

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. G-9, SUB 698

In the Matter of:)	
)	
Application of Piedmont Natural Gas)	
Company, Inc. for Approval of Appendix F)	PETITION
to its North Carolina Service Regulations)	
)	

Piedmont Natural Gas Company, Inc. (“Piedmont” or the “Company”), through counsel and pursuant to G.S. 62-138 and Rule R1-5 of the Rules and Regulations of the North Carolina Utilities Commission (“Commission”), respectfully requests approval by the Commission of new proposed Appendix F to Piedmont’s Service Regulations attached hereto and denominated as the Statement of Alternative Gas Requirements (“Appendix F”). Appendix F sets forth the terms and conditions under which Piedmont proposes to accept and receive “Alternative Gas” onto its system and pursuant to which it will continue to accept and redeliver such gas to customers receiving service from Piedmont. In support of this request, Piedmont respectfully shows unto the Commission the following:

1. It is respectfully requested that any notices or other communications with respect to this Petition be sent to:

James H. Jeffries IV
 Moore & Van Allen PLLC
 100 North Tryon Street, Suite 4700
 Charlotte, NC 28202-4003
 Telephone: 704-331-1079
 jimjeffries@mvalaw.com

2. Piedmont is a subsidiary of Duke Energy Corporation and is engaged in the business of transporting, distributing, and selling natural gas in the states of North Carolina,

South Carolina and Tennessee. Piedmont is a public utility under the laws of this State, and its public utility operations in North Carolina are subject to the jurisdiction of this Commission.

3. Over the last fifty (50) years, the gas sold or redelivered by Piedmont in North and South Carolina has been natural gas originating from naturally occurring underground supply reserves primarily located in and around the Gulf of Mexico or, more recently, from various shale formations (primarily the Marcellus or Utica formations) in the Mid-Atlantic region. These supplies of natural gas have been of fairly consistent composition and have been delivered to Piedmont over the facilities of interstate pipelines such as Transcontinental Gas Pipe Line and Columbia Gas, among others. Each of these interstate pipelines has tariffed gas quality standards designed to address naturally occurring fluctuations in the heat content, chemical composition, and other physical attributes of gas quality of the natural gas produced in the areas described above. Some of these interstate pipeline gas quality standards are relatively broad in scope although in actual practice the range of variations in gas quality actually received by Piedmont from these pipelines has been fairly narrow.

4. Recently, as a result of economic and environmental incentives created by state and federal legislation, Piedmont has been approached by a number of developers regarding the possibility of sourcing supplies of methane from alternative, non-traditional sources such as swine or chicken waste or landfills and injecting that gas into Piedmont's local distribution system in North Carolina for use by Piedmont's customers. The viable proposals, to date, have not involved any proposal to sell such methane to Piedmont directly but instead to

deliver this alternative methane (“Alternative Gas”) to Piedmont for redelivery to an existing Piedmont transportation customer.

5. The proposed injection and delivery of such Alternative Gas into Piedmont’s system raises several operational and practical concerns for Piedmont. The first is that such injection and delivery will require additional facilities to be constructed, both upstream and downstream of the delivery point, in order to physically accomplish injection and delivery of the Alternative Gas. On Piedmont’s side of the delivery point, these facilities would include receipt and delivery metering and regulating equipment as well as a gas chromatograph to monitor the constituent components of the Alternative Gas. These incremental facilities are expensive and a mechanism for compensating Piedmont for such expenditures is required.

6. In addition to the practical issues of how the equipment necessary to facilitate deliveries of this Alternative Gas onto Piedmont’s system is going to be funded, Piedmont must also be reasonably assured that the receipt and delivery of Alternative Gas will not cause damage or disruption to its existing natural gas distribution system or to the deliveries to or equipment of its existing customers. In this regard, it is important to note that the Alternative Gas proposed to be injected into Piedmont’s distribution system - which may originate from landfills, or biologic waste conversion facilities - is not natural gas and is comprised of varying constituents in addition to methane that are different from those contained in natural gas. These include potentially corrosive chemical compounds as well as potentially dangerous biologic constituents which may pose a threat to either the health of humans coming into contact with them or to the physical integrity of Piedmont’s distribution system or to the equipment of Piedmont’s customers.

7. Even where the Alternative Gas contains compounds that are also found in natural gas, those compounds may be found in different proportions than is experienced in the natural gas streams delivered from interstate pipelines which can have an effect on and impact the operations of the equipment transporting such Alternative Gas or burning it as an energy source. These can be as simple as variations in heat content which can result in problems with the performance of equipment burning such Alternative Gas to more complicated and potentially problematic chemical reactions which may threaten the physical integrity of the systems and equipment they come in contact with.

8. These differences and potential variations in the composition of Alternative Gas, as compared to the natural gas stream historically received from interstate pipelines, can also pose potential problems for Piedmont customers who utilize gas for process purposes in manufacturing.

9. The advent of Alternative Gas as a substitute or replacement of natural gas within the distribution systems of natural gas local distribution companies is a relatively new phenomenon and there is comparatively little experience or data to support the conclusion that it will not harm or disrupt the facilities of Piedmont or its customers or threaten the public health. Only a few instances of American gas utility acceptance of such Alternative Gas supplies are known to Piedmont and in each case where a gas distribution utility has agreed to accept Alternative Gas onto its system, it has done so subject to significant testing requirements and other restrictions defining under what circumstances it will receive such Alternative Gas.

10. Piedmont is supportive of the underlying environmental goals prompting the proposed utilization of Alternative Gas as a substitute or replacement fuel source for natural gas but is also fully cognizant of the need to ensure that such Alternative Gas will not cause damage to Piedmont's facilities or the facilities of its customers, will not diminish or disrupt the quality of gas service received by its customers, and will not be harmful to the public health.

11. In order to address these concerns and to facilitate the transparent and informed bases upon which Piedmont will accept and receive Alternative Gas into its distribution system, Piedmont is filing herewith its proposed Statement of Alternative Gas Requirements and requesting approval hereof by the Commission. Piedmont is requesting that this proposed Statement of Alternative Gas Requirements be approved as Appendix F to Piedmont's North Carolina Service Regulations. The standards set forth in the proposed Appendix F are in large part drawn from standards adopted by other natural gas distribution utilities in agreeing to accept and receive Alternative Gas supplies on their systems and, in Piedmont's opinion, represent appropriately cautious parameters for the receipt of such Alternative Gas. As proposed, the application of Piedmont's rate schedules and its Service Regulations, with respect to Alternative Gas, shall be treated in a manner equivalent to "Gas" or "Natural Gas" except to the extent that the proposed Appendix F specifies more restrictive obligations applicable to Alternative Gas to ensure the safety, consistency, and reliability of such Alternative Gas.

12. Piedmont hereby advises the Commission that it is concurrently filing for Commission approval of a Receipt and Interconnection Agreement with C2E Renewables NC

in Docket No. G-9, Sub 699 which seeks to establish the grounds upon which Piedmont proposes to accept and receive Alternative Gas from a potential supplier. The Receipt and Interconnection Agreement filed in that docket incorporates the identical Statement of Alternative Gas Requirements attached hereto, which has been agreed to and is supported by C2E Renewables NC. That Receipt and Interconnection Agreement also provides that any revisions to Piedmont's proposed Statement of Alternative Gas Requirements required by the Commission in this docket will be incorporated into service under that agreement. The reason for the concurrent filing in Docket No. G-9, Sub 699 is to enable C2E Renewables NC to move forward with its plans to deliver Alternative Gas to Piedmont, for redelivery to an existing Piedmont transportation customer, on an expeditious basis without regard to the pendency or progress of this proceeding.

WHEREFORE, for all of the reasons set forth above, Piedmont Natural Gas Company, Inc. respectfully requests that the Commission approve the attached proposed Appendix F to its North Carolina Service Regulations on or before January 5, 2017 or as soon thereafter as is reasonably practicable.

Respectfully submitted this 6th day of December, 2016.

Piedmont Natural Gas Company, Inc.

/s/ James H. Jeffries IV
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STATE OF NORTH CAROLINA
COUNTY OF MECKLENBURG

VERIFICATION

Pia Powers, being duly sworn, deposes and says that she is Director – Regulatory Affairs of Piedmont Natural Gas Company, Inc., that as such, she has read the foregoing Petition and knows the contents thereof; that the same are true of her own knowledge except as to those matters stated on information and belief and as to those she believes them to be true.

Pia Powers

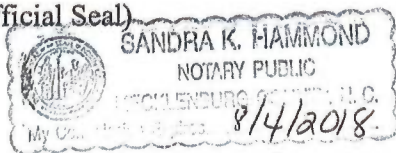
Pia Powers

Mecklenburg County, North Carolina
Signed and sworn to before me this day by Pia Powers.

Date: December 6, 2016

Sandra K. Hammond
Sandra K. Hammond, Notary Public

(Official Seal)



My commission expires: August 4, 2018

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STATEMENT OF ALTERNATIVE GAS REQUIREMENTS

This Statement of Alternative Gas Requirements sets forth the terms and conditions under which Piedmont will accept “Alternative Gas” onto its system and pursuant to which it will continue to accept and redeliver such gas to customers receiving service from Piedmont. The terms of this Statement of Alternative Gas Requirements may be modified from time-to-time, with the approval of the North Carolina Utilities Commission, based upon Piedmont’s actual operating experience with Alternative Gas and/or any threats to Piedmont’s ability to provide safe, reliable, and economic natural gas service to the public.

For purposes of this Statement of Alternative Gas Requirements, “Alternative Gas” shall mean gas capable of combustion in customer appliances or facilities which is similar in heat content and chemical characteristics to natural gas produced from traditional underground well sources and which is intended to act as a substitute or replacement for Natural Gas (as that term is defined in Piedmont’s North Carolina Service Regulations). Alternative Gas shall include but not be limited to biogas, biomethane, and landfill gas, as well as any other type of natural gas equivalent produced or manufactured from sources other than traditional underground well sources. For purposes of the application of Piedmont’s rate schedules and its Service Regulations, Alternative Gas shall be treated in a manner equivalent to “Gas” or “Natural Gas” except to the extent that this Statement of Alternative Gas Requirements specifies more restrictive obligations applicable to Alternative Gas, in which case the provisions of this Statement of Alternative Gas Requirements shall control.

Receipt of Alternative Gas

Piedmont’s obligation to receive and accept Alternative Gas shall be limited as set forth below and to situations where Piedmont is able to physically receive the Alternative Gas into its system without materially impacting its ability to provide service to its customers, meet its legal, contractual and regulatory obligations, or adversely impact its ability to safely and reliably operate its system. Construction of facilities needed to receive and accept Alternative Gas shall be governed by Piedmont’s standard feasibility analyses and Piedmont shall have no obligation to construct economically infeasible facilities to enable receipt of Alternative Gas. Piedmont may require prospective suppliers of Alternative Gas to enter into interconnection and facilities reimbursement agreements, as discussed below, as a condition to receipt and acceptance of Alternative Gas.

Testing Requirements

Initial Testing. Prior to the initial receipt of Alternative Gas by Piedmont, any supplier thereof

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shall provide the results of two consecutive independent laboratory tests, performed no less than 7 days apart, demonstrating that supplier's Alternative Gas is in conformance with the Alternative Gas Quality Standards set forth herein. After the initial receipt of Alternative Gas by Piedmont, any supplier thereof shall provide the results of 3 consecutive independent laboratory tests, performed no less than 30 days apart, demonstrating that supplier's Alternative Gas is in conformance with the Alternative Gas Quality Standards set forth herein. Such testing shall be performed by an independent third-party laboratory satisfactory to Piedmont at supplier's sole cost and expense.

Subsequent Testing. If receipt of supplier's Alternative Gas is interrupted or suspended pursuant to the terms hereof, then prior to resumption of acceptance of deliveries of Alternative Gas from such supplier, that supplier shall provide the results of two consecutive independent laboratory tests, performed no less than 7 days apart, demonstrating that supplier's Alternative Gas continues to be or has been restored to be in conformance with the Alternative Gas Quality Standards set forth herein. After the restored receipt of Alternative Gas by Piedmont, any supplier thereof shall provide the results of 3 consecutive independent laboratory tests, performed no less than 30 days apart, demonstrating that supplier's Alternative Gas is in conformance with the Alternative Gas Quality Standards set forth herein. Such testing shall be performed by an independent third-party laboratory satisfactory to Piedmont at supplier's sole cost and expense.

Quarterly Testing. In addition to the other testing requirements set forth herein, and on no less than a quarterly basis, supplier shall provide to Piedmont the results from independent laboratory testing, satisfactory to Piedmont and at supplier's sole cost and expense, demonstrating that supplier's Alternative Gas continues to conform to the Alternative Gas Quality Standards set forth herein.

Supplemental Testing. Piedmont reserves the right to request supplier, at supplier's sole expense, to perform additional testing for constituent or contaminant compounds in addition to those expressly listed herein, should (i) the presence of such compounds be determined by Piedmont to be reasonably possible in supplier's Alternative Gas stream, and (ii) should such constituents or compounds pose an actual or prospective threat to Piedmont's system or the provision of safe and reliable natural gas service to Piedmont's customers.

Alternative Gas Source. In the event a supplier flowing Alternative Gas onto Piedmont's system determines to alter its source of production of Alternative Gas or to take action that might otherwise be expected to change the characteristics or constituent components of its gas stream, supplier shall promptly notify Piedmont, in advance, of such prospective change and Piedmont shall have no obligation to receive Alternative Gas from such supplier until it has been provided with the results of two consecutive independent laboratory tests, performed no less than 7 days apart, demonstrating that supplier's modified Alternative Gas is in conformance with the

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Alternative Gas Quality Standards set forth herein. Such testing shall be performed by an independent third-party laboratory satisfactory to Piedmont at supplier's sole cost and expense.

With regard to any of the testing provided for above, Piedmont shall be provided reasonable advance notice of such testing and shall have the right to observe the samples being taken. Test results shall be promptly shared between Piedmont and supplier upon receipt of such results from the testing laboratory.

Alternative Gas Quality Standards

1. All Alternative Gas delivered to Piedmont shall fully comply with the quality standards and specifications set forth below.

Alternative Gas delivered to Piedmont shall be free of components which might interfere with its merchantability or cause damage to the operation of Piedmont's system or equipment or those of its customers. All such Alternative Gas delivered to Piedmont shall specifically conform to the following minimum Alternative Gas Quality Standards:

Delivery Temperature: Minimum of 40°F and maximum of 120°F.

Methane: Minimum methane content of 94%.

Heating Value: Between 980 and 1100 Btu/SCF at dry gas conditions (14.73 psia at 60°F).

Interchangeability: WOBBE 1290 and 1370.

Hydrogen Sulfide (H₂S): Less than or equal to 0.25 grain/100 SCF.

Mercaptan: Shall not exceed 0.5 grain/100 SCF.

Total Sulfur: Less than or equal to 10 grain/100 SCF, including sulfur from hydrogen sulfide and mercaptan.

Water: Less than or equal to 7 pounds/MMSCF at dry gas conditions (14.73 psia at 60°F).

CHDP: Not greater than 20°F.

Carbon Dioxide (CO₂): Not more than 2% by volumetric basis.

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Nitrogen: Not more than 2% by volumetric basis.

Oxygen: Not more than 0.2% by volumetric basis.

Carbon Monoxide (CO): Not more than 0.1% by volume.

Total Inerts: Not more than 3.2% by volumetric basis.

Hydrogen: No more than 600 ppm.

Solid Particle Size: Gas filtration is required and shall be sufficient to remove 99.99% of solid particles 3 microns or larger.

Dust, Gums & Solid Matter: The gas shall be free of dust, gums, gum-forming constituents, or other liquid or solid matter which might become separated from the gas in the course of transportation through pipelines.

Biologicals: Gas, including any associated liquids, shall not contain any micro-biological organisms exceeding 4×10^4 /scf (qPCR per APB, SRB, IOB group), active bacteria or bacterial agents > 0.2 microns.

Organic Silicon (Siloxanes): Total Organic Silicon (siloxanes) shall not be greater than 0.40 mg of SJ/Nm³.

Odorization Masking/Fading Agents (VOC): Gas shall be free of agents, compounds or the like which will interfere with the process of the human olfactory process in the recognition of odorized natural gas through bonding with the odorant or causing interference with the human olfactory senses.

VOC: Alternative Gas shall be free from any halogenated compounds that when, through the process of combustion, form dioxins.

The following Constituents of Concern shall be limited as indicated:

Constituent	Limit mg/m ³ (ppmv)
Arsenic	0.48 (0.15)
p-Dichlorobenzene	140 (24)
Ethylbenzene	650 (150)
n-Nitroso-di-n-propylamine	0.81 (0.15)
Vinyl Chloride	21 (8.3)

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Antimony	30 (6.1)
Copper	3.0 (1.2)
Lead	3.8 (0.44)
Methacrolein	53 (18)
Alkyl thiols (mercaptans)	N/A (610)
Toluene	45,000 (12,000)

If additional equipment is required to ensure consistent compliance of supplier's Alternative Gas to the Alternative Gas Quality Standards set forth above, Piedmont may require supplier to purchase, and promptly install, any additional equipment necessary to meet the referenced gas quality specifications at supplier's expense. The unreasonable refusal to do so shall be a violation of supplier's obligations hereunder.

Termination of Obligation to Receive Gas

If Alternative Gas proffered for delivery to Piedmont fails to meet the specifications of Piedmont's Alternative Gas Quality Standards set forth herein, or is otherwise out of conformance with the provisions of this Statement of Alternative Gas Requirements, Piedmont may interrupt or suspend its receipt and acceptance of such Alternative Gas until such Alternative Gas is in conformity with this Statement of Alternative Gas Requirements and such conformity is verified by an independent certified third-party laboratory satisfactory to Piedmont as provided above.

Piedmont shall also have the right to interrupt or suspend the receipt of Alternative Gas at any time from any supplier in the event that: (i) constituent compounds or components of supplier's Alternative Gas are determined to pose an actual or potential health risk to the public or to Piedmont's employees that is different in degree or nature from the risks normally attendant upon the use and transportation of natural gas; (ii) testing or other evidence reasonably indicates that supplier's Alternative Gas contains constituent compounds or components reasonably likely to or actually causing harm to Piedmont's facilities or equipment (including corrosion damage); (iii) testing or other evidence reasonably indicates that supplier's Alternative Gas contains constituent compounds or components reasonably likely to or actually causing harm to the facilities or equipment of Piedmont's other customers (including corrosion damage); or (iv) the chemical characteristics or physical properties of supplier's Alternative Gas are impeding Piedmont's ability to provide safe and reliable service to Piedmont's other customers.

In the event of such interruption or suspension of service, Piedmont shall have no obligation to resume receipt of Alternative Gas from supplier until the correction or remediation of the problem prompting such interruption or suspension of service has occurred as determined by Piedmont in the exercise of its reasonable discretion.

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Interconnection Agreement

Prior to and as a condition of delivering Alternative Gas to Piedmont and Piedmont's acceptance thereof, any proposed supplier must enter into an interconnection and facilities reimbursement agreement with Piedmont addressing, to Piedmont's reasonable satisfaction, the terms and conditions applicable to construction and payment for any needed incremental facilities required to accept or receive supplier's Alternative Gas. Piedmont shall have no obligation to accept or receive Alternative Gas until such agreement is executed and its obligations to accept and receive Alternative Gas following such execution shall be governed by the interconnection and reimbursement agreement and this Statement of Alternative Gas Requirements.

Indemnity/Liability

As a condition to the receipt and acceptance of Alternative Gas by Piedmont, all suppliers of Alternative Gas shall indemnify and hold Piedmont harmless from any and all claims, suits, actions, debts, accounts, damages, costs, losses and expenses including reasonable attorney fees, arising from or related to the delivery to Piedmont by supplier of any Alternative Gas that fails to meet the Alternative Gas Quality Standards set forth herein or otherwise is not in compliance with this Statement of Alternative Gas Requirements.

PIEDMONT SHALL HAVE NO RESPONSIBILITY OR LIABILITY TO SUPPLIER, SUPPLIER'S CUSTOMER, OR ANY THIRD-PARTY ASSOCIATED WITH ITS EXERCISE OF THE RIGHT TO INTERRUPT OR SUSPEND RECEIPT OF ALTERNATIVE GAS AS PROVIDED FOR ABOVE AND IN NO EVENT SHALL BE LIABLE FOR ANY PUNITIVE, CONSEQUENTIAL, OR EXEMPLARY DAMAGES ARISING FROM ITS RECEIPT OR ACCEPTANCE (OR FAILURE TO RECEIVE OR ACCEPT) ALTERNATIVE GAS UNDER THE TERMS HEREOF OR OTHERWISE.