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December 4, 2009

VIA EMAIL AND HAND DELIVERY

Chairman Sara Kyle  
c/o Ms. Sharla Dillon  
Tennessee Regulatory Authority  
460 James Robertson Parkway  
Nashville, Tennessee 37243

filed electronically in docket office on 12/04/09

**Re: Petition of Piedmont Natural Gas, Inc. for Approval of Service Schedule  
No. 317 and Related Energy Efficiency Programs**  
*Docket No. 09-00104*

Dear Chairman Kyle:

Enclosed please find an original and five (5) copies of Piedmont Natural Gas, Inc.'s Pre-Filed Direct Testimony of David R. Carpenter for filing in Docket No. 09-00104. An electronic copy of the filing has also been transmitted electronically to the Tennessee Regulatory Authority Docket Manager, Sharla Dillon. Please stamp one copy as "filed" and return to me by way of our courier.

Should you have any questions concerning any of the enclosed, please do not hesitate to contact me.

Sincerely,



Erin M. Everitt

Enclosures

cc: Hon. Mary Freeman (*w/o enclosure*)  
Hon. Eddie Roberson, Ph.D. (*w/o enclosure*)  
Hon. Kenneth C. Hill (*w/o enclosure*)  
Ryan McGehee, Esq.  
James H. Jeffries, Esq.

**Before the  
Tennessee Regulatory Authority**

**Docket No. 09-00104**

**Petition of Piedmont Natural Gas Company, Inc.  
to Implement a Margin Decoupling Tracker (MDT)  
and Related Energy Efficiency and Conservation Programs**

**Testimony and Exhibits  
of  
David R. Carpenter**

**On Behalf Of  
Piedmont Natural Gas Company, Inc.**



December 4, 2009

1 **Q. Please state your name and business address.**

2 A. My name is David R. Carpenter. My business address is 4720 Piedmont  
3 Row Drive, Charlotte, North Carolina.

4 **Q. By whom and in what capacity are you employed?**

5 A. I am employed by Piedmont Natural Gas Company, Inc. ("Piedmont" or the  
6 "Company") as Managing Director Regulatory Affairs.

7 **Q. Please describe your educational and professional background.**

8 A. I have a B.S. degree from Furman University in 1977. In 1983, I completed  
9 the requirements for and became a Certified Public Accountant in North  
10 Carolina. In 1980, I was employed by Deloitte, Haskins and Sells as a staff  
11 accountant, and I was promoted to senior assistant in 1981. I was employed  
12 by Piedmont in 1982 as Supervisor of Property Records and in 1990 was  
13 promoted to Manager of Financial Reporting and Property Records. I was  
14 promoted to manager of Rate Administration in 1993 and in February 2003  
15 was promoted to Director of Rates. I was promoted to my current position  
16 in July 2006.

17 **Q. Have you previously testified before the Tennessee Regulatory**  
18 **Authority or any other regulatory authority?**

19 A. Yes, I have testified before the Public Service Commission of South  
20 Carolina, the Tennessee Regulatory Authority and the North Carolina  
21 Utilities Commission on a number of occasions.

22 **Q. Are you a member of any professional associations?**

23 A. Yes. I am a member of the North Carolina Association of Certified Public

1 Accountants. I also serve on the Southern Gas Association's Rate  
2 Committee.

3 **Q. What is the purpose of your testimony in this proceeding?**

4 A. The purpose of my testimony in this proceeding is to support the proposed  
5 Margin Decoupling Tracker which properly aligns the Company's interest  
6 with those of the customers and establishes a rate design that complies with  
7 the policy goals articulated in recent Federal and State legislation as detailed  
8 in the Company's petition in this proceeding. My testimony will also  
9 support the underlying customer usage factors as approved by this Authority  
10 in the Company's most recent rate case proceeding. Specifically, my  
11 testimony addresses Issues 1 and 2 identified by the Hearing Officer in the  
12 October 13, 2009 *Order Granting Intervention, Determining Issues, and*  
13 *Establishing Procedural Schedule in this proceeding.*

14 **Q. What are the rate design implications of the impact of conservation on**  
15 **customer usage in recent years?**

16 A. Traditional LDC volumetric rate design inappropriately depends on a  
17 variable charge to recover fixed costs. While customers prefer a volumetric  
18 rate design, there is a logical disconnect in attempting to recover fixed costs  
19 on a variable basis.

20 **Q. How does the variable recovery of fixed costs impact the Company?**

21 A. It causes volatile cost recovery from year-to-year in the operation of the  
22 Company which is detrimental to both the customers and the shareholders.  
23 Cost recovery based on volumetric rates also ensures that the Company will



1 actively seek increased sales volumes in order to maximize the opportunity  
2 to recover its approved margin.

3 **Q. Does traditional volumetric rate design conflict with the interests of**  
4 **customers in being more energy efficient?**

5 A. Yes. The incentive that volumetric rates provide to LDCs to maximize gas  
6 usage is in direct conflict with customers' interests in reducing their bills  
7 through conservation of gas usage. In other words, under a volumetric rate  
8 structure, when a customer conserves natural gas, they benefit from the cost  
9 savings on their overall bill associated with the avoided natural gas usage;  
10 however, such reductions in gas usage are harmful to the Company because  
11 they prevent the Company from recovering its approved margin (which is  
12 just a portion of the bill).

13 **Q. How does the margin shortfall impact customers?**

14 A. In a general rate case proceeding, the projected level of future annual natural  
15 gas usage by customers is a variable that cannot be predicted with complete  
16 accuracy. It is also the cost of service component that the Company has the  
17 least ability to control. This means that when customer usage varies from  
18 what is projected in setting rates, the Company may earn more or less than  
19 the Authority intended when the rates were approved. If such usage is more  
20 than projected, customers will pay too much for gas service and the  
21 Company will over-recover its approved level of margin. If usage is less  
22 than projected, customers will pay too little for gas service and the Company  
23 will under-recover its approved level of margin. This could lead the  
24 Company to initiate a costly rate case proceeding to address the shortfall.  
25 This causes a return to a regulatory environment of frequent general rate

1 proceedings in which lawyers and consultants benefit greatly and customers  
2 foot the bill.

3 **Q. What is the best way to address this problem?**

4 A. The appropriate rate design methodology is to seek fixed cost recovery  
5 through margin decoupling.

6 **Q. What rate design methods have previously been used to address this  
7 fixed costs recovery issue?**

8 A. Weather related declining usage was mitigated in the early 1990's with the  
9 introduction of Weather Normalization Adjustment (WNA) mechanisms.  
10 However, appliance efficiency gains during the 1990's and extreme price  
11 volatility during more recent years have resulted in significant non-weather  
12 related usage declines. In recent years, Piedmont has estimated the cause of  
13 usage declines to be almost equally divided between weather related factors  
14 and non-weather related factors. In essence, the variability in usage  
15 formerly seen in connection with weather has now been duplicated by other  
16 non-weather related factors influencing customer consumption.

17 **Q. How is Piedmont proposing to mitigate the non-weather related usage  
18 declines?**

19 A. Piedmont is proposing to implement the Margin Decoupling Tracker as  
20 defined in the petition as Service Schedule 317. The mechanism will  
21 provide Piedmont the opportunity to properly recover approved levels of  
22 fixed costs in the face of continuing declines in average per customer usage.  
23 It also aligns the interest of Piedmont's shareholders with customers in  
24 regard to conservation.

25

26

1 **Q. Please describe the decoupling mechanism treatment you are proposing.**

2 A. The Company would calculate the amount of margin that it should have  
3 recovered from each residential rate schedule using factors approved in the  
4 most recent rate case as applied to actual customers served. These factors  
5 are shown in Exhibit \_\_\_\_(DRC-1). Each month, this amount would be  
6 compared to the actual amount of margin that was recovered by the  
7 Company from these rate classes and the difference, whether it is positive or  
8 negative, would be placed in the Decoupling Tracker Deferred Account.  
9 Twice a year, Piedmont would file for adjustments to its rates to refund to  
10 customers any over-collections or to collect from customers any under-  
11 collections. Further details are provided in Service Schedule No. 317 as  
12 filed with the petition and as attached hereto as Exhibit \_\_\_\_(DRC-2).

13 **Q. Why has the Company proposed the Margin Decoupling Tracker as the**  
14 **appropriate rate design to properly recover fixed costs?**

15 A. The Company implemented a decoupled rate design in North Carolina in  
16 2005 and it has proven to provide the appropriate combination of fixed costs  
17 recovery with proper market signals while aligning the Company's interest  
18 with the customers. It has resulted in a stabilized cost of service recovery  
19 that has improved operating efficiency and avoided volatile rate increases  
20 previously required by significant margin shortfalls. It has also resulted in a  
21 consistent regulatory environment which will continue to reduce the  
22 occurrence of costly rate cases in future periods. The Margin Decoupling  
23 Tracker methodology has also been applied successfully in many other  
24 jurisdictions as noted in the testimony of Company Witness Feingold.



1 **Q. Why has the Company proposed the Margin Decoupling Tracker as**  
2 **opposed to an SFV (Straight Fixed Variable) rate design?**

3 A. SFV is a rate design that would properly recover fixed costs. However, the  
4 Company would note that, in its view, the Margin Decoupling Tracker  
5 provides a somewhat more specific billing approach for each individual  
6 customer that is still driven by the amount of gas each customer uses. Using  
7 SFV to recover total fixed costs does not accommodate customer specific  
8 usage patterns as easily as a Margin Decoupling Tracker. Also, using SFV  
9 requires the difficult process of classifying customers into smaller groups to  
10 establish appropriate fixed monthly charges.

11 **Q. Please explain Exhibit \_\_\_(DRC-1).**

12 A. The Margin Decoupling Tracker requires a specification of several factors,  
13 including base load factors, heat load factors, "R" factors and normal  
14 monthly degree-days in each general rate case. In the Company's 2003  
15 general rate case, the Base Load and Heat Sensitivity Factors were  
16 generated from linear regression analyses on the consolidated monthly data  
17 after they are normalized and adjusted for growth, and the "R" factors  
18 (which designates the amount of fixed cost recovery the Company receives  
19 for each therm of usage) were calculated by subtracting the fixed and  
20 variable gas costs from the approved rates. The monthly degree-days are  
21 30-year averages that begin on the 15<sup>th</sup> day of the month and run to the 15<sup>th</sup>  
22 day of the following month in order to account for the billing cycle effects  
23 of an accounting month. This is the same convention used in the  
24 normalization calculations for residential and commercial customers. It is  
25 also the same convention and factors that are currently used in the WNA  
26 (Weather Normalization Adjustment) calculations.



1 **Q. Does the Company propose to continue the separate WNA mechanism?**

2 A. Yes. WNA is the most accurate method to provide a customer-specific  
3 adjustment for weather. Rate designs that incorporate customer specific  
4 calculations when feasible provide the most appropriate market signals.  
5 Also, in other jurisdictions utilizing decoupling, there has been a consistent  
6 need to estimate the weather-sensitive portion versus the energy efficiency  
7 portion. The WNA in Tennessee (in place since 1991) provides this  
8 information in a proven calculation that is audited annually by the TRA.

9 **Q. Why is Piedmont requesting that the Margin Decoupling Tracker apply**  
10 **to residential customers?**

11 A. The decoupling methodology proposed by the Company is based on  
12 normalization of usage for a customer group with homogeneous usage  
13 patterns. The residential customer class consistently exhibits these usage  
14 patterns and has exhibited significant conservation since the 2003 rate case  
15 which has seriously limited the ability of the Company to recover the  
16 approved level of fixed costs.

17 **Q. Is the Company proposing decoupling for commercial customers?**

18 A. Although the commercial customer class exhibits the same homogenous  
19 usage patterns as residential, the conservation impact since the Company's  
20 2003 rate case has been inconsistent and not nearly as significant as  
21 residential. Therefore, the Company proposes to limit decoupling in this  
22 proceeding to residential customers. Filing only for residential decoupling  
23 limits the scope of this proceeding and simplifies the Authority's decision-  
24 making, thereby facilitating a prompt determination of this matter and

1 implementation of Piedmont's proposed energy efficiency programs. The  
2 Company will continue to review results of conservation within the  
3 commercial customer class to determine if decoupling would be appropriate  
4 for that customer class at some future time.

5 **Q. Did the Company consider decoupling for industrial customers?**

6 A. Industrial customers have a wide range of usage patterns that do not produce  
7 mathematically consistent relationships. In addition, the usage for  
8 individual customers in the industrial group can vary significantly from  
9 period to period mainly due to economic circumstances rather than  
10 conservation and efficiency efforts. Due to these issues, the Company feels  
11 that decoupling can not be applied reasonably and consistently to industrial  
12 customers at this time.

13 **Q. Why has the Company proposed to use Base Load, Heat Sensitivity,**  
14 **and R Factor from the 2003 general rate case, Docket No. 03-00313, in**  
15 **the Margin Decoupling Tracker?**

16 A. In 2003, the TRA approved rates for the Company based on an extensive  
17 Cost of Service examination involving the Company, the TRA staff, the  
18 TRA and various intervenors. The TRA set a level of overall return based  
19 on this analysis. A critical component of the Cost of Service analysis was  
20 the usage patterns of residential customers and the appropriate level of  
21 margin the Company was approved to receive from this customer class.  
22 Since the 2003 proceeding, the Company has worked continuously to  
23 control costs in order to provide quality customer service at a reasonable

1 price. Margin recovery has been the one variable from the 2003 rate case  
2 that has been a significant impediment to the Company earning the approved  
3 return. The current petition by the Company is a simple, inexpensive  
4 method to address this issue. It allows the TRA to set rates to recover cost  
5 levels approved in the 2003 TRA rate case Order (which were established  
6 based on a comprehensive and thorough review of Piedmont's cost of  
7 service by all interested parties) without adding significant costs to the  
8 customers.

9 **Q. Are the usage factors from 2003 used in any other proceeding before**  
10 **this Authority?**

11 A. Yes. These usage factors are the critical components in the WNA  
12 calculation used to adjust each customers bill during the winter months of  
13 November through March in each winter season since November 1, 2003.  
14 The calculations are subject to an annual audit by the TRA Staff and the  
15 results of these audits have been presented to the TRA annually. These  
16 results are therefore subject to review and audit by all intervening parties.  
17 No significant issues have been identified during these reviews and at no  
18 point have the usage factors been questioned.

19 **Q. Please describe Piedmont's proposal regarding funding for its proposed**  
20 **energy efficiency programs.**

21 A. With the exception of certain shareholder funds Piedmont proposes to  
22 contribute during the first few years of its programs, Piedmont proposes that  
23 the funds utilized to operate its energy efficiency programs be recorded and  
24 recovered through its ACA account.

1   **Q.   What is Piedmont's proposal regarding shareholder funding of its**  
2       **programs during the first three years?**

3   A.   Piedmont proposes to contribute \$250,000, \$150,000, and \$75,000  
4       respectively during the first three years of the operation of its energy  
5       efficiency programs. Piedmont believes strongly that energy efficiency  
6       programs are an important measure to help customers reduce their  
7       consumption of natural gas and Piedmont is willing to demonstrate its  
8       commitment to that belief by making significant contributions to these  
9       programs in their initial years.

10   **Q.   Do you have anything further to add to your testimony?**

11   A.   Not at this time.



**BEFORE THE TENNESSEE REGULATORY AUTHORITY  
NASHVILLE, TENNESSEE**

IN RE:

PETITION OF PIEDMONT NATURAL GAS )  
COMPANY, INC. TO IMPLEMENT A )  
MARGIN DECOUPLING TRACKER (MDT) )  
AND RELATED ENERGY EFFICIENCY AND )  
CONSERVATION PROGRAMS )

Docket No. 09-00104

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**AFFIDAVIT**

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**STATE OF NORTH CAROLINA** )

**COUNTY OF MECKLENBURG** )

David R. Carpenter, being duly sworn, deposes and says that he is the David R. Carpenter whose Testimony accompanies this affidavit; that such testimony was prepared by him; that he is familiar with the contents thereof; that the facts set forth therein are true and correct to the best of his knowledge, information and belief; and that he does adopt the same as his sworn testimony in this proceeding.



David R. Carpenter

Mecklenburg County, North Carolina

Signed and sworn to before me this day by David R. Carpenter

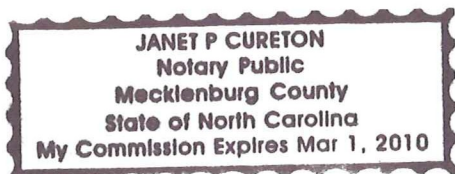
Date:

Dec. 2, 2009

  
Janet P. Cureton, Notary Public

(Official Seal)

My commission expires: March 1, 2010



**EXHIBIT \_\_\_\_ (DRC-1)**

**Piedmont Natural Gas Company, Inc.**  
**Factors for the Margin Decoupling Tracker**  
**DOCKET NO. 09-00104**

	<u>"R" Value</u>		<u>Heat Factor</u>	<u>Base Factor</u>
	<u>Winter</u>	<u>Summer</u>		
	(\$/therms)	(\$/therms)	(therms/DDD)	(therms/mo.)
Residential - Value	0.32000	0.27000	0.21337	23.08653
Residential - Standard	0.32000	0.27000	0.15957	3.91564

Normal  
DDD

January	841.6
February	807.2
March	510.1
April	330.3
May	113.8
June	14.5
July	0.2
August	0.0
September	2.0
October	91.0
November	318.5
December	573.0

**EXHIBIT\_\_\_\_(DRC-2)**



## **SERVICE SCHEDULE NO. 317**

### **Margin Decoupling Tracker (MDT) Rider**

#### **1. Provision for Adjustment**

The base rates per therm (100,000 Btu) for gas service set forth by the Company in Rate Schedules 301 and 321 shall be adjusted by an amount hereinafter described and referred to as the "Margin Decoupling Adjustment." The Margin Decoupling Adjustment shall be calculated, as a rate decrement or increment, and applied to Rate Schedules 301 and 321 to refund or recover the balance in the "Margin Decoupling Deferred Account." The Margin Decoupling Deferred Account shall be established by a monthly adjustment hereinafter described and referred to as the "Margin Decoupling Deferred Account Adjustment."

#### **2. Definitions**

For the purposes of this Rider:

"Authority" means the Tennessee Regulatory Authority.

"Relevant Rate Order" means the final order of the Authority in the most recent litigated rate case of the Company fixing the rates of the Company or the most recent final order of the Authority specifically prescribing or fixing the factors and procedures to be used in the application of this Rider.

#### **3. Computation of Margin Decoupling Deferred Account Adjustment**

The Margin Decoupling Deferred Account Adjustment, for each of the Rate Schedules 301 and 321, shall be computed monthly to the nearest dollar by the following formulas:

$$\text{Base Load Therms}_i = \text{Actual Customers}_i \times \text{Base Load}_i$$

$$\text{Heat Sensitive Therms}_i = \text{Actual Customers}_i \times \text{Heat Sensitivity Factor}_i \times \text{Normal Degree Days}$$

$$\text{Normalized Therms}_i = \text{Base Load Therms}_i + \text{Heat Sensitive Therms}_i$$

$$\text{Normalized Margin}_i = \text{Normalized Therms}_i \times \text{R Factor}_i$$

$$\text{Actual Margin}_i = \text{Actual Therms}_i \times \text{R Factor}_i$$

$$\text{Margin Decoupling Deferred Account Adjustment}_i = \text{Normalized Margin}_i - \text{Actual Margin}_i - \text{Actual WNA}_i$$

Where:

$i$ =	any particular rate schedule
Actual Customers <sub><math>i</math></sub> =	Actual customers billed for the billing cycle month for the $i^{\text{th}}$ rate schedule
Actual Therms <sub><math>i</math></sub> =	Actual therms used for the billing cycle month for the $i^{\text{th}}$ rate schedule
R Factor <sub><math>i</math></sub> =	base rate (approved rate, not including demand and commodity cost of gas) for the $i^{\text{th}}$ rate schedule or classification utilized by the Authority in the Relevant Rate Order for the purpose of determining normalized test year revenues.
Heat Sensitivity Factor <sub><math>i</math></sub> =	heat sensitive factor for the $i^{\text{th}}$ rate schedule or classification utilized by the Authority in the Relevant Rate Order for the purpose of determining normalized test year revenues.
Normal Degree Days =	normal, 15 <sup>th</sup> -day to 15 <sup>th</sup> -day, heating degree days utilized by the Authority in the Relevant Rate Order for the purpose of determining normalized test year revenues.
Base Load <sub><math>i</math></sub> =	base load sales for the $i^{\text{th}}$ schedule or classification utilized by Authority in the Relevant Rate Order for the purpose of determining normalized test year revenues.
Actual WNA <sub><math>i</math></sub> =	Actual Weather Normalization Adjustment used for the billing cycle month for the $i^{\text{th}}$ rate schedule

#### 4. Filing with Authority

The Company will file monthly as directed by the Authority (a) a copy of each computation of the Margin Decoupling Deferred Account Adjustment by rate schedule, (b) a schedule showing the effective date of each such Margin Decoupling Deferred Account Adjustment, and (c) a schedule showing the factors of values derived from the Relevant Rate Order used in calculating such Margin Decoupling Deferred Account Adjustment. Such reports will be filed within 60 days after the end of the month for which the report is being filed.

#### 5. Computation of Margin Decoupling Adjustment

The Margin Decoupling Adjustment shall refund or recover the balance in the Margin Decoupling Deferred Account, and shall be applied as a rate decrement or increment effective for both the first billing cycle in April through the final billing cycle in October of each year and for the first billing cycle in November through the final billing cycle in March of each year. The Margin Decoupling Adjustment shall be calculated to the nearest one-thousandth cent per therm by the following formula:

$$\text{Margin Decoupling Adjustment} = \frac{\text{Margin Decoupling Deferred Account Balance}}{\text{Annual Therms}_{ti}}$$

Where:

$$\text{Margin Decoupling Deferred Account Balance} = \text{Balance at December 31 and July 31}$$

$$\text{Annual Therms} = \text{Normalized volumes assigned in most recent rate case}$$

$$ti = \text{Total for Rate Schedules 301 and 321}$$

#### 6. Interest

Interest will be applied to the Margin Decoupling Deferred Account at rate equivalent to the interest rate applied to the "Refund Due Customers Account".

#### 7. Filing with Authority

The Company will file revised tariffs for Authority approval upon 30 days notice to implement a rate decrement or a rate increment for the Margin Decoupling Adjustment each April and November. With the filing the Company will include a copy of each computation of the Margin Decoupling Adjustment.

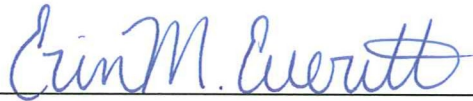
## CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing Pre-Filed Direct Testimony was served via U.S. Mail upon:

Ryan L. McGehee  
Assistant Attorney General  
Office of the Attorney General  
Consumer Advocate and Protection Division  
PO Box 20207  
Nashville, Tennessee 37202-0207

C. Scott Jackson  
Senior Counsel  
Office of the Attorney General  
Consumer Advocate and Protection Division  
PO Box 20207  
Nashville, Tennessee 37202-0207

This 4th day of December, 2009.

  
\_\_\_\_\_