Your Honor, if the witness is not going to be able to explain his response --

EXAMINER PIRIK: He will have an opportunity on redirect to explain the list or perhaps in my questioning.

MR. CAMPBELL: Okay. Thank you.

Q. The exploration and production projects listed here have a direct benefit to exploration and production companies, correct?

A. More of a benefit to the gas consumers but to the exploration and production companies that adopt the technologies and to the gas consumers, yes.

Q. Okay. If I am a production company and you are showing me a way to produce gas more efficiency, that's a direct benefit to me as a production company, correct?

A. Yes, and to the consumers that use your gas because there will be more gas available.

Q. That's assuming that there is more gas and that it flows to the end use customer, correct?

A. Correct.

Q. And we don't know that all that research is going to necessarily produce more gas, correct?

A. We have some very evidence that exploration and production research, for instance, coal bed methane, increased production, 50 BCF in 1982 to 1,700 BCF per year today and this increase in gas resulted in a gas bubble in the 1980s and into the '90s where gas was $2 a million BTU. The research was billions of dollars, and you can talk to your Ohio producers, but they didn't see a lot of benefit when gas was at $2.

Q. Can you show me where coal methane gas is one of the projects listed under exploration and production?

A. Yeah. That's in the unconventional natural gas database, downhole gas/water separation, tremendous amount of water in -- in coal, advanced stimulation technologies CD-ROM.

Q. I'm sorry. Which one is that?

A. Advanced stimulation technologies CD-ROM, coiled tubing standards applies to both conventional, unconventional, portfolio of emerging natural gas resources, natural gas basins, that's almost entirely on unconventional gas.

Q. I'm sorry. Those are all coal methane or other unconventional?

A. They are all coal methane, yes.

Q. So when you say unconventional, you are only referring to coal methane?

A. No, unconventional gas is typically very specifically low permeability gas. It's titled gas methane and it's gas ethane and it's shales, all three of those technologies.

Q. When you said earlier the gas bubble in the '80s was caused by coal methane, I was asking you specifically which of these were for coal methane only. Can you identify any of these that were coal methane only?

A. You asked me which of these had coal bed methane research in them and all of those that I listed did.

Q. But they also had other nonconventional gas also.

A. Yes, they did.

Q. Did any of these have -- were any of these projects only for coal methane gas?

A. Probably the downhole gas/water separation was only for coal bed. The Rocky Mountain technologies 95 percent coal bed methane resources in the Rockies.

Q. I'm sorry. Rocky Mountain, oh, okay. I see it, portfolio of emerging.

A. Portfolio of merging natural gas resources, yeah.

Q. Now, for the downhole you said probably.

A. No. I said that one -- that one is coal bed methane related entirely.

Q. It's entirely, not possibly.

A. Yes.

Q. You talked about the gas bubble in the '80s being --

A. '80s and '90s.

Q. '80s and '90s being a result of the coal methane and other unconventional gas.

A. It's a result of a lot of factors. One of the factors was the increased availability of natural gas from unconventional coal bed methane gas and a little of the Devon shale. The shale isn't coming out until very recently where we see the Barnett shale now being a biggest player in Texas.

Q. Can you give me a quantification how much of the gas bubble was a result of nonconventional gas?

A. Of today's 22 trillion cubic feet, I would say 5 trillion cubic feet comes from unconventional gas resources, that's a tremendous, tremendous impact. It's 10 times we get from LNG facilities. It's more than we get from co-produced gas from oil wells. It has a huge impact on the marketplace.

Q. There's no gas bubble today, is there?

A. There is no gas bubble today, no.

Q. When we had the gas bubble in the '80s and '90s, what was the production at the time? It wasn't 22 trillion cubic feet.

A. 22 trillion, the production then was probably 17 to 19 trillion cubic feet a year.

Q. And how much of that 17 to 19 was from unconventional gas production?

A. I would say 2 to 3 trillion cubic feet.

Q. Do you know if any of the gas bubble resulted from regulation at the FERC and deregulation efforts at the FERC?

A. Deregulation of the wellhead gas made a difference. Investment tax made a big difference. Those were all certainly a part of -- those were all certainly a part of production in gas price.

Q. In fact, without the deregulation and the federal tax credits we probably don't see the unconventional gas that was added to the supply at the time, correct?

MR. CAMPBELL: I am going to object to the relevance of these questions. I am not sure how we are connected to GTI at this point. I mean, we are talking about FERC deregulation. We are just getting far afield.

EXAMINER PIRIK: I understand. Can you bring it around?

MR. SERIO: I try to ask a specific question. I get a general answer so I am going back and trying to get the answer to be specific so I am not trying to ask those general questions, your Honor. If the answers are more specific, we won't get as far afield.

Q. Okay. If I look at the two pages -- three pages, pages 4, 5, and 6.

A. Yes.

Q. You have a net present value of benefits listed there.

A. Yes.

Q. And there is a range from the low into the high end, correct?

A. Correct.

Q. I am not going to make you do the math, but I could add up the numbers under residential, under commercial, under industrial, under power gen for each category, correct?

A. Correct. If you look at page 7, you can actually see the totals so you don't have to do the ranges.

Q. And then I could take, for example, the residential 104 million and divide it by the total and get the percent that was for residential, correct?

A. No. You're ignoring the fact that the supply benefits accrue largely to the residential customer. You are ignoring the fact that the distribution and transmission benefits accrue largely to the residential customers because what happens is the reduction in costs gets passed through to the residential customer so what you are looking at under residential is the specific use of that technology by residential customers.

Q. That would be a direct benefit, correct, one that's quantifiable?

A. That would be one of the direct benefits. Remember, we said direct benefits were those that can be monetized. You can monetize the benefits of increased supply resources.

Q. Is there anywhere in this document that monetizes the benefits from transportation for residential customers?

A. The transportation I would say would be an exception. I would not accrue those to residential customers.

Q. Okay.

A. Okay? That's an end use piece that would accrue to the transportation and market which is as you said gas distribution companies and others that use natural gas vehicles.

Q. Okay. I think you mentioned distribution was one?

A. Yes.

Q. Is there anything in this document that quantifies or monetizes the benefit of distribution projects that is a direct benefit to residential customers?

A. Yes. It's 1.53 billion. If I have done my math work, it's the sum of the distribution and pipeline research. Those benefits accrue to the -- to the gas consumer shared as we said by the gas companies. I am adding up the distribution line and the pipeline so if you want to split this into three --

Q. You are going a little too quick. I can't follow you.

A. If you want to split this into three parts, the top three lines, residential, commercial, industrial on page 3 -- on page 7 gives you about 1.7 million in benefits. The distribution, this pipeline gives you about 1.5 million in benefits. The exploration and production line gives you about 1.6 billion in benefits so those are the three major benefits sets. All of those accrue to the gas consumer, be it that the last two -- the latter two also are shared by the distribution companies of the pipelines and the E&P company.

Q. That's what I was trying to get to.

A. Yes.

Q. The first ones, the first three, that's the amount it -- that's direct benefit to residential, the direct benefit to commercial, or the direct benefit to industrial customers.

A. That's not it entirely. Remember, we said if you can monetize the benefits to the residential customer, you can include those. Reduction in supply costs due to increased supplies directly accrues to the residential customers.

Q. But you haven't done that in this document, have you?

A. What we've done in this document is to document the reduced costs of finding, exploring for that gas, and producing that gas, and those are the benefits that I am saying are shared by the E&P companies and by the gas customers. Can you imagine where we would be today --

MR. SERIO: Your Honor --

A. -- if we didn't have that 1.5 million cubic feet from the gas supply?

MR. SERIO: I am going to move to strike the entire answer. I asked a very specific question about one category. His response is about a different category. I will get there, but I am trying to do it in a symptomatic answer, and he is not answering the questions I am asking.

MR. CAMPBELL: Your Honor, he asked the

question -- he asked him whether this document contains certain kinds of study, and he explained what the document showed. He's answering the question.

EXAMINER PIRIK: I am appreciative of the fact that you are giving an explanation that is easy to understand as far as the chart, but if you could just answer the question that he's asking and let him go through his series of questions, I think it may clarify the record a little bit.

THE WITNESS: Okay.

Q. All right. First line is residential. The 104 million is the direct benefit to residential customers, correct?

A. Yes.

Q. The 256 million for commercial is a direct benefit to commercial customers, correct?

A. Correct.

Q. The 1.360 million benefit is a direct benefit to industrial customers, correct?

A. Actually that's 1360 million or 1.36 billion, correct.

Q. So those three we can set aside. Now, you didn't say anything about power gen, transportation, but we were -- we went through those previously?

A. Yeah.

Q. Okay. So, now, we are down to the distribution and pipeline, and you said that's about 1.5 --

A. Billion.

Q. -- billion.

A. Correct.

Q. Now, that 1.5 billion is benefits that accrue both to customers and to distribution and pipeline companies, correct?

A. Correct.

Q. There's nothing in this document that separates how much of that 1.5 accrues to residential customers and how much accrues to pipelines or distribution companies, correct?

A. Correct.

Q. Under exploration and production you said it's about 1.6 billion, correct?

A. Correct.

Q. That's a benefit that goes to customers as well as exploration and production companies, correct?

A. Correct.

Q. And there's nothing in this document that quantifies how much is for customers and how much is for production or exploration companies, correct?

A. That's correct.

Q. And under exploration and production there would also be a benefit to a distribution and pipeline company because without gas they go out of business, correct?

A. I believe if you look at the -- at the return on equity of the company, it's not dependent on the price of natural gas. They get their money and I am not a rate expert, but I believe the price of natural gas is a passthrough, and so I would say the company gets its return on equity whether or not the gas is available. Now, so I would have to say that that benefit, no, I wouldn't presume that benefit of exploration and production accrues to the gas companies or the pipelines, not in a restructured world.

Q. If there is no gas for the production company to produce, is there gas for the pipeline to move from point A to point B out?

A. We are talking about no gas.

Q. That was my question, sir. I said if there is exploration and production benefits, then those benefits also accrue to a pipeline company because they produce gas that a pipeline company can move from point A to point B, correct?

A. That is correct.

Q. And, in turn, if they produce gas, then there is gas for distribution companies to move through its system and to sell to end-use customers.

A. That's correct.

Q. Okay. So there has to be some benefit to pipeline and distribution companies from the exploration and production projects also, correct?

A. The gas companies don't see those savings. Those are savings in exploring and producing the gas that -- the gas companies no longer deal with the price of gas.

MR. SERIO: I didn't say savings in my question, your Honor. My question was --

A. Were you talking indirectly benefits or directly benefits?

Q. Indirect benefits.

A. There are indirect benefits to the gas company because there is gas versus having no gas available, yes.

Q. If there is less gas available, then pipelines have less gas to move, correct?

A. They don't make their money -- as I said, I am not a rate expert, but my understanding pipelines don't make their money on the volume of gas they move. They make their money on selling capacities and return on equity of the pipe in the ground.

Q. If there is less gas for a pipeline to move, wouldn't you agree that customers need less capacity to move that gas?

A. No, not necessarily because the capacity is determined on the worst day of the year and that's how the pipeline sells its capacity, so if you want to say there are indirect benefits, I think that's fine, that is, the companies, the distribution and pipeline companies, would rather have natural gas than no natural gas. That's certainly true but these dollar benefits don't accrue to the gas companies. We have separated the price of gas from what the distribution and transmission companies can -- can accrue for themselves.

Q. Is there anything in this document, your testimony or the attachments, that breaks down those direct versus indirect benefits?

A. No.

Q. So that's entirely based on your analysis; that is not contained in the testimony?

A. When you say that, you mean the distribution of benefits between the various people in the value chain?

Q. Yes.

A. Yes, that's not contained in the analysis.

Q. Okay. Now, back on page 2 of your testimony --

A. Okay.

EXAMINER PIRIK: Mr. Serio, I was kind of waiting until you finished the chart.

MR. SERIO: I have considerably more. We can take a break.

EXAMINER PIRIK: I was wondering if this was a good time to take a lunch break.

MR. SERIO: That would be fine, your Honor.

EXAMINER PIRIK: We will reconvene at 1:45.

(Thereupon, at 12:41 a lunch recess was taken until 1:45 p.m. of the same day.)

Friday Afternoon Session,

August 1, 2008.

- - -

EXAMINER PIRIK: Mr. Serio.

MR. SERIO: Thank you, your Honor.

- - -

RONALD EDELSTEIN

being previously duly sworn, as prescribed by law, was examined and testified further as follows:

CROSS-EXAMINATION (Continued)

By Mr. Serio:

Q. Good afternoon, Mr. Edelstein.

A. Good afternoon.

Q. On page 2 of your testimony in your answer 5, you list who your customers include and then indicate other organizations. And this morning I think in response to Mr. Rinebolt you identified LDCs, Federal Government funding, state R&D, and the private sector. Is there anything that would fall under other organizations that I didn't just describe?

MR. SERIO: Off the record.

(Discussion off the record.)

A. I think that's the list is -- I think the list is complete. There may be some international organizations but they would fall under one of those -- is this on?

Yes, the list is complete. There are some international organizations but they would fall under the same categories of private industry or GS companies or state-led organizations.

Q. Are you familiar with the concept of demand-side management, DSM?

A. Yes, I am.

Q. We spent some time this morning talking about direct and indirect benefits. When you look at demand-side management, you apply the same kinds of direct and indirect benefits, applications to it?

A. Well, I am not --

MR. CAMPBELL: Objection, your Honor. Objection. There is nothing about DSM in Mr. Edelstein's testimony. This is beyond the scope of his direct.

EXAMINER PIRIK: Mr. Serio, does this tie back in with the rest of his testimony?

MR. SERIO: Well, to the extent that demand-side management addresses a lot of the same kinds of programs and functions that the GTI testimony talks about like more efficient furnaces and then it also ties back to the safety issues, I just wanted to see if his standard of direct and indirect was one he applies consistently across them. I believe one of his residential programs was the increased efficiency for residential furnaces and that is a demand-side management issue as well as one that's an issue for the GTI research and funding.

EXAMINER PIRIK: Mr. Campbell.

MR. CAMPBELL: First, anything beyond -- anything about DSM is beyond the scope. There has also been no foundation he has any involvement or knowledge of DSM programs nor has he been put forth as an expert on what's direct or indirect, so all the justifications, I mean, I just don't see how this question --

EXAMINER PIRIK: I think with regard to the DSM I am going to sustain the objection.

MR. SERIO: Thank you, your Honor.

Q. On page 3 of your testimony you indicate GTI relies on state-based approval of R&D surcharges? That's -- those are voluntary or mandatory surcharges?

A. Those are voluntary for the gas

distribution contracts.

Q. And do you know if they are voluntary or mandatory for the customers of those distribution companies?

A. I presume the customer would pick up those charges if they are approved by the Public Utilities Commission.

Q. Do you have any understanding as to whether those charges are applied to all customers meaning commercial, residential, and industrial or if they are only applied to residential customers?

A. I don't know the details of the specific rate proposal including our R&D, no.

Q. To the extent that we talked about direct and indirect benefits, you would agree with me that many of the benefits that you identified this morning, both direct and indirect, would apply to residential, commercial, and industrial customers, correct?

A. Correct.

Q. So it would be fair that residential, commercial, and industrial customers all pay for the research that provides the direct and indirect benefits to them?

A. That would seem to be fair, yes.

Q. Now, to the extent there might be customers on the system that don't pay GTI-related cost, those customers would still receive the benefits of GTI research, would they not?

A. Yes, those customers would -- you are talking about residential, commercial, and industrial customers that didn't pay?

Q. Yes, any customers that didn't pay.

A. Yes, there is -- there is a free rider issue involved.

Q. Now, you talk about a lot of the research that GTI does in your testimony, and I think you might have indicated this morning that there are other entities that are also involved in the research, correct?

A. That's correct.

Q. And some of those efforts are joint with GTI and some are done independent of GTI, correct?

A. That's correct.

Q. Would you say that GTI does the majority of natural gas related research in the United States today, or would you say that the majority of natural gas related research is done by other entities?

A. Okay. I think you would have to break that down. Distribution R&D GTI does the majority of that work. There's only one other entity in the country that does distribution R&D. It's a small R&D management group in New York called Ni Search. Pipeline research we do about half the research. The other is done by PRCI, Pipeline Research Company International. And supply R&D I would say the vast majority of the supply R&D is done by the exploration and production companies themselves today or the -- or the gas field service companies. So very changed from the description of what I had in here which describes a lot of what happened under the FERC program in the first couple of pages.

Q. Okay. Now, I think you indicated this morning that the condensed furnaces, that was a project that GTI was involved in developing; is that correct?

A. That's correct.

Q. And I don't remember if you said, was GTI solely involved with that or was that a project that other entities were involved with?

A. GTI was solely involved in that. That started in the very early days of GTI so it might have been possible that before 1977 American Gas Association Research Labs might have been funding it but after -- after 1977, there were no other organizations that funded that research.

Q. Now, on page 4 of your testimony you indicate that there is a savings of reductions in gas load resulting in savings to all Ohio consumers because of reduction in gas demand. Do you see that?

A. Yes, yes. You are talking about line 11 and 12 on page 4?

Q. Yes.

A. Yes.

Q. And I asked you earlier if you were familiar with the term demand-side management. You are familiar with that term?

A. I am familiar with it, but I am not an expert in it.

Q. Understand. And demand-side management as you understand it involves energy efficiency, correct?

MR. CAMPBELL: Objection, your Honor. There is no foundation that he has any knowledge in demand-side management. He has disavowed he is an expert in it and, again, it's beyond the scope of the direct. This is the same issue.

MR. SERIO: Well, his testimony directly talks about reduction in gas demand which is the entire focus of demand-side management. I want to understand if he is talking about the same kind of thing or if this is different in his testimony than what he understands in demand-side management. He said he is not an expert, but he is familiar with the term demand-side management. I think I have the right to ask him how much his familiarity is and if it's similar to what his understanding is on the savings that GTI research project showed based on his testimony claim.

EXAMINER PIRIK: I will allow the question but, again, he is not an expert. That is not what he is here to testify to for demand-side management.

MR. SERIO: I understand that.

EXAMINER PIRIK: We will see where this goes.

A. The energy efficiency of this device and the deployment of this equipment from what I understand of demand-side management is well beyond R&D. In fact, it includes deployment but not only of energy efficiency equipment but also insulation, tighter house, better windows, et cetera, so there will be energy reductions as a result of demand-side management, and they may be of the same order of magnitude we are talking about here. However, the benefits that we refer to above are without misusing the term direct benefits to the customers that are using the equipment, that is, their savings to that customer by using that equipment minus the additional cost of that furnace. It's not the general savings to all customers from lowering of gas demand.

Q. Okay. And to the extent you are talking about reduction in gas demand on page 4 of your testimony, that's the benefit that goes to all users of natural gas and not just the individuals that are affected by that particular piece of equipment, right?

A. Correct. If you are referring to the 4 billion, 4 BCF, rather than the $288 million, the 4 BCF reduction, that benefit is spread over all the consumers all over the country would be the reduction they would see to the lowering of gas demand.

Q. Okay. On page 5 of your testimony you indicate "GTI funding has produced a new generation of natural gas engine-driven, absorption, and desiccant-based cooling systems." Is this an area where it's been solely GTI or has there been other entities involved?

A.   There have been other entities. The California Energy Commission has been funding this. The Department of Energy has been funding this fairly extensively. The Japanese have done some research in this area, so it is not only the -- not only GTI involved in this.

Q.   And then I believe you talk about the development of heat pumps with efficiency ranges of 100 to 120 percent. Again, is that solely GTI or is there other entities funding that research?

A.   There are other entities funding that research, very similar, state R&D, Department of Energy as well as GTI, and the Japanese.

Q.   On page 6 of your testimony you talk about "GRI designed improved heat exchangers and development" -- "and developed vent installation guidelines." Do you see that?

A.   Yes.

Q.   Is that GRI -- was that GRI solely or were there other entities involved in that?

A. That was GRI solely. That work was not being done because it fell between the equipment manufacturers, the gas companies who didn't work inside the house, and the HVAC, heating, ventilating, and air conditioning installers. No one was providing proper vent design guidelines and so that was a pure public benefit, but it actually resulted in direct benefits to the homeowner that installed it from reduced inefficiency furnace failures. Those guidelines now go out with every mid-efficiency furnace, and we were the only ones involved in that.

Q. That was GRI, not GTI? Let me rephrase.

That was done when GTI was known as GRI in the past and that development hasn't occurred since the organization has become GTI, correct?

A. That particular development hasn't but we are still undergoing venting research but that particular one we refer here to the mid-efficiency furnace was done under GRI. That transition occurred in about 2000.

Q. On page 7 of your testimony you talk about LDCs requiring leak inspections by walking surveys and that the OMD, the optimal -- optical methane detector, allows LDCs to convert to driving surveys. You talk about a significant reduction in response time and reduction in labor costs. Anywhere in your testimony is there any kind of quantification of the reduction in response time or the reduction in labor costs?

A. Give me a second, please.

Q. Sure.

A. No, there isn't.

Q. Do you know if there is any quantification of those savings anywhere in the company application?

A. No, I don't.

Q. Bottom of page 7, the third bullet point it says enhancing safety. I think you use that a couple of times in that paragraph.

A. That's correct.

Q. Is there anywhere in your testimony that does any kind of quantification of the enhanced safety as we discussed earlier this morning?

A. Not with respect to pipeline integrity. We do quantify the benefits of the enhanced safety of the venting systems we just referred to. That is discussed in the benefits analysis but not at the pipeline integrity. Here we covered the benefits of using direct assessment which is an analytical tool versus hydrostatic testing where you fill the pipe with water and see where it leaks out or internal inspection of pigging and we do a direct calculation of the benefits of -- of more advanced techniques to detect high risk section of pipe verses physically testing every mile, every inch of pipe but not for the safety side of it.

Q. Okay. Now, if I understand your testimony correctly, one of the reasons that you think the company should be allowed to recover the costs of the GTI funding is because the funding has resulted in technologies or other functions that have produced benefits for customers, correct?

A. That's correct.

Q. To the extent that there has been research that has not produced any benefits and should customers be required to pay for that research?

A. Research isn't like a bank account so you can't put money in it and expect 5 or 10 percent a year. If you are doing any kind of decent R&D, the track record is only about 25 percent of it will be successful so there are technical risks involved.

There are risks once you get it out into the field. There are risks that manufacturers won't pick up the technology and sell it because the benefits do flow through the consumers so there are many projects that aren't successful. The beauty of R&D if you are doing it right, the winners that you have will more than carry the cost of those that don't make it, so when you say unsuccessful, you -- if you are doing real R&D and pushing the technology, you would expect a good percentage of the R&D to be unsuccessful, but you would expect the pieces that make it through to -- to make up for that difference so that's why I answered the question that way.

Q. Can you point to anywhere in your testimony where you indicate that the company should be allowed to recover the costs of GTI research for the sake of research and not because it resulted in benefits that you are able to quantify or claim similar to those in the attachment to your testimony?

A. No. We -- we -- GTI isn't a basic research lab. We are not a national laboratory. We don't do research for the sake of research. All of our research is really applied research and development. It's omission oriented. It all has specific goals and -- and is designed to -- if it's successful to produce benefits for gas consumers.

Q. Now, on page 9 of your testimony you indicate that "the choice of specific projects is up to DEO," so DEO can identify any one or a number of projects where they want the funding, in this case the $600,000 to go, correct?

A. That's correct.

Q. They could apply it all to 1 project or they could apply it equally to 10 projects or they could divide it any way in between there, correct?

A. The OTD program for people that join it offers a menu of projects, some from GTI, some from other organizations. The OTD members get to choose how to place these dollars among these -- among these projects and part of the description of the project is a list of benefits to the consumers and the companies. And once a year we produce a report that's publicly available that OCC or the Commission or Commission staff is free to pull from our website or have us send it to them that actually lists the projects we have worked on and list the benefits of each project at least qualitatively, if not quantitatively, so that report is publicly available and you can actually see every project that was funded by OTD.

Q. Okay. But what I was getting at was the company can specifically identify how much of the 600,000 it wants to apply to any one or a number of projects that it identifies that it would like to participate in?

A. That's correct. Within the OTD portfolio the company has a choice of projects.

Q. Can the company change that from year to year or once they make that selection, does it stay that way until the project is completed?

A. Since the research projects are typically two to five years long and we have milestones or gates in the projects, companies usually choose funding up to a particular gate, but beyond that point they are free to not invest in that project and, yes, to shift money to other projects if they want to.

Q. And you indicated that those milestones occur every two to five years?

A. No, no. The projects from -- from initial start to completion of the research and development are two to five years long.

Q. So --

A. So --

Q. So from year to year the company would have the opportunity to review what occurred in the past year and determine if they wanted to continue it at that level or change the level of funding within the overall dollars that they have?

A. That's correct.

Q. It's not unusual for companies to do that, is it, change from year to year how much they are funding a project?

A. No, that's not unusual but typically companies will -- if they are interested in a, you know, like there is an appreciable portion of plastic pipe like here in Ohio and need a plastic pipe locator, they need a plastic pipe locator, and that need isn't going to change from year to year. As long as the project is successful, they will keep funding it. If the project has some technical changes, the company may decide we have pushed this far enough. It is not going to make it with underground radar or the acoustic technique. We want to stop this project, and the companies have the choice to do that at the appropriate gate so --

Q. I'm sorry.
A. -- so they can terminate the project.
Q. They can turn around and apply that funding to a different project where they might feel the dollars would provide a better benefit.
A. Correct.
Q. A better return for their investment.
A. Correct, better benefit.
Q. You mentioned the term OTD. Can you define that for me, please?
A. Sure. OTD is operations technology development. It's actually a separate corporation. It is composed of only those members that join that, and to eliminate this free rider issue we talked about before, only those companies that invest in OTD receive the intermediate results of those projects and the technical reports from those projects and the field tests of those projects in their own service territory which is very important for operations technologies.
Once the technology is commercialized, of course, anybody can buy it. We don't restrict the sales once it hits the street, but to deal with the free rider issue, OTD we ask for -- OTD has asked

because it's really run by a natural gas industry board asked that only those companies that fund the projects get the results of those projects and get to field test the projects in their own service territory.

Q. I believe you used the word "intermediate" in your description and in your answer.

A. Okay.

Q. What do you mean by intermediate?

A. Intermediate test results, in other words, what happens when you test it in the laboratory, what happens when you've tested it, you know, in the field for the first time, when you do a multiple field test, what are the results -- how do the technical results compare to the project goals?

Q. But once the project becomes commercially available then all of the testing results would be available to anyone interested in purchasing the project commercially, correct?

A. No. What's available is if the product -- let's say that plastic pipe locator is available on the market. Any company can buy that plastic pipe locator. We don't restrict sales, but the technical results are still proprietary to the companies that invested in it so, no, in order to deal with the free rider issue, we have really kept the results within the membership of OTD, so the 20 companies or so that belong to OTD can share those results and those that aren't part of it can't share the technical results of this.

Q. What would be the benefit of having the underlying -- I'm sorry, I don't remember the exact terms that you used, but the proprietary information once the project has gone commercial? What's the benefit of getting that OTD knowledge?

A. Okay. I will give you an example. We did a pipeline coating activity, 30-year accelerated pipeline coating test. We did it in about a year and a half because we heated up the gas and had different soil types, et cetera, to statistically accelerate the failure of the coatings. The detailed results of each of those manufacturers was made available to the members of OTD. What was on the outside was a list of manufacturer A, manufacturer B, manufacturer C, so the companies that weren't members really couldn't see which of those specific coatings -- that was the agreement we had with the manufacturer, the specific coatings and exactly what happened.

Another example would be plastic pipe locators might not work in soil with a certain electrical property called dielectric consummate or wouldn't work in clay. It would only work in sand, and so the detailed results are really important for a company to decide whether or not to test that in their -- and to use it in their own service territory, so otherwise you just have to rely on the manufacturer claims that this plastic pipe locator will work anywhere so.

Q.   Okay. Let's talk about the coating. I think I understand coating. So you did all those tests on coating, and when it's commercially available, the manufacturer goes to an LDC that was not a member and says this coating will work in these four conditions, and the manufacturer knows that because they were a member of the OTD that did the funding.

A.   Well, they are not a member of OTD, but they participated in the test by supplying us with samples.

Q.   Okay. To the extent they participated, they would know that, correct?

A. They would know which of the samples was theirs but -- and they could say, yeah, ours is sample C, but the nonmembers really wouldn't know that, and so they would have to take the manufacturer claims as they stood. It's a very fine line between making sure that the benefits of this, you know, reach the consumers and so what we have tried to do is to say the benefits are this ought to reach the member companies and the consumers that have funded this research and in order to get people to fund additional -- additional people to fund the research.

Q. So the OTD information would allow an LDC to know if the manufacturer claims were legitimate and not being oversold?

A. Correct.

Q. To the extent that an LDC did not have that information --

A. Correct.

Q. -- and they relied on the manufacturer's claims and the claims didn't live up to the end result, would you presume that the LDC would have some ability to go back to the manufacturer because the product that they purchased didn't live up to the claims that were made?

A. Well, I am not a lawyer so I don't pretend to be, but I would presume given the warranty there might be some, you know, ability to do that, yes.

Q. Okay.

A. But you would rather not put pipe in the ground or coatings in the ground that you expect to last for 30 years and have them last for 5 years for a whole variety of reasons, safety, integrity, deliverability, and cost.

Q. If Dominion did not fund GTI, would GTI research continue tomorrow?

A. Yes, GTI research would continue tomorrow.

Q. If no LDCs funded GTI, would GTI research continue?

A. No, no, it would not. We would eventually go under because the federal money that we have, the state R&D money that we have all require co-funding and where does that co-funding come from, where does the cash come from aside from the 1.6 million in royalties? It comes from the money we get from the gas companies so that provides the basis not only for the -- for the gas company funding but also for the R&D agent -- state R&D agency and the federal R&D agency funding so all those programs would collapse and all we would be left with would be the, you know -- the piece that is private sector research that wanted to test their devices in our laboratory which is all proprietary so, no, if no LDCs participated in our program, GTI would fold. We would not be able to stay in existence.

Q. So you are saying the private sector funding would not qualify as matching funds for the state and federal dollars?

A. No, because it's proprietary. See, when you fund a project with the federal or state governments, they want the results of those projects made public. And the stuff we are testing with some of these let's say gasification manufacturers is really, really proprietary. We are not even allowed into the laboratory if we are not running the actual test. And so that is not a public benefit. That really is a private benefit and that kind of research deserves to be paid for by the manufacturer or the entity that's putting it into place so, no, that would not qualify for the federal or state dollars.

The reason we call it collaborative,

excuse me for a second, is that the companies leverage their dollars 10 to 1 or 20 to 1 funding with the other LDCs and then we take that money and we go to let's say the Department of Transportation and say here is 50 percent co-funding, fund that project, so that 20 to 1 leverage becomes 40 to 1 leverage, if you will, so it's really, really important that we have this cash in order to -- in order to proceed on these projects.

Q. GRI preceded GTI in existence, correct?

A. Correct. GRI and also the Institute of Gas Technology, both of those organizations were combined into the Gas Technology Institute.

Q. And you are familiar with how GRI was funded, correct?

A. I am very familiar with that.

Q. At one time would you agree that GRI was funded through pipeline surcharges?

A. Correct.

Q. Were those pipeline surcharges mandatory or voluntary?

A. They -- it's a little known fact but those were voluntary for the pipelines. A pipeline could resign just by writing us a letter. By the filed rate doctrine they were mandatory for the distribution companies, and they were also passed through to the consumer.

Q. To the extent they were voluntary and pipelines withdrew, their funding GRI continued in existence, did it not?

A. It did but the pipelines -- we only had one pipeline withdraw after restructuring in 1993 and so the pipelines really were very heavily involved in this research until the restructuring of the pipeline industry. When the pipeline started to compete with each other, they no longer wanted to share researching information and that's when the breakdown in collaborative funding and the FERC funding occurred very similar to what happened to the Electric Power Research Institute with electric industry restructuring and what happened to the Bell pool with the Baby Bells. Once they started competing with each other they didn't want to share research results, and so the collaborative research agreement, if you will, between the organizations fell apart.

Q. Isn't it true that although only one pipeline withdrew its funding, other pipelines threatened to withdraw their funding not because they didn't want to share results but because it would give pipelines a competitive advantage or disadvantage in pricing?

A. That is true. That was the first thing that happened starting in '93 when pipelines went to common carriage. They were afraid -- let's say there is five pipelines coming into Chicago -- that if four of the pipelines carried the charge and one didn't, the one pipeline that didn't carry the charge would have an advantage of, you know, 1.74 cents per MCF, that's correct.

Q. Okay. Now, on page 15 of your testimony you indicate "GTI is recommending that revenues equivalent to 1.74 cents per MMBtu be collected from DEO customers," and when you indicate customers there, you are indicating residential, commercial, and industrial customers, correct?

A. We didn't differentiate, right.

Q. By not differentiating you mean all three categories of those customers?

A. That's correct. But, however, the DEO elected not to accept the 1.74 cent charge and only accepted -- only asked for 30 percent of that amount.

I just want to make that clear.

Q. But even to the extent it's 30 percent of that charge, you are still recommending it be collected from all customers.

A. It would be equitable if it was collected from all customers. Now, the OTD charges on a per meter basis, so it could well be that -- I don't know the structure of the arrangement, but the OTD charge is a 50 cent a meter charge, so it could well be it is collected from all customers.

Q. To the extent -- I'm sorry. Are you done?

A. Yes.

Q. To the extent that it's not collected from all customers, is it GTI's recommendation that it would be collected from all customers?

A. We really leave that up to the Commission and the company and the consumer advocate to decide the best way to collect depending on the local situation. In many cases, for instance, the industrial customers have the ability to bypass the distribution company and so the industrial customers get a severe discount and so the GTI charge since 1993 actually wasn't carried by industrial customers that had a discount, so in that case we wouldn't expect those industrial customers that are on interruptible rates or transportation only to be carrying this charge.

Q. Even though -- I'm sorry.

A. Just because of the fact they could simply bypass the distribution companies and go directly from a pipeline.

Q. But those -- those customers that could bypass would still get all the same benefits as a customer that couldn't bypass the system, correct?

A. That's correct. That's correct, although presumably if they bypass the distribution system, then they wouldn't get the benefits of distribution system O&M research.

Q. Would they have the ability to get the benefits of distribution O&M research to the extent it will stand ready to search their needs in the future if they elected to go back to the distribution pipeline?

A. Yes.

Q. Your Attachment RE-7.1 is an abstract dated May, 2004. Is there a more current abstract available?

A. No. That's the last one. We were required to file benefits papers with the FERC every year, and the benefits papers covered research that had been commercialized into the marketplace over the last five years so this is actually not a compilation of the proposed projects for OTD. This is a compilation of research that occurred 5 to 10 years previously under the FERC program including the benefits analysis.

Q. Right. So you haven't done anything more -- when would you expect to do the next abstract?

A. We don't do these any more. What we will do is if a company or commission asks, we will -- we will do a benefits analysis if required for the particular company or the particular jurisdiction.

Q. So if the Ohio Commission made a contingency of the $600,000 funding that it receive a report that would break down the funding that DEO chose to participate in, that report could be made available to the Commission and the other parties so that we could review if the funding was going to projects that produced results that, in turn, came back to customers in Ohio, correct?

A. That is correct. However, research as I said isn't like a bank account, and so the projects being two to five years long you wouldn't expect benefits to start accruing the first year or even the second year after the projects were funded. And so the benefits would come out, and we think they will be on the order of 4 to 1 to 8 to 1, but they will come out over time, and they will be spotted. Not every project will have benefits to it but so projected benefits could certainly be calculated. Actual benefits would depend on the products, the R&D being completed, the product hitting the marketplace, the company buying the product, and the product being used and that takes some time.

Q. Can I assume when you do such a report when it's requested, that all the factors that you just mentioned in your answer would be laid out in that report?

A. Yes. In fact, they are in this report but, remember, the FERC program has been funded since 1977, so the projects discussed in here that were commercialized I think 1999 through 2003 as indicated on the first page of that attachment, in fact, that research was ongoing from 1994 through 2003. And so there was a continuum of projects and a continuum of results and those are what you see here. You don't see the results of those projects that were funded in 2003. They haven't hit the marketplace yet.

Q. But you do reports like that on an annual basis if one is requested?

A. We can do reports like this on an annual basis if one is requested.

Q. Do you do that for any of your distribution company members today?

A. We do that for one company today that requests that. That is Niacor requests that.

Q. And the report that Niacor gets lays out everything for Niacor or the commission or anybody else in the state, correct, that's going to review that?

A. That's correct.

Q. So there is nothing that would prevent a similar report to the Ohio Commission regarding the DEO funding?

A. Such a report could be -- such a report could be developed. Now, remember, most of the report is projected benefits.

Q. I understand and that's what Niacor gets right now.

A. That's what Niacor gets. When the technology hits the marketplace, we could calculate -- we could certainly calculate actual benefits.

MR. SERIO: One minute, your Honor.

Q. You indicated there was a benefit to being an OTD member because they got access to proprietary information. There is an additional cost of being an OTD member?

A. No. The -- there is a membership cost of 50 cents per meter for a company up to a maximum of $750,000 and a minimum of 150,000, so to be an OTD member for this many customers, Niacor has to come in at 600,000 so actually that is --

Q. You mean Dominion instead of Niacor?

A. I'm sorry, thank you very much. Dominion, that Dominion would have to come in at 600,000. Once they are in none of that money is expended until the company decides which companies to fund but once they have access to not only the project they fund but all the projects within OTD they have the results of all of those projects. They may not get to field test the ones they don't fund, but they have the results of those projects.

Q. So the only cost you are talking about is that there is a minimum level of investment they have to make.

A. That's correct.

Q. It's not a separate cost in addition to what they are putting in toward the research.

A. No, there is no separate cost. That is the 600,000 per year is the -- is the investment. There is no additional cost to the company.

Q. Now, that minimum investment that DEO has to make, can they split that between OTD and UTD projects?

A. No, they can't because those are two separate entities and each have their own board and the OTD requirements are such that for Dominion to get in, they have to invest 600,000 minimum and so that money really can't be split between OTD and UTD. UTD would require an additional investment, just the way the companies are set up and the boards have been structured and the requirements there.

MR. SERIO: Thank you, Mr. Edelstein. That's all I have.

EXAMINER PIRIK: Mr. Reilly.

MR. REILLY: We have no questions, your Honor.

EXAMINER PIRIK: Mr. Campbell.

MR. CAMPBELL: I have a few questions.

- - -

REDIRECT EXAMINATION

By Mr. Campbell:

Q. You were asked a few questions about quantification of benefits. Does the ability to quantify benefits or savings depend on the specific circumstances of the activity or the operation?

A. Yes, certainly.

Q. Would some quantifications of a benefit be in the nature of an estimate as opposed to, you know, a track of a particular dollar cost that should be contributed to certain cost accounts?

A. I would go even further. I would say all the benefits calculations that you see in this paper are estimates of benefits and not some. We don't go to particular cost categories into the utility account to look at what this technology did, and we don't look at the slips so this is all estimates of how much per foot it costs to put this in, how many cast iron joints per mile, how many might fail, all of these are based on assumptions and assumptions of failure rates and what the new technology would do versus the old technology. So these are all estimates.

Q. You were also asked a number of questions about the attachment to your testimony marked Attachment RE-7.1. What is Attachment RE-7.1?

A. That attachment is a document that we were asked to file with the FERC each year while the FERC program was under way. It ended in 2004 as we discussed, and it was a summation of the benefits of the FERC program, products that reached the marketplace within the last five years, and the net present value of those benefits compared to the last five years' worth of costs. So none of those projects shown there are actually being proposed for funding by DEO and many of the categories of the projects in there like exploration, production, research aren't even on the table here. They are not proposed for funding for DEO. NGBs, power generation are proposed for funding. In fact, the end use projects, residential, commercial, and industrial aren't proposed for funding either and even the distribution projects listed here have already been completed.

MR. CAMPBELL: So table 2 -- strike that.

One more question. Can companies -- no further redirect.

EXAMINER PIRIK: Mr. Rinebolt.

MR. RINEBOLT: No questions, your Honor.

EXAMINER PIRIK: Mr. Serio.

MR. SERIO: Thank you, your Honor. I have one.

- - -

RECROSS-EXAMINATION

By Mr. Serio:

Q. You indicated that the quantifications were estimates. I asked you a whole slew of questions about whether there were specific quantifications in your testimony, and you indicated there weren't. Are there estimates of the quantifications that you indicated there weren't in your testimony?

A. The estimates I indicate are shown in the table in the FERC report, that's the exhibit, and then in that NiSource document I talked about. Those are the estimates of benefits.

Q. And the estimates in table 2 are

estimates of past projects, not anything that DEO is proposing to fund going forward?

A. That's correct. They are past projects.

Q. So there is no quantification in your testimony of any of the benefits that Dominion would get from any of the projects that they are proposing to fund on a going forward basis, correct?

A. That's correct. There is no quantification of benefits to Dominion or its customers of the projects proposed going forward.

MR. SERIO: Thank you. That's all I have, your Honor.

EXAMINER PIRIK: Mr. Reilly.

MR. REILLY: No questions, your Honor.

MR. CAMPBELL: One more question.

EXAMINER PIRIK: No, not another question. I am asking whether or not it's time to move the document.

MR. KUTIK: Can he follow-up with redirect?

EXAMINER PIRIK: Well, I wasn't going to go reredirect. I was doing one round and recross and redirect.

MR. KUTIK: Can I be heard?

EXAMINER PIRIK: I can be heard, but I was going to do one round of redirect and one round of recross.

MR. KUTIK: Well, I guess my only point is we are the proponent. We should be able to go first and last. That's my point.

EXAMINER PIRIK: That is not how we run our hearings but I appreciate your comment.

MR. KUTIK: Well, thank you.

MR. CAMPBELL: The company would move DEO Exhibit 7.0 into the record.

EXAMINER PIRIK: Are there any objections?

MR. REILLY: No, your Honor.

MR. SERIO: No objection.

EXAMINER PIRIK: Hearing none DEO Exhibit 7.0 shall be admitted into the record.

(EXHIBIT ADMITTED INTO EVIDENCE.)

EXAMINER PIRIK: Thank you.

MR. KUTIK: At this time, your Honor, we would call Mr. Robert Taylor.

\- - -

ROBERT D. TAYLOR

being first duly sworn, as prescribed by law, was examined and testified as follows:

DIRECT EXAMINATION

By Mr. Kutik:

Q. Please introduce yourself.

A. My name is Robert D. Taylor, Managing Director of Corporate Taxation for Dominion Resources, Inc.

Q. Sir, do you have in front of you what's been marked for identification as DEO Exhibit 4.0?

A. Yes.

Q. What is that?

A. That's my testimony.

Q. Do you have any additions or corrections to make to that testimony?

A. No.

Q. If I asked you the questions that appear on this exhibit, would your answers be as they appear in this exhibit?

A. Yes, they would.

MR. KUTIK: No further questions, your Honor.

EXAMINER PIRIK: Thank you.

Mr. Rinebolt.

MR. RINEBOLT: No questions, your Honor.

EXAMINER PIRIK: OCC.

MR. SERIO: Thank you, your Honor.

\- - -

CROSS-EXAMINATION

By Mr. Serio:

Q. Good afternoon, Mr. Taylor.

A. Good afternoon.

Q. It's my understanding that you are the Dominion witness responsible for tax-related base rate items as listed on DEO Schedule B-6, correct?

A. That is correct.

Q. On the application Schedule B-6 Dominion reflected an allocated total and other rate base items of approximately $220 million that was labeled deferred income taxes in account No. 283 pension. Are you familiar with that?

A. Yes.

Q. And before any DEO adjustments were to be made to that in column 4 -- strike that.

The $220 million that are labeled deferred income taxes before any DEO adjustments are made in column 4, would that amount be used to reduce base rate?

MR. KUTIK: Excuse me, your Honor. I ask if the witness has the schedule in front of him.

THE WITNESS: I do.

EXAMINER PIRIK: Could you hold on just a minute until we find it.

MR. SERIO: Your Honor, I could make it easier. I have copies.

Q. Mr. Taylor, so if we look on Schedule B-6 under column 3 where it says allocated total $229 million shown there, that's a reduction to base rate, correct?

A. When you say reduction to base rate, it's included in the 418 million?

Q. Yes.

A. Yes. I would not classify it deferred taxes. I would classify deferred taxes as a reduction to rate base, yes.

Q. Okay. And then in the adjustment 4, that's where the company is suggesting that the 220 be added back into rate base, correct?

A. Well, once again, I would say that we are eliminating it as an adjustment to rate base.

Q. Now, why would the accumulated deferred income taxes be a reduction to the base rate?

A. You mean to rate base?

Q. Yes.

A. Yes. Well, deferred taxes in a rate proceeding, deferred taxes are typically an adjustment to rate base, reduction of rate base in cases where those deferred taxes are being collected from ratepayers.

Q. Would you agree with me that account 283 typically serves the function of reducing the amount of rate base?

A. If those amounts -- if those amounts were collected in cost of service and if -- we were collecting them in cost of service, it would, in fact, be appropriate to reduce those rate base by those amounts.

Q. In this case 283 were collected in the rate base originally, right?

A. When you say collected in --

Q. They were collected from ratepayers initially.

A. No, I wouldn't say that. I don't think that you can necessarily trace the dollars of the deferred taxes back to being collected from ratepayers. If you recall, the earlier rate case that Dominion East Ohio had was not a fully litigated rate case. It was a settled rate case, so theoretically it's not clear what portion of these deferred taxes were in that original rate case, and it's not clear that to the extent that the volume of those deferred taxes over time were different. Even if they were in the original rate case, there's no way to trace those dollars.

Q. When you refer to the prior rate case, do you mean the 93-2066-GA-AIR case?

A. I believe that's the rate case.

Q. And that's the last rate case that Dominion East Ohio had? The company has not had any rate proceedings since then, correct?

A. Not that I am aware of, no.

Q. And you indicated that was the settled proceeding, correct?

A. It was what we call a black box settlement.

Q. Do you know the previous rate case to the 1993 case --

A. No.

Q. -- when that occurred?

A. I do not.

Q. Are you familiar with the difference between Dominion's book accounting treatment for pensions and Dominion's tax treatment for pensions that resulted in the accumulated deferred income taxes?

A. I am familiar with the tax deductions. I am familiar with the accounting pronouncements that Dominion uses for purposes of pension accounting.

Q. Can you explain to me the differences then briefly?

A. Well, the accounting methods that are used are based on -- and I would defer to Mr. Ives's testimony on that, I am not an expert in the accounting under 158 or FAS87, for tax purposes the deduction would be based on the actual contribution to a -- to a 401A trust base, the deduction would be based on Internal Revenue Code 404 and that deduction would also be based on the standards in Internal Revenue Code Section 412 which determines the actuarial calculations for the allowable deduction. I can tell you that I -- as long as I have been -- I started the tax department at CNG prior to the merger in 1986, and I am not aware of any contribution to the pension fund as long as I have been there.

Q. Okay. CNG being Consol --

A. Consolidated Natural Gas Company that was who I worked for before the merger with Dominion Resources in 2000.

Q. And you indicated going back to 1986 I believe you said?

A. That's correct.

Q. And I didn't --

A. I am not aware of any tax deduction that was taken on the tax return for a contribution to an -- and, therefore, no contribution to a qualified 401A trust.

Q. Okay. Now, within the explanation that you just gave can you explain to me what the allowable tax expense is for the pension?

A. Well, the allowable tax expense is based on calculations under Section 412. It takes into consideration actuarial computations and normal costs. There's -- it's a -- there's a few different requirements to calculate that. Once again, I have not -- we haven't had to make that calculation so we haven't made any contributions to the plan, so I am not absolutely sure of the details of that code section by code section.

Q. Okay. And you are also familiar with the workpapers that were provided with the application as they relate to these topics?

A. Yes.

Q. And are you familiar with workpaper WPF-2.1A?

A. I don't have that in front of me.

MR. SERIO: May I approach, your Honor?

EXAMINER PIRIK: Yes.

MR. KUTIK: Do you have a copy, Joe? I would appreciate it.

MR. SERIO: Yeah, I have a copy. Again, I don't think I need to mark it as an exhibit because it is part of the application but for purposes of making it easy.

EXAMINER PIRIK: Okay.

Q. I just handed you a three-page document in the upper right-hand corner says WPF-2.1A and it's titled "East Ohio Gas Company d/b/a Dominion East Ohio, Case No. 07-0829-GA-AIR, Deferred Income Taxes, Current Rates as of May 31, 2009." Do you see that?

A. Yes, I do.

Q. And you recognize this as the workpaper that's included as part of the application?

A. Yes, I do.

Q. So if you look on this workpaper on the lines above pension total the $220,235,229 as of March 31, '07, there's two types of amounts listed there, FAS87 pension adjustment and the FAS157 pension. Do you see that?

A. Yes, I do.

Q. Can you tell me what those 283 pension related accumulated deferred income taxes represents?

A. Well, they represent the deferred taxes on the prepaid pension account, the $600 million pension account that is in the balance sheet at that point in time, and they are directly related. This is the taxes on that. Technically they represent the -- that is the cumulative temporary difference under FAS109 between the book accounting and the tax accounting. And we haven't taken any tax deductions, so the prepaid pension account is the total book tax timing or book tax temporary differences as it's described under FAS109.

Q. Can you explain to me why there is two different amounts there then?

A. I think it's because a portion of it is based on their FAS158 accounting because they break it down between FAS87 and 158 so they are accounting for them on the books but you have to remember that because we are not taking any tax deduction, the book deduction is the total temporary timing difference associated with the deferred taxes so that's why if you take the asset account and put -- apply it times 35 percent, you are going to get the combined $220 million.

Q. Okay. You referenced they didn't take. You mean Dominion East Ohio when you said they?

A. Yeah. When I say they, the accounting is that they account for both the FAS87 and 158.

Q. And they being East Ohio?

A. Yes, yes.

Q. Okay. I just needed to clarify. Now, the pension-related accumulated deferred income taxes have grown as shown on the workpaper by $4,915,542 for the months of January through March, 2007, correct?

A. Yes.

Q. And can you tell me how the amounts of ADIT are calculated for each type of the two elements?

A. Well, once again, the deferred tax calculation is 35 percent of the timing difference so to the extent that the books under both 158 and FAS87 would have made accounting entries to change those balances, the deferred taxes would follow.

Q. And one last question so I am clear, you indicated you are not aware of any contributions being made to the pension funds since '86, correct?

A. That's correct. I don't recall any considerations being made.

Q. To the extent they would have been made, you would be the person that would know about it, correct?

A. I would have thought it would be on the tax return, and we would have prepared the tax return, that's correct.

Q. That would have been you, correct?

A. I am not the only one that prepares a tax return. We are a multi-million dollar company. We have a tax department of 70 people, so it would have been -- there would have been some contribution to the fund. I know in '86 when I was there up through the merger, there were no contributions. And I don't think there has been any -- I am not aware of any.

Subject to review I can't -- I can't swear to that.

MR. SERIO: If we could just leave it at that, your Honor, if we could get subject to check, then I have no more questions.

EXAMINER PIRIK: Thank you, Mr. Serio.

Mr. -- subject to check.

THE WITNESS: Yes.

MR. REILLY: No questions, your Honor.

EXAMINER PIRIK: Mr. Kutik.

\- - -

REDIRECT EXAMINATION

By Mr. Kutik:

Q. Mr. Taylor, there -- is there a relationship between accumulated deferred income taxes that are pension -- based upon pension assets?

A. I'm sorry. I didn't hear.

Q. Is there a relationship between pension-related ADIT and the pension assets?

A. Oh, it's directly related.

Q. How is it related?

A. It's exactly 35 percent and it is the deferred taxes that are recorded on the books are exactly 35 percent of the book amount.

Q. And if that pension asset is not in rate base, what would be the appropriate calculation for ADIT?

A. Well, if it's not included in rate base and if those deferred taxes are not being collected in cost of service, the rate -- the normal rate proceeding -- or procedures would be not to include it as a rate-based adjustment.

MR. KUTIK: Thank you. No further questions.

EXAMINER PIRIK: Mr. Rinebolt.

MR. RINEBOLT: Nothing, your Honor.

EXAMINER PIRIK: Mr. Serio.

MR. SERIO: Just a second, your Honor. Make sure I get this straight.

- - -

RECROSS-EXAMINATION

By Mr. Serio:

Q. Mr. Taylor, is there a relationship between a pension credit and a pension asset?

A. The pension credit -- oh, the income -- the pension credit is the annual income portion and, yes, there is. It's as they make entries to the pension credit, there are also entries related to the asset.

Q. So would you agree with me that it's the credit that drives the amount of the asset?

A. I don't -- to be honest with you, I am not sure from a 158. I would say that is correct but there may be other adjustments that go. The 158 calculation and the 87 calculation is somewhat complicated to the accounting. For that I would defer to Mr. Ives for that question.

Q. So to the best of your knowledge, that's correct but Mr. Ives would --

A. There's a correlation, yes.

Q. Two questions ago the end of your response, this is where I need that computer, you indicated that that was the appropriate way to do it. Do you recall that answer?

A. We were talking about the -- the rate treatment of deferred taxes and rate base?

Q. Yes, yes. With that answer in mind you indicated that was an -- I think you said an appropriate way to do it. Did you mean that there is regulatory guidelines that mean it has to be done that way?

A. They are not regulatory guidelines, but my practice in multiple states rate base is reduced by deferred taxes as long as those deferred taxes are collected from the ratepayers. Those deferred taxes there is an offset against rate based to compensate for the fact you are collecting those deferred taxes from the ratepayers and that happens in many states.

Q. And to the extent that happens is that because the particular jurisdiction that you are talking about has a regulatory requirement that it be done in that respect?

A. I don't know -- I have not seen regulatory requirements in that respect. It is -- to me it's just it's common to rate structure.

MR. SERIO: I think that's all I have, your Honor. Thank you.

Thank you, Mr. Taylor.

MR. REILLY: We have nothing more.

EXAMINER PIRIK: Thank you, Mr. Reilly.

MR. KUTIK: Your Honor, at this point we would move for the admission of Dominion Exhibit 4.0.

EXAMINER PIRIK: And I will just want to be sure.

THE WITNESS: Follow up.

EXAMINER PIRIK: Follow up and let us know.

MR. KUTIK: This has been a question that has been asked of us in discovery and to the -- and our answer in discovery was that we could not obtain that information, but if we obtain that information, we will provide it.

EXAMINER PIRIK: Thank you. Are there any objections?

MR. SERIO: No, I understand the response in discovery. I am just trying to follow up with what the witness said because my understanding would be if he doesn't come back and clarify that it's not that way, then it's left that his answer stands as he gave it.

THE WITNESS: I understand.

MR. KUTIK: And his answer, as I understand, the best of his recollection there have been no contributions since 1986.

THE WITNESS: That's correct.

EXAMINER PIRIK: Thank you. So if there is a change, you will come back and let us know.

MR. KUTIK: We will, your Honor.

EXAMINER PIRIK: Hearing no objection then to the document it shall be admitted into the record.

(EXHIBIT ADMITTED INTO EVIDENCE.)

EXAMINER PIRIK: Thank you very much.

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

(Discussion off the record.)

\- - -

CLIFF ANDREWS

being first duly sworn, as prescribed by law, was examined and testified as follows:

DIRECT EXAMINATION

By Mr. Whitt:

Q. Mr. Andrews, could you introduce yourself to the Commission, please.

A. Certainly. My name is Cliff Andrews. I am an employee of Dominion East Ohio.

Q. Mr. Andrews, do you have before you a document that has been marked for identification as DEO Exhibit 6.0?

A. I do.

Q. And is this -- does this document represent your direct testimony in this case?

A. Yes, it does.

Q. Do you have any additions or corrections to make to your testimony?

A. I have one correction on the first page. Since the time of the filing of my testimony my title has changed from Business Development Manager to Financial Consultant.

MR. SAUER: I'm sorry, what?

THE WITNESS: Financial Consultant.

Q. Subject to that correction if I were to ask you the same questions that appear in DEO 6.0 today, would your answers be the same?

A. They would.

MR. WHITT: Thank you. The witness is available for cross.

EXAMINER PIRIK: OCC.

MR. SAUER: Mr. Rinebolt let me know he had no cross so.

EXAMINER PIRIK: Oh, he does have cross of the witness?

MR. SAUER: He has no cross.

EXAMINER PIRIK: He has no cross.

\- - -

CROSS-EXAMINATION

By Mr. Sauer:

Q. Good morning. I'm sorry. Good afternoon, Mr. Andrews.

A. Good afternoon.

Q. I wondered if you could turn to page 1 of your testimony.

A. Okay.

Q. And at lines 17 through 19 just state "additionally, I am responsible for developing various models for analyzing competition for our existing customer base as well as new opportunities to increase sales." Do you see that?

A. Yes.

Q. Can you explain what opportunities to increase sales you are referring to here?

A. That would be in the context to the utilization of natural gas by key accounts.

Q. Key accounts being primarily commercial/industrial customers?

A. Correct.

Q. Can you explain what -- what the models are that you are referring to that would increase sales?

A. They might compare the rates for Dominion East Ohio versus other alternatives to commercial or industrial customers or competing fuel sources.

Q. Natural gases versus electricity or?

A. Or alternate fuels but electricity could be one of them. Landfill gas could be another one just for example.

Q. Are there any similar programs on the residential side?

A. I believe to the extent that residential developments would be at risk to competing LDC or fuel source, that we would -- we would analyze that as well.

Q. I'm sorry. Did -- is your microphone on? I am having trouble hearing you.

A. I'm sorry. Is this better?

Q. Yes.

A. Okay.

Q. Thank you.

EXAMINER PIRIK: Mr. Sauer, could you also use a microphone because it is sometimes rather hard when you are reading.

MR. SAUER: Okay.

Q. The next sentence in your testimony, Mr. Andrews, it states "through my experience in the industry and with the company, I have developed an understanding of the usage patterns of the various customer classes served by DEO and the nature of the costs incurred to serve them." Do you see that?

A. I do.

Q. And can you explain how you've developed this understanding of the usage patterns?

A. Certainly. It would be in the context in analyzing forecasts, not only for classes as a whole but also for how individual customers use natural gas.

Q. And have you performed studies on usage patterns of various customers?

A. Can you explain what you mean by studies?

Q. Analyzing the usage patterns of the customers, various customer classes.

A. I suppose in the context of, you know, analyzing load factors of customers' seasonality of consumption that I have done some studies along those lines.

Q. Have you looked at the usage patterns, for example, of residential customers?

A. I'm aware of the usage patterns of residential customers. I have -- and I am aware of them.

Q. Have you found there to be a difference in the usage patterns between, say, a PIPP customer and a non-PIPP low income customer?

A. I understand what you mean by a PIPP customer, that would be someone that is eligible for the PIPP program. Can you explain what you mean by a low income non-PIPP customer?

Q. It's a low income customer who is not on PIPP.

A. Off the top of my head I am aware of the difference. I believe there is a difference in the usage patterns of a non -- or of a PIPP customer and a non-PIPP customer. I am not sure right here I could recollect the difference between a PIPP customer and a low income non-PIPP customer.

Q. Do you know what the average use for a residential customer is?

A. The average use of a residential customer on Dominion East Ohio is approximately 100 MCF of natural gas per year.

Q. And do you know if the average use of a PIPP customer is higher or lower than the average residential customer's usage?

A. My understanding is that the average use for a PIPP customer is higher than the average overall residential.

Q. Do you know what that average PIPP customer usage is?

A. I don't have that number at the tip of my tongue. I believe I would be speculating, but I think it's approximately 130 MCF.

Q. And have you done any studies on customer usage based on income levels?

A. I have not.

Q. Has Dominion East Ohio done any such studies?

A. I believe they have, but I can't recollect.

Q. Do you know who would know about those studies?

A. Whether they are in the schedules of the filing or not? Pardon me?

Q. Do you know who would know if those studies had been performed?

A. I can think of, you know, one or two people that might have, but I am not 100 percent sure I know on the distinction between. And, now, you mentioned low income and nonlow income; is that right? When you are talking about PIPP versus the average residential -- or did you just say low income versus nonlow income?

Q. Yeah. My question went to whether or not you had done any studies on usage patterns based on income level, not specifically directed to PIPP usage.

A. And I said I had not.

Q. Okay. Can you kind of generally walk me through what you did for your cost of service study in this case.

A. I reviewed the last public cost of service study that Dominion had utilized for the 1993 rate proceedings. I reviewed other cost of service studies that had been done recently by other gas utilities, made determinations as to what could be changed or improved, and then basically followed the three-part process that I think is inherent generally to most utility cost of service studies which goes about trying to take the costs and investments of the utility and allocating them to the various rate classes. The three steps that I refer to are functionalizing which breaks the costs into the various components of utility service which is production, storage, transmission, distribution.

The next step is classifying which really gets into the heart of the service being provided. It breaks it down into energy or commodity cost demands or capacity costs, customer costs, and then revenue costs.

And then the final step is to develop a series of allocators and then allocate by function the cost to the various classes. When all of that is completed, you have -- and, again, this is all for the period of in this case the test year. You have a total of the costs and then the corresponding revenue requirement by class, and based upon the applicable rate of return, you can then identify where there might be some deficiency in revenue by class. So that's -- from A to Z that's the process that I went through.

Q. And I believe you said in the allocation phase you allocated cost to the rate schedules; is that correct?

A. The term I used was rate classes.

Q. And what are the rate classes that DEO uses?

A. Dominion East Ohio has -- well, the cost of service study has five rate classes, four of which really relate to end users and the fifth one is a storage class. The first class is the general sales service class, general service class, let me put it that way. That also would include the Energy Choice transportation service. That class is predominantly a residential class in excess of 90 percent residential customers and a few small -- very small commercial/industrial customers. The next class is the large volume sales service which also incorporates the large volume Energy Choice and that would be small commercial and industrial upwards to medium commercial/industrial accounts. Then we get into the general transportation service class which also includes transportation from -- for schools that is larger commercial and industrial accounts. And then our final class for end users would be the daily transportation service which would be the largest and highest load factor in commercial and industrial accounts. And then those were the lines along which the cost of service study and allocations were made.

Q. And the general sales service class in the Energy Choice transportation service class you said predominantly residential, but it's not exclusively residential, is it?

A. That is correct. The general sales

service and -- general sales service class which is approximately 95 percent residential also happens to be the default rate schedule for Dominion East Ohio, so any customer that is not entered into a contractual arrangement otherwise would be on the general sales service schedule. It is really designed around though the load profile of a residential and most customers when they get large enough will contract with us to either go to the large volume service or a transportation service.

Q. Does the general sales service or Energy Choice transportation service tariffs have any limitations on customer usage in order to qualify for those tariffs?

A. There is no maximum usage, no minimum usage for being on the general sales service.

Q. You said the average residential use was 100 MCF a year; is that correct?

A. That's correct.

Q. There are on the general sales service or the Energy Choice transportation service tariffs residential customers that use much less than that, are there not?

A. There could be an average. Usually it's made up of customers using more and less than 100.

Q. Do you know what the average of consumption levels within that revenue class for residential customers is?

A. I did not know the range. I am not sure if that is filed under one of the four schedules or workpapers, but I am not aware of the min and max within that class.

Q. The nonresidential customers are on that class. Is that made up of either commercial or industrial customers?

A. It could be and I believe is commercial and industrial.

Q. All right. And is there an economic breakpoint where it's more cost effective to be on the large volume general sales service as opposed to the GSS or Energy Choice transportation service tariff?

A. Under current rates the break even for moving to the large volume schedules which have a higher fixed costs is approximately 250, an average of approximately 250 MCF per month.

Q. So there can be months where those customers are using much more than 250 MCF?

A. I'm not speaking to any specific customer. I am only stating that the economic -- the calculation for economic break even would assume -- requires an average of 250 MCF per month.

Q. Would those customers be typically heat load customers?

A. I'm not sure what you mean by those customers.

Q. The commercial or industrial customers that are on the large -- the Energy Choice transportation or the general sales service tariff, would they typically be a heat load customer?

A. The fact that they would remain on the general sales service assuming they were commercial or industrial might suggest they would be a heat customer, but I can't speak to that. I believe that the -- when you factor in the nonresidential customers and the GSS class, that they improve the load factor for the class compared to looking at the residentials only. That doesn't state that they still couldn't be heating customers but they do improve the load factors which is a benefit to the residential customers because it ends up lowering the costs to serve the class as a whole. But, you know, I don't know if that answers your question or not.

Q. If they were higher volume users in the winter months and much lower volume users in the shorter or summer months, would they have the opportunity to move between the general sales service and Energy Choice transportation service to the large volume sales service tariffs during the year?

A. I'm fairly confident that the -- the agreement to move to large volume requires a one-year commitment. I'm not 100 percent sure of my recollection of that, but I believe that it does require a one-year commitment.

Q. Does the general sales service of the Energy Choice transportation service have similar commitments?

A. Like I said before, that's the default service and it's the only service that East Ohio offers that does not require a contractual document.

Q. If you could turn to page 6 of your testimony.

A. Okay.

Q. Lines 4 to 6.

A. Okay.

Q. It says "customers were grouped according

to the tariff schedule under which they are billed. Where rate schedules had customers with similar usage patterns, the tariff patterns, the tariff schedules were combined as a single class." Do you see that?
A. I do.
Q. And can you explain in what way the usage patterns are similar between the residential GSS customers versus the nonresidential GSS customers?
A. Well, to answer that question, I have to -- I really have to turn back to the statement in my testimony which says "where rate schedules had customers with similar usage patterns." As I stated earlier, the rate classes do reflect a significant consistency of who is served under that rate schedule so, for example, under GSS 95 percent of the customers are residential. So that being the vast majority of the customers served under that schedule, they have similar usage patterns. That's what I was driving at with that statement and that's why we chose to allocate costs to rate schedules because the rate schedules themselves take into account the vast majority of the constituents of that rate class so that's what I meant by similar usage patterns.
Now, to the extent that nonresidential

customers are small and heat sensitive, then they -- then they would exhibit a similar usage pattern so the majority of customers which are the residential customers in that rate class again focusing on the GSS.

Q. Is it true that GSS class going back for -- can you tell me how far back Dominion East Ohio has combined both residential and nonresidential customers within their general service tariffs?

A. Well, I believe that GSS became a class in the last rate case, and I'm fairly certain since then it's been the default rate class and, therefore, would not discriminate as to who might be served under that rate class.

Q. So prior to the last rate case was the residential class served under its own tariff?

A. I don't believe that we have ever had an exclusively residential rate class, but prior to 1993 I am not 100 percent sure.

Q. Did you do any specific studies of the cus -- of the existing customers on the GSS tariff to decide if continuing the eligibility of both residential and nonresidential customers on the general service tariff was appropriate?

A. I observed that the -- you know, the breakdown was such that 95 percent of the GSS class was residential and, therefore, really to that extent defined the rate class, therefore, left it as it was. And it did not feel that it needed to be calculated differently.

Q. But did you do any specific study to see if that was appropriate?

A. We -- other than observing that it was predominantly residential, no. As I alluded to earlier, the -- the nonresidential customers in that class do improve the load factor, therefore, would be a help to the residentials in terms of allocating certain costs.

Q. So to know that then you have done a specific study of the residential load factors as a class and then the load factor of the general service class in total?

A. I've -- there are -- in Exhibit 4, I believe, there are some details that show monthly volumes broken out by residential and nonresidential and by doing some simple calculations I think you can observe that the -- there is a better load factor for the class as a whole as opposed to the residential class within the rate schedule.

Q. And was there any specific -- within the cost of service study was there anything specific done in terms of looking at cost to serve residential customers versus the cost to serve the nonresidential customers?

A. In developing the cost to service study that was filed with the rate case?

Q. Yes.

A. Once a determination was made that -- that the GSS class being predominately residential was a sufficient representation, no further studies were done, no, to break it down.

Q. Within your study can you identify what the fixed costs are to serve the residential customer?

A. How would you define fixed costs? What are you referring to specifically?

Q. Are you familiar with the proposed rate design in the Staff Report?

A. I'm -- I am familiar with the rate design proposed by staff, yes.

Q. And the staff is proposing a $17.50 charge per month for residential customers?

A. Sir, is that a question?

Q. Yes. Are you familiar with that?

A. I'm familiar that they have proposed the $17.50 rate for the GSS class.

Q. And can you identify within the cost of service study how that $17.50 would be derived?

A. Well, I guess I need to step back for a minute, and maybe I didn't 100 percent close the loop on the cost to service study purpose, but the purpose, and I actually did state it, is to develop a revenue requirement. And to the extent that with the exception of a few -- a few adjustments made by staff, the revenue requirements are -- are very similar for what was identified in the cost of service study. Therefore, the cost of service study that Dominion submitted in its filing would support any rate design that with the combination of charges that were included produce that revenue requirement.

Q. In performing the cost of service study, however, did you isolate the cost to serve residential customers alone?

A. I did not but my understanding of staff's proposed $17.50 rate is that the -- it applies to the GSS class.

Q. And would the cost to serve a residential customer be different than the cost to serve a commercial or industrial customer?

A. Are you speaking generically or within -- or those that might be served under the GSS class?

Q. I am speaking specifically to the GSS class or the Energy Choice transportation service class.

A. There potentially could be differences in the cost to serve.

Q. Would you generally expect the cost to serve commercial/industrial customers in the GSS to be higher than the choice to serve a residential customer in the GSS class?

A. I -- I think there are certain costs that could be higher. I think there are certain costs that could be the same. And I think there are certain elements of serving a commercial or industrial customer that might on average be lower than serving a residential customer.

Q. Can you give me some examples of the costs that you are speaking to that could potentially be higher to serve the commercial/industrial customers as opposed to residential customers on the

GSS class?

A. Assuming that the -- the reference commercial or industrial customers are bigger users, they might have larger meters. The size of the main to curb, for example, to serve a -- a McDonald's versus a home that are coming off the same main line could be slightly larger, although the cost to install the service, the excavation would not be different. It would still require the excavation required to install the service. But the main line serving them both would be the same. So, you know, there are small pieces you could argue would be higher.

Q. If you know, the staff's rate design proposal of $17.50 with the volummetric charge, do you know how that would -- what the impact on that design would be if DEO's full rate request isn't granted?

A. I'm sorry. Could you repeat the question.

Q. Yes, yes, if DEO's full rate request isn't granted, do you know if the rate design change would be to the fixed part of the charge, the volumetric charge, or some combination of both, if you know?

A. My understanding of the rates that staff listed in the Staff Report were that they were consistent with the full amount of revenue that Dominion had requested. So, therefore, since they recommended less than the full amount of our request I believe then that that would require a reduction in one or both or at least a realignment of --

Q. And you don't know the specifics of how that might --

A. I don't believe --

Q. How that would be realigned?

A. I don't believe that has been.

Q. Still looking on page 6 of your testimony, lines 14 through 21.

A. Yes, sir.

Q. You identify some allocation factors.

A. Yes.

Q. If you know, what -- let me take a step back. Are you familiar with the company's pipeline infrastructure replacement program?

A. I am familiar with it.

Q. And do you know how the revenue responsibility for that program has been developed?

A. When you say revenue responsibility, are you talking about allocating --

Q. How the revenues would be collected through that program.

A. In terms of the rate structure or the allocation of the revenue? I am not --

Q. The allocating of the revenue requirement.

A. To the rate class?

Q. To the rate classes.

A. I believe -- I believe that information was in the application and utilized several factors depending on the cost of it. I mean, there is three primary components, I believe, to the revenue in the pipeline infrastructure replacement program and that is the intermediate appreciation tax and rate base generated from the program and, you know, they utilized certain allocation factors that I don't recall exactly.

Q. Would you expect the allocation to -- well, let me ask you --

MR. WHITT: I'm not sure the witness was finished with the answer.

Q. I'm sorry.

A. So if you are asking me specifically if I know which were used, I don't recollect off the top of my head how the three cost items were allocated.

Q. In your cost of service study you've allocated mains to various revenue classes, correct?

A. Correct.

Q. And would you expect the PIR revenue responsibility allocations to kind of follow the allocation -- the main allocations to the revenue classes?

A. I would expect that.

MR. SAUER: Can we go off the record for a minute, your Honor?

EXAMINER PIRIK: Yes.

(Discussion off the record.)

Q. Just to make sure I'm clear, Mr. Andrews, you said you would expect the allocation of the PIR revenue responsibility to follow your allocation of mains in the cost of service study offhand, do you know what that allocation percentage would be to the GSS class?

A. Offhand I can check the cost of service study, but I believe mains were allocated on a combination of capacity and commodity. I don't recall the -- would you like me to look?

Q. If you have that information.

EXAMINER PIRIK: We can go off the record for a minute while the witness is looking so there is less pressure.

(Discussion off the record.)

A. You said distribution mains. If I am not mistaken, the PIR broke mains into several different categories, low pressure, high pressure, transmission. And the cost of service study, you know, distribution mains are lumped in together under one category. And as I referenced earlier, that was a combination of allocation based on throughput and excess peak day.

Q. And do you have a percentage that specifically went to the GSS class based on that information?

A. I mean, without calculating it here, I don't have that.

Q. Okay. Is there -- is there a method I could use to do the calculation myself?

A. Page 13 of 16 in the cost of service study under distribution mains would be a component of the assets and the commodity-related and capacity-related lines. Not exclusive component but they are within that -- they are a portion of what's representative of those two lines.

Q. If I look at the cost of service study, will I see distribution mains that total asset as its allocated to either general service or large general service or the various revenue classes that you previously discussed as in relationship to the total distribution main asset?

A. Distribution mains is included and is not a separate line item.

Q. Oh, okay.

A. It's within the noncustomer segment which falls under the capacity -- blend of the capacity and commodity costs.

Q. If the -- if your expectation was correct that the revenue responsibility for the pipeline infrastructure replacement program would indeed follow your cost of service allocations of distribution mains, would a stud -- a separate or a new and different study need to be done in order to break that out from the other assets that are reflected on page 13 of 16 of your cost of service study?

A. The distribution mains are an asset -- distribution asset that are available to serve all of our customers. A portion of it is there for serving peak day and a portion of it is there to serve the average going to the customer, so I believe that it's -- that has been allocated directly.

Q. I guess I wasn't suggesting it was -- it hadn't been allocated incorrectly. I thought what I heard you testify to was within distribution mains there are other assets that are included within that line item of your cost of service study besides just distribution mains.

A. In the distribution plant within the capacity and commodity lines there would be other assets besides distribution mains.

MR. SAUER: Okay. And would you need to extract the other distribution assets from the -- strike that.

That's all the questions I have.

EXAMINER PIRIK: Thank you.

Mr. Reilly.

MR. REILLY: We have no questions, your Honor.

EXAMINER PIRIK: Mr. Whitt.

MR. WHITT: Very brief redirect, your Honor.

- - -

REDIRECT EXAMINATION

By Mr. Whitt:

Q. Mr. Andrews, do you recall the line of questions where you were asked about whether there could be cost differences between residential and nonresidential customers within the GSS class?

A. Yes.

Q. And I believe you gave some examples where the nonresidential customers may have imposed a higher cost, and you also gave examples where the nonresidential customers may impose the same costs. Do you recall those questions?

A. Yes.

Q. Could you give us some examples where there may be a lower cost to serve nonresidential customers within the GSS class as compared to residential customers in that same class?

A. The primary cost benefit from having the nonresidential customers would be from the fact that there would be a load factor improvement and, therefore, the excess peak day costs would not be felt to the same extent as if the residential were looked at individually. The fact that the load factor is approved by having nonresidentials in effect reduces the peak-day burden on the residentials.

Q. So are you saying that if the nonresidential customers were excluded from the GSS class and it were a residential only class, that the residential rates would be higher than as proposed in the company's filing?

A. Yes. I believe that to a certain extent the nonresidentials within the GSS class are subsidizing the residential.

MR. WHITT: Thank you.

EXAMINER PIRIK: Mr. Sauer.

MR. SAUER: Yes, just a couple of questions.

\- - -

RECROSS-EXAMINATION

By Mr. Sauer:

Q. Mr. Andrews, do you know for a fact that the nonresidential customers are subsidizing the residential customers?

A. I am inferring it based on calculations in terms of allocating costs. So to the extent that the calculations show that the revenue requirement or that revenue contribution of the residentials within GSS class are underrecovering the nonresidentials, that's the basis for that.

Q. Can you point me to your testimony where that -- that fact exists?

A. As I mentioned in the -- in the cost of service study that was filed with the original application, we did not make a distinction between residential and nonresidential, so I did not -- I did not discuss that in the -- in the testimony.

Q. So if I understand your testimony, theoretically the -- it's your opinion that the nonresidential customers are subsidizing the residential customers but that study was not done?

A. The study was not done in conjunction with the cost of service study that was filed with the rate application. Subsequent to the staff report being issued and certain discussions taking place we've, you know, heard concerns of various parties and have tried to do some work to understand what may or may not be the case within the GSS class, so I have done some informal studies to try to understand

and if we had missed certain things and then that -- those informal studies have produced my statements along the lines that within the GSS class if -- if there is a subsidy, it's the residentials that are being subsidized.

Q. But those informal studies haven't been filed in this case, correct?

A. No.

MR. SAUER: Thank you.

Your Honor, there was one other item. We had an agreement between counsel with DEO that part of Mr. Andrew's deposition that was taken we went through some calculations on pages 42 through 52 where we tried to ascertain what the average bill would be for a -- for a residential customer in the winter and summer under the old rate structure and the new rate structure, and he walked through those calculations in his deposition and in Deposition Exhibits 1, 2, and 3 supported those calculations. And rather than run him through the exercise here we've agreed to stipulate to that -- that calculation that was done in his deposition.

EXAMINER PIRIK: Could we see a copy of that?

MR. SAUER: Absolutely.

EXAMINER PIRIK: And I think we need to bring that into the record if we are going to rely on that as part of the transcript in this case.

MR. SERIO: Could we go off the record?

EXAMINER PIRIK: Yes.

(Discussion off the record.)

EXAMINER PIRIK: We will go back on the record. Mr. Sauer, you submitted to everyone a document that's, I believe, a portion of Mr. Andrews' deposition; is that correct?

MR. SAUER: Yes, yes.

EXAMINER PIRIK: Is that how you submitted it to us? And you are asking that we agree that you all have stipulated to the calculations within this document as opposed to going through them in the hearing at this time?

MR. SAUER: Yes.

EXAMINER PIRIK: We will need to mark this as OCC Exhibit 4.

(EXHIBIT MARKED FOR IDENTIFICATION.)

MR. REILLY: Your Honor, I want to be clear, I am not sure the staff has stipulated to any calculations.

EXAMINER PIRIK: I think my difficulty with it -- I was going to say my difficulty with the document is that the Examiners haven't had a chance to look at it and apparently staff hasn't had. Mr. Rinebolt, I don't know who all had had a chance to look at it to know whether or not we have any questions with regard to the document.

MR. REILLY: If I might, I have no objection to the presentation of the document and the questioning of the witness on the document if we could withhold perhaps for just until Monday until when we get back together --

EXAMINER PIRIK: Right.

MR. REILLY: -- for examination of the document.

EXAMINER FARKAS: I think the intent was to submit this in lieu of questioning. I think that's what the parties were suggesting?

MR. SERIO: Could we go off the record for a minute?

MR. REILLY: Sure.

EXAMINER PIRIK: I don't know that I said sure.

MR. REILLY: I'm sorry.

EXAMINER PIRIK: I want this discussion on the record because I am not sure about this document.

MR. SERIO: I was just going to suggest it occurred to me it's no different than asking a witness if we were to ask you the same questions, would you give us the same answers again instead of going through it all. The witness is indicating those would have been the same answers to the same questions. That's all. We are just trying to cut time.

EXAMINER PIRIK: I may be out of sorts here, aren't we in recross?

MR. REILLY: Yes.

EXAMINER PIRIK: Why is this being brought up in recross? I am just trying to figure out how this -- I understand the questions -- the questions were very limited that Mr. Whitt brought up on redirect.

MR. SAUER: Yeah. We had had this discussion with the company before Mr. Andrews took the stand.

EXAMINER PIRIK: I understand you had the discussion with the company, but we are the Examiners in the case, and we are responsible for the record in this case. Now, you are bringing this up on recross which means now we are going to have to go back and I already said we are not doing reredirect and we are not doing rerecross and the Examiners have already -- we haven't had a chance to ask questions, so we will consider this. We will look at it, and on Wednesday when we all get back together again, we will discuss it. Unfortunately if we have questions for the witness, he may not be here on Wednesday so that's my other concern is that the witness is here now but certain parties and the Examiners haven't had a chance to look at the document so I am just looking at this and I am saying procedurally it's difficult for the Examiners because we haven't had a chance to actually look at this and it was brought up on recross so I am just really confused as to the timing of it in the process that we are following here.

MR. SAUER: I'm sorry, your Honor. I didn't mean to create any confusion.

EXAMINER PIRIK: Right.

MR. SAUER: Again, the document was an attempt to get on the record I think some fairly basic calculations and typical bill calculations and the increase between the old rates and the new rates. I don't think it's going to give anybody a lot of heartburn if they look it over and decide whether or not it goes in. I think they are fairly -- fairly routine calculations that are being presented here.

MR. REILLY: If I could interject, the problem -- one of the problems -- I'm sorry.

EXAMINER PIRIK: Go ahead, Mr. Reilly.

MR. REILLY: Thank you. One of the problems from our standpoint is -- and we have had I guess the least discussions on this is the Hearing -- as the Examiner pointed out, I am not exactly sure how this goes in response to the question -- to the questions that -- and the issues that company counsel raised, and as just taking a quick look at this, it refers to numbers on some table, and it is not clear where that table is. It may be the attachment to it. But where those numbers came from isn't clear.

What I am getting to I think we are getting pretty far afield with this.

EXAMINER PIRIK: Now, let's go off the record for a second.

(Discussion off the record.)

EXAMINER PIRIK: We will take a break

until 20 till.

(Recess taken.)

EXAMINER PIRIK: We will go back on the record. First of all, let me say that the document that's been marked as OCC Exhibit 4 should have appropriately been brought in in cross-examination.

MR. SAUER: I understand.

EXAMINER PIRIK: Procedurally that is the appropriate way to bring this type of information in, and at that point in time it would have been appropriate to hand that to all the other parties that have not actually focused on that document, we could have had an opportunity for everybody to spend some time on it, then we could have gone through appropriate cross and redirect on the document. So for further reference in the future while we are going to discuss this document at this time if this happens again, the answer will be no. It's not appropriately brought in on recross, and we are not going to consider this document, so we just need to be really careful about the process in this case. There's just -- I think we are making some assumptions perhaps in this administrative proceeding, we are doing things the way I have been doing it for 25 years, and I am going to continue to do it that way so let's just keep that in mind.

That being said looking at this document the question is if we assume that we, the Examiners, will allow this to come in on cross, is there any objection to it coming in on cross?

MR. REILLY: Staff does not have an objection.

EXAMINER PIRIK: Mr. Rinebolt.

MR. RINEBOLT: No objection, your Honor.

EXAMINER PIRIK: And the company has already stipulated to the document.

MR. WHITT: That's correct, your Honor.

EXAMINER PIRIK: This one time what we will do we will consider this an exhibit as on cross and we are going to go back on this one exhibit and allow other parties if they have questions to ask questions on it.

Mr. Rinebolt, would you have any questions on this document?

MR. RINEBOLT: No, I would not, your Honor.

MR. REILLY: We have no questions on it, your Honor. Thank you.

EXAMINER PIRIK: Mr. Whitt, would you have any redirect on this document?

MR. WHITT: No.

EXAMINER PIRIK: No? All right. Now, we are where we are, and we are back on recross.

Mr. Sauer.

MR. SAUER: Thank you, your Honor. No further questions.

EXAMINER PIRIK: Mr. Rinebolt, do you have any other questions?

MR. RINEBOLT: I do not, your Honor, thank you.

MR. REILLY: Staff has no further questions, your Honor.

MR. WHITT: Your Honor, East Ohio would move for the admission of DEO Exhibit 6.0.

EXAMINER PIRIK: Are there any objections to 6.0?

MR. REILLY: Staff has none.

MR. SAUER: No objection.

EXAMINER PIRIK: The document shall be admitted.

(EXHIBIT ADMITTED INTO EVIDENCE.)

MR. SAUER: OCC would move for the

admission of OCC Exhibit 4.

EXAMINER PIRIK: Are there any objections?

MR. REILLY: Staff has none.

MR. RINEBOLT: No, your Honor.

EXAMINER PIRIK: Hearing none it will be admitted into the record.

(EXHIBIT ADMITTED INTO EVIDENCE.)

MR. WHITT: Your Honor, for the company's next witness the company would call Larry Rice.

MR. SERIO: Your Honor, off the record while he is getting ready.

EXAMINER PIRIK: Yes.

(Discussion off the record.)

- - -

LARRY J. RICE

being first duly sworn, as prescribed by law, was examined and testified as follows:

DIRECT EXAMINATION

By Mr. Whitt:

Q. Good afternoon, Mr. Rice. Could introduce yourself to the Commission, please.

A. My name is Larry J. Rice. I am an employee of Dominion East Ohio Gas.

Q. Mr. Rice, do you have in front of you a document that has been marked for identification as DEO Exhibit 5.0?

A. Yes, I do.

Q. And is this direct testimony that you have prepared in this proceeding?

A. Yes, it is.

Q. Do you have any additions or corrections to make to your testimony?

A. I have two corrections I would like to make. Currently my title is Manager of Customer Services Support Services and --

Q. Not to interrupt but are you referring to page 1, line 6 of your testimony?

A. Yes, I'm sorry, yes.

Q. Okay. And the other change?

A. The other change is on page 4. It is on line 4, and it states that "the equation with the highest r-squared," and it should be adjusted r-squared.

Q. Do you have any other corrections or additions?

A. No, I don't.

Q. Mr. Rice, if I were to ask you the same questions that appear in Exhibit 5.0 today, would your answers be the same?

A. Yes, they would.

MR. WHITT: The witness is available for cross.

EXAMINER PIRIK: I have one question about the correction. Should it read "equation with the highest adjusted r-squared"?

THE WITNESS: Correct.

MR. SERIO: Could I get the title again?

THE WITNESS: Manager of Customer Service Service -- Manager of Customer Service Support Services.

MR. SERIO: That's instead of Senior Transportation Analyst?

THE WITNESS: In between I was a Financial Consultant.

EXAMINER PIRIK: Mr. Rinebolt, do you have any cross?

MR. RINEBOLT: I have no questions, your Honor.

EXAMINER PIRIK: OCC.

MR. SAUER: Thank you, your Honor.

\- - -

CROSS-EXAMINATION

By Mr. Sauer:

Q. Mr. Rice, it appears that in your testimony of page 1, lines 18 and 19, you -- in your current position you were responsible for preparing volumetric forecasts for use in five-year financial plans?

A. Yes.

Q. Is that correct? And are you no longer responsible for those functions in your new position?

A. In my new position the work moved with me and will be performed under me.

Q. And can you explain the various forecasts that you are responsible for preparing for DEO?

A. In the past I have prepared forecasts for long-range forecast as part of the state requirements, and in addition to that I have done forecast on the financial side of the company for our five-year planning and I have been responsible for the generation of the forecast for the Choice customers in terms of daily log, what the marketers need to bring as well as the assets of the customers, and I have also worked on doing forecasting in terms of our total system throughput on a daily basis to give our gas planning group options in terms of what they expect total deliveries need to be and how we need to get that gas to make sure the system is kept intact.

Q. And when you are doing load forecasting, do you -- do you break down the forecast by revenue class, the sales by revenue class?

A. When we are doing a forecast for financial planning, we would break it down to that detail. When we are doing a forecast in terms of how much throughput we expect through the system on a given day, it's not broken down at that level of detail. It is more a total.

Q. And for this case what type of a forecast did you do?

A. The forecast in this case was done at an account-type level which would be residential, commercial, industrial and off system.

Q. And in your -- in your experience have you done forecasts where you try to identify the usage patterns within the residential class?

A. Within a residential class the different analyses I have done are between PIPP and non-PIPP customers. I have not looked at residential any way other than that for forecasting purposes.

Q. And what have your forecasting studies shown if you are looking at PIPP customer usage?

A. The PIPP customers tend to use more gas than what a non-PIPP customer does for residential.

Q. And the average PIPP customer usage, do you know what that is offhand?

A. It's right around the 130 Mr. Andrews spoke to.

Q. And that's 130 MCF per year?

A. Correct.

Q. And you agreed with Mr. Andrews that the average annual residential usage overall was 100?

A. The 100.36 number is the number in our test year.

Q. I'm sorry. What was that number?

A. That is the number in our test year.

Q. And have you done any more granular studies beyond that in your career?

A. With respect to?

Q. To residential customers. Have you done any studies, for example, by income level?

A. Income levels is a real stuff one to do a study on in that that attribute isn't in our system, and if it was in our system, it would only be as good as that point in time the customer gives us that information. We are able to do it to PIPP because PIPP is a number the customer is expected to reverify every single year so with some reasonable certainty we can assume that customer is that income level. Without knowing the income of each individual customer retained within our system it is almost impossible to do that.

Q. So there isn't a way to identify, for example, low income non-PIPP customer usage?

A. Without knowing the income on the account it's -- I don't know how you can make an assumption to pull that group of customers out separately from the other customers.

Q. Have you ever seen any studies where that was -- where there were usage levels studied by income levels?

A. I am not aware of any.

Q. When you are doing your sales forecast, do you look at the economic conditions of the region when you are preparing your forecast?

A. When I am putting a forecast together, what I am looking at is the past history at the account level for usage and then how do those accounts respond to the temperature during the course of the previous year and then I aggregate all that up to a high level for the rate that those customers are on and then I use that aggregated factor against normal weather and number of days in the month and what we expect on the customer accounts before that rate schedule so in that analysis there is no reference to income level.

Q. At the end of your answer you said there was no reference to income level. Did you mean economic conditions?

A. Economic conditions, correct, I'm sorry.

Q. Do you look at manufacturing customers that have left the system when you are putting together a forecast?

A. There's about 100 large customers that are tracked by our sales group they do the forecasting for separately than what we would do so if that customer fell in that group, they would incorporate it in the forecast they would provide to me. So if it's a customer who is in the 100, they would proactively project that volume coming up. If it's a customer I would include in my roll up of factors, it would take a year for it to rotate out of the factor before I would project less usage for that customer.

Q. And, for example, that projection for the industrial customers who might leave the system does that then have any trickle down effect for residential usage?

A. It wouldn't correlate over it. If we lose industrial load, we don't then factor that into the residential load.

Q. Job loss doesn't factor into whether or not a customer leaves the --

A. I am not sure -- if the customer loses their job, that doesn't also mean they leave our service territory. That would have to be a leap I would have to take to do that.

Q. And if you could turn to Attachment LJR-5.1 to your testimony.

A. Okay.

Q. It describes blocks used to accumulate volumes. Do you see that?

A. Yes.

Q. Are these monthly volumes or annual volumes?

A. These would be monthly volumes.
Q. And are they MCF --
A. And they are the MCF level.
Q. And are you -- can you tell me where the residential customers fall within these various blocks?
A. I can't tell you what it would be, but it would be in the workpapers. All the blocking on a monthly level was included in the workpapers for WP-4. You could look at the rate schedule for residentials, and you would be able to see the monthly blocking.
Q. WP-4 would show me?
A. Yeah. There is a letter on the end of it. I am not sure what the letter is, but it would be in that group of workpapers.
Q. For example, are you aware of any residential customers that might fall into block 6 that would take 50 MCF a month?
A. Without reviewing those papers, I can't answer that.
Q. Okay. And how are these blocks arranged, sir? Are they -- if you fall in the 5.1 to 10, is that one month or do you have every month?

A. The blocks on the report would be monthly, so if you use 5.1 MCF in that given month, you would have 5 MCF in block 2 and .1 block -- I'm sorry, yeah, block 3 would have .1 and block 2 would have 5 MCF which when you aggregate it together would give you your 5.1.

Q. So it changes every month then?

A. Yes. As your usage changes through the year, you would fall in a different block, but the first 5 MCF always fall into the second block.

Q. And on the WP-4 workpaper you referred me to, I can see what the lowest usage residential customer --

A. You wouldn't see it as a customer. You would see it as an aggregation of all the customers forecasting for around that rate schedule.

Q. So I won't be able to tell a range from the lowest usage customer to the highest usage customer.

A. No, not off that report. You would know for that given month we projected so many volumes into these different blocks.

Q. If I look at page 3, lines 21 to 23 of your testimony, are you there?

A. Yes.

Q. It says "the variables used to determine monthly test year volumes were billing days, heating degree days, number of customers, daily base load, and heating factor per degree day," do you see that?

A. Yes.

Q. Were those the only variables that were used to determine monthly test year sales volumes?

A. Yes.

Q. And the heating degree days that you used, were they in -- well, let me take a step back. Are you familiar with NOAA?

A. Yes.

Q. And what is NOAA?

A. NOAA is the government agency that tracks weather, part of what they do.

Q. And do they have historical heating degree days that they rely upon?

A. They do, yes.

Q. And did you rely on those same heating degree days that their historical numbers show?

A. No, we did not. What we did was what was consistent with our long-range forecast report and those forecasts that we were filing year after year where we take a moving average, compare what that moving average is as a predictive volume of the following year heating degree day, and based on whichever one gives you the best equation, we utilize that average, in this case it was 17 years, and it was that way throughout many of the long-range forecast reports.

Q. So you relied on historical heating degree days for the past 17 years?

A. For this, yes.

Q. For this forecast?

A. It and it's also a weighting of air volume. It's not just one air volume.

Q. Does NOAA typically rely on 30 years of data?

A. I believe they do, yes.

Q. And do you know offhand how many heating degree days you have included in your forecast?

A. I am not sure of the exact number. It's I would say 5733, right around there, but I am not completely sure. That would also be included in the workpapers.

Q. Did you say 15?

A. 5733.

Q. Do you know what NOAA's 30-year heating degree day number is?

A. No, I don't.

Q. I think you had stated that you relied on weather data from five airports; is that correct?

A. Correct.

Q. Can you tell me what those five airports are?

A. Cleveland, Akron-Canton, Youngstown, Parkersburg which is our Marietta area, and then Lima.

Q. And if you have used a lower heating degree day number than, say, NOAA might recommend for the 30-year average, if you've used one that's less than NOAA's, would your sales forecast -- all other things being equal would your sales forecast have been less than had you used the NOAA 30-year average heating degree day number?

A. To the extent you would have greater degree days, it would increase any of the heating factor load. One of the other things we do when we put the forecast together we also look at a trend over time, and we try and match that trend up.

Q. And I think your example you said if the heating degree days were increased, the heating load would increase and, conversely, if the heating degree load was less, then the sales forecast for the heating load would be less as well?

A. Right, and we did attempt to select and actually we did select the equation that gave us the best predictive value for heating degree days going forward. And we include in there a 30-day moving average which is kind of different than NOAA. NOAA uses a 30-year average that's updated on a decade basis, but we do include in that analysis a 30-year moving analysis and that was in there as well as determining -- predicting what the 17-year moving average is that we use.

Q. You used a word I didn't pick up on. It was something about the NOAA basis that they use?

A. NOAA uses the 30-year --

Q. Uh-huh.

A. -- average. They update that once a decade. I believe they don't update it on a moving average basis.

Q. Okay.

A. What we look at is the 30-year moving average in the various number of years when we calculate what we think the load is going to be.

Q. Now, have you read the staff report in this case?

A. Yes.

Q. And are you familiar with the staff's proposed rate design?

A. Yes.

Q. And is it your understanding that the staff recommends the customer charge be increased from $5.70 or from $4.38 depending on which side of the system you are on up to $17.50?

A. What I understand in the staff report is that the revenue requirement to be satisfied based on how we filed for the revenue requirement that we filed for, they are recommending a $17.50 service fee, not so much that is what they are going to recommend.

Q. Do you understand if -- if the full rate increase isn't granted how the staff's rate design will be implemented or --

A. I am not aware of what the split would be based on a lower --

Q. I'm sorry. Go ahead.

A. Based on a lower revenue requirement. I do not know what the staff will come back with off of that.

Q. Is it your expectation that they would adjust a fixed component, a volumetric component, or some combination of both?

A. I have no expectation there. There would be a revenue requirement to be allocated across to the customers, and how they split it I don't know.

Q. If the company were to adopt the staff's recommended proposed straight fixed variable rate design, would the company have a preference on how that rate design would be implemented in the event the full rate increase wasn't granted?

A. I am not really sure where the company will stand on that.

Q. Now, is it correct that DEO's residential customers can subscribe to budget billing if they choose to levelize their monthly bills over the year?

A. I think that's a mischaracteristic of the budget plan. I think the customer would subscribe to budget level if they wish to levelize their monthly payments throughout the course of the year. I don't think it's a function of levelizing their bill itself.

Q. Do you know what percentage of DEO's residential customers subscribe to budget billing?

A. I am not aware of the percentage exactly. It's in the neighborhood of 20 percent or less and that is based off of residential customers.

MR. SAUER: May I approach the witness, your Honor?

EXAMINER PIRIK: Yes.

MR. SAUER: I have a document I would like to have marked as OCC Exhibit 5.

EXAMINER PIRIK: The document will be so marked.

(EXHIBIT MARKED FOR IDENTIFICATION.)

Q. Mr. Rice, are you familiar with the documents that I just handed to you?

A. Yes, I am.

Q. And the first page of OCC Exhibit 5 identifies the total number of residential customers that are on budget billing for the years 2005, 2006, and 2007; is that correct?

A. Yes.

Q. And that if you turn to the fourth page of what's been marked as OCC Exhibit 5, it's a monthly customer count by class; is that correct, for the years 1985 through 2007?

A. Yes.

Q. And then the last page is a calculation of the percentage of residential customers that are on budget billing with 2007 -- with the test year being 16.87 percent of residential customers on budget billing; is that correct?

A. Yes.

Q. Mr. Rice, do you know what a decoupling mechanism is?

A. I have no knowledge of what decoupling is.

Q. What's your understanding of a decoupling mechanism?

A. That once whatever period of time is completed there would then be a review of the revenue from that year to what you would have received based on test year. And then there would be some sort of true-up mechanism one way or the other put in place, either flow dollars back or collect dollars due.

Q. Will a decoupling mechanism address a company's revenue deterioration situation?

MR. WHITT: Your Honor, I would object to that question as beyond the scope of direct. The term decoupling appears nowhere in this witness's testimony.

EXAMINER PIRIK: Mr. Sauer, do you have a response to that?

MR. SAUER: No. I will withdraw the question, your Honor.

EXAMINER PIRIK: Thank you.

Q. Mr. Rice, does your load forecast show a decrease in usage per customer?

A. Yes, it does.

Q. And over what time period has DEO been experiencing a reduction in sales?

A. If you go all the way back to '97, that's about when it really started to show significant decrease. In 2000 was probably the period of time when it started to slope down the worst.

Q. And do you know if companies have proposed the decoupling mechanism to address such revenue de -- deteriorations that you are describing?

MR. WHITT: Objection, beyond the scope.

EXAMINER PIRIK: Mr. Sauer? Mr. Sauer, do you have --

MR. SAUER: Mr. Rice has testified to sales forecasts. The company in their application proposed a decoupling mechanism. In that decoupling mechanism I am assuming there is a correlation between the sales forecast and the mechanism itself.

MR. WHITT: Your Honor, this witness hasn't testified to decoupling.

EXAMINER PIRIK: I'm just not sure where you are going with this, Mr. Sauer. I think you need to stay away from the decoupling questions.

MR. SAUER: Okay. Thank you, your Honor.

Q. Mr. Rice, one question, when you talked about the five airports that DEO gathered weather data from, do you weight that data evenly or is it somehow weighted by that airport?

A. No, it's not weighted evenly. It's weighted based on usage in the area which that airport is close to. And we even went as far to pull up what we thought was not heat load from the weighting.

MR. SAUER: No further questions.

EXAMINER PIRIK: Thank you.

Staff.

MR. REILLY: No questions, your Honor.

EXAMINER PIRIK: Mr. Whitt.

MR. WHITT: No redirect, your Honor.

If there are no questions from the Bench, we would move for the admission of DEO Exhibit 5.0.

EXAMINER PIRIK: Are there any objections?

MR. REILLY: No objections.

MR. SAUER: No objections.

EXAMINER PIRIK: Hearing none that document will be moved into the record.

(EXHIBIT ADMITTED INTO EVIDENCE.)

MR. SAUER: OCC would move for the admission of Exhibit 5.

MR. WHITT: No objection.

MR. RINEBOLT: No objection.

EXAMINER PIRIK: OCC Exhibit 5 shall be admitted into the record.

(EXHIBIT ADMITTED INTO EVIDENCE.)

EXAMINER PIRIK: We will go off the record for just a moment.

(Discussion off the record.)

EXAMINER PIRIK: We will adjourn this hearing and reconvene on Wednesday, August 6, at 8:30 a.m.

(Thereupon, the hearing was adjourned at 5:32 p.m.)

CERTIFICATE

I do hereby certify that the foregoing is a true and correct transcript of the proceedings taken by me in this matter on Friday, August 1, 2008, and carefully compared with my original stenographic notes.

Karen Sue Gibson, Registered Merit Reporter.

(KSG-4947)

\- - -