National Fuel

December 29, 2014

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
P.O. Box 3265
North Office Building
Harrisburg, Pennsylvania 17105-3265

Re: National Fuel Gas Distribution Corporation
Delta Fund for Research and Development Projects Report

Dear Secretary Chiavetta;

Pursuant to R-00061493 Settlement paragraph 18 A.3 "Distribution will file with the Commission and serve upon other Parties on or before December 31 an annual report for the preceding twelve month period ended September 30, setting forth revenues for the Delta Fund for research and development projects and expenditures for such projects. In addition, Distribution will describe in the annual report projects that have been funded". The enclosed report is submitted under this settlement agreement.

Acknowledgement hereof is desired and duplicate letter is enclosed with a self-addressed, stamped envelope for that purpose.

Very truly yours,

Eric H. Meint
General Manager
Rates and Regulatory Affairs

Encl.

Cc: Office of Special Assistants
Office of Consumer Advocate
Office of Small Business Advocate

The provisions of R-00061493 Settlement paragraph 18 A.3 were adopted on November 30, 2006 and effective January 1, 2007. Paragraph 18 A.3 states:

"3. The Joint Petitioners agree to $526,466 to fund the Delta research and development program pursuant to the Statement of Scott E. Swarzfager No. 14. The deferral treatment and review process outlined in R-00049656 will continue. The company will not expend these dollars on additional customer outreach for enhanced energy efficiency.

Distribution will be permitted to record a regulatory asset or liability for differences between the annual rate allowance and annual expenditures. However, Distribution will not be permitted to retroactively recover in a future proceeding any expenditures in excess of the annual rate allowance and any deferred balance from the previous year's Delta funding. Distribution will provide for review of research projects as described in its testimony. In order to implement this Settlement, the Joint Petitioners request that the Commission's Final Order in this proceeding include the following language to allow Distribution to qualify for deferred accounting under SFAS 71:

> "National Fuel Gas Distribution Corporation's accounting policies conform to the Statement of Financial Accounting Standards No. 71 'Accounting for the Effect of Certain Type of Regulations' which are in accordance with the accounting requirements and ratemaking practices of regulatory authorities. The application of these accounting policies allows the Company to defer expenses and income on the balance sheet as regulatory assets and liabilities when it is probable that those expenses and income will be allowed in the rate-setting process in a period different from the period in which they would have been reflected in the income statement by an unregulated Company.
>
> "Because research and development projects often require a commitment over multiple years and because the expenditures for such projects may not match on an annual basis revenues for funding of research and development projects, deferred accounting is appropriate and is approved. The regulatory deferral treatment sought for the Research and Development expenditures and rate relief requested in the case are in accordance with SFAS No. 71.
>
> "The Company will manage the costs of the Research and Development expenditures to match revenues deferred pursuant to this Order to eliminate any differences between deferred costs and deferred revenues at the end of a five-year period commencing on the day after the R-00049656 Order was entered."

Distribution will file with the Commission and serve upon other Parties on or before December 31 an annual report for the preceding twelve month period ended September 30, setting

forth revenues for the Delta Fund for research and development projects and expenditures for such projects. In addition, Distribution will describe in the annual report projects that have been funded."

The provisions of R-00049656 Settlement paragraph 44 were adopted on March 23, 2005 and effective April 15, 2005. Paragraph 44 states:

"44. *Distribution's proposal to fund the Delta research and development program pursuant to the* Supplemental Statement of Ruth Friedrich-Alf No. 102 S2 is approved. Increased rates in this proceeding provide for recovery of $526,466 in Delta research funds. Distribution will be permitted to record a regulatory asset or liability for differences between the annual rate allowance and annual expenditures. However, Distribution will not be permitted to retroactively recover in a future proceeding any expenditures in excess of the annual rate allowance and any deferred balance from the previous year's Delta funding. Distribution will provide for review of research projects as described in its testimony. In order to implement this agreement, the Parties request that the Commission's Final Order in this proceeding include the following language to allow Distribution to qualify for deferred accounting under SFAS 71:

> 'National Fuel Gas Distribution Corporation's accounting policies conform to the Statement of Financial Accounting Standards No. 71 'Accounting for the Effect of Certain Type of Regulations' which are in accordance with the accounting requirements and ratemaking practices of regulatory authorities. The application of these accounting policies allows the Company to defer expenses and income on the balance sheet as regulatory assets and liabilities when it is probable that those expenses and income will be allowed in the rate-setting process in a period different from the period in which they would have been reflected in the income statement by an unregulated Company.
>
> 'Because research and development projects often require a commitment over multiple years and because the expenditures for such projects may not match on an annual basis revenues for funding of research and development projects, deferred accounting is appropriate and is approved. The regulatory deferral treatment sought for the Research and Development expenditures and rate relief requested in the case are in accordance with SFAS No. 71.
>
> 'The Company will manage the costs of the Research and Development expenditures to match revenues deferred pursuant to this Order to eliminate any differences between deferred costs and deferred revenues at the end of a five-year period commencing on the day after this Order is entered.'

Distribution will file with the Commission and serve upon other Parties on or before December 31 an annual report for the preceding twelve month period ended September 30, setting forth

revenues for the Delta Fund for research and development projects and expenditures for such projects. In addition, Distribution will describe in the annual report projects that have been funded."

As presented in R-00049656 Statement No. 102 (page 15);

"On an annual basis coming off of September 30, a reconciliation of revenues and expenditures with a description of projects funded will be on file on or before December 31 with the Office of Trial Staff, Office of Consumer Advocate and the office of Small Business Advocate. At the fifth reconciliation, Distribution will file a five year report."

As presented in R-00049656 Statement No. 102 S2 (page 7)

"Annual revenues .... will be deferred to offset the costs of the Research and Development expenditures (expenses) to both the Gas Technology Institute ("GTI") fund and local projects.

The Company will manage the cost of the Research and Development expenditures to match revenues deferred pursuant to this Order to eliminate any differences between deferred costs and deferred revenues at the end of a five-year period commencing on the day after this Order is entered."

It is under these guidelines and agreements that Distribution files the following report for the period ended September 30, 2014.

National Fuel Gas Distribution Corporation
Pennsylvania Division

Annual Filing of Delta Fund Revenues and Expenditures
For the period ended September 30, 2014

	Annual		Cumulative		
Year Ended	Expenditures	Revenues	Expenditures	Revenues	Balance
Sept. 2005	$92,300	$113,927	$92,300	$113,927	($21,627)
Sept. 2006	$376,800	$526,466	$469,100	$640,393	($171,293)
Sept. 2007	$596,800	$526,466	$1,065,900	$1,166,859	($100,959)
Sept. 2008	$526,493	$526,466	$1,592,393	$1,693,325	($100,932)
Sept. 2009	$376,368	$526,466	$1,968,761	$2,219,791	($251,030)
Sept. 2010	$455,911	$526,466	$2,424,672	$2,746,257	($321,585)
Sept. 2011	$721,800	$526,466	$3,146,472	$3,272,723	($126,251)
Sept. 2012	$280,300	$526,466	$3,426,772	$3,799,189	($372,417)
Sept. 2013	$626,800	$526,466	$4,053,572	$4,325,655	($272,083)
Sept. 2014	$278,891	$526,466	$4,332,463	$4,852,121	($519,658)

Note 1: Rates were effective April 15, 2005 therefore the report ended September 30, 2005 does not represent a 12 month period of revenue collection.

DESCRIPTION OF ACTUAL EXPENDITURES - PERIOD ENDED SEPTEMBER 2014

GTI Utilization Technology Development Program

$92,300 was submitted to Utilization Technology Development, NFP (UTD) for the April 1, 2014 through March 31, 2015 dues. $96,076 has been allocated to specific projects as listed below.

Payments, Fees, Credits, Carryover

Payments to UTD	$92,300
Administration Fees	$9,230
Carryover of Unallocated Funds from 2013	$95,532
Funds Available for Allocation	**$178,602**

Allocations to Projects

Residential/Commercial Space Conditioning	
(1.10.J) Low NOx Residential Furnace and next phase	$1,107
(1.11.M) Whole House Residential Retrofit Technologies Evaluation (Building America) Phase 3	$870
(1.11.M) Whole House Residential Retrofit Technologies Evaluation (Building America) Phase 4	$2,583
(1.12.U) Cold Climate Performance Evaluation of NextAire™ Gas Engine-driven Heat Pump	$4,838

(1.13.D) Codes and Standards for Advanced Gas Technologies	$384
(1.13.D) Codes and Standards for Advanced Gas Technologies Phase 2	$1,476
(1.13.I) Gas Appliances in Tight Houses (Phase 2)	$1,845
(1.13.L) Validation of mCHP Test Standard ASHRAE SPC204 Phase 2	$3,690
(1.14.E) Heating System Competitive Performance	$2,583
(1.14.G) Thermally Driven Ground Source Heat Pump	$5,535
(1.14.I) Cold Climate Field Demonstration of the NextAire GHP	$1,845
Residential/Commercial Water Heating	
(1.9.C) Low Cost Condensing WH Phase 2	$3,775
(1.9.F) Commercial Hybrid Gas-Solar Water Heating System Demonstrations	$294
(1.12.Q) Unplugged Energy Star Water Heater Phase 2	$4,842
(1.14.K) Advanced Systems for Self Powered Water Heating	$5,535
(1.14.L) Impact Evaluation of the New Federal Standard on Gas Water Heating	$2,583
Commercial Food Service	
(1.13.B) CFS Tools and Calculators	$565
(1.13.B) CFS Tools and Calculators Phase 2	$1,085
(1.14.A) Next Generation CFS Burners	$1,845
(1.14.C) Next Generation Low Oil Volume Fryer	$2,583
(1.14.D) Conveyor Broiler Improvements	$2,583
Industrial Solutions	
(2.10.D) 5 ppm NOx Burners	$4,651
(2.11.P) Waste Heat Recovery from Corrosive Industrial Exhaust Gases	$716
(2.12.U) Gas Quality Sensor (GQS) for Natural Gas and Renewable Gas Fueled Engines	$725
(2.13.F) Gas-Fired Baking Oven Performance Improvement	$698
(2.14.A) High-Efficiency Gas Fired Rotary Dryer with Heat Pump	$9,225
(2.14.B) Low Cost Low NOx Sensor for Industrial Applications	$3,690
(2.14.C) Novel Technology for Liquid Fuel Production from Natural Gas	$1,845
(2.14.D) HeatSponge Laboratory Evaluation	$,1845
(2.14.O) Field Validation of Gas Quality Sensor for Natural Gas	$1,107
Transportation	
(2.12.B) Ultimate CNG FuelMule Mobile Fueling Vehicle Phase 2	$65
(2.12.E) NGV Fueling Appliance Prototype Testing and Evaluations Phase 2	$784
(2.12.T) *Free Piston Linear Motor Compressor Phase 2*	$4,624
(2.13.G) CWI 6.7 liter Med Duty Engine Development	$861
(2.14.F) Free Piston Linear Motor Compressor Scale Up	$3,690
(2.14.H) CSA NGV5.1 NGV Residential Fueling Appliance Standards	$995

Development	
(2.14.I) CNG Fuel Station Safety, Performance, and Best Practices *Audit Kit*	$3,690
(2.14.K) CNG Composition Impacts on New Generation Engine and Fuel Delivery Systems	$3,690
Combined Cooling Heating & Power	
(2.12.F) Reliability Assessment of Natural Gas vs. Diesel for Standby Generation Phase 2	$1,054
Other	
(1.10.A) Web Program Upkeep	$231
(1.10.W) Development of an End Use New Technology Roadmap	$231
Refunds	
(2.12.C) Vertical Well CNG Storage Investigation - REFUND	($775)
Miscellaneous Refunds and Adjustments - REFUND	($10)
Funds Allocated to Projects	**$96,076**
Unallocated Funds	$82,526
Funds Available for Allocation	$178,602

GTI Operations Technology Development Program

$184,500 was submitted to Operations Technology Development, NFP (OTD) for the 2014 membership fee. $189,681 has been allocated to specific projects as listed below.

Payments, Fees, Carryover	
Payments to OTD	$184,500
Administration Fees	$13,837
Carryover of Unallocated Funds from 2013	$39,906
Funds Available for Allocation	**$210,569**
Allocations to Projects	
(1) Pipe and Leak Location	
1.11.c Low-Cost MEMS Methane Sensor Platform Phase 1	$3,157
1.13.a PHMSA Integration of Acoustic and GPR Technologies for HDD Operations add (PHMSA)	$1,701
1.14.d Field Measurement of Leak Flow Rate	$3,690
(2) Pipe Materials, Repair, and Rehabilitation	

2.10.b.2 In-Service Field Evaluation of Polyurea Coating Systems – Phase 2	$3,444
2.12.a Integrated Expert Monitoring and Training System for Butt Fusion	$1,476
2.14.a Composite Repair Wrap for Polyethylene (PE) Systems	$3,690
2.14.e Guidelines/Best Practices for Scraping PE Pipe and Fittings	$5,535
(3) Excavation and Site Restoration	$0
(4) Pipeline Integrity Management and Automation	
4.12.d Continuous Threat Identification Program	$5,535
4.13.a DIMP Consequence Model	$3,100
(5) Operations Infrastructure Support	
5.07.p (GTI) GPS Consortium	$5,535
5.08.d.3 Tool for External Classification of Pipe Contents, Phase 3	$7,380
5.08.e.2ab Enhanced Material Tracking and Traceability-Development of Standardized Protocols/Identifiers for Meters, Regulators, and Transmission Pipelines, Phase 2	$3,690
5.09.f CP Monitor Prototype Modification and Field Trials Phase 2	$946
5.09.h North American Manufacturer Outreach	$1,845
5.10.d.2 Remote Field QA/QC Phase 2	$7,380
5.11.e.3 Intelligent Utility System - Phase 3: Automated Component Validation Software	$3,690
5.11.m Intelligent Utility Installation Process (Asset Tracking)	$2,309
5.11.t Essential Data Capture for PE Fusion Operations	$3,690
5.12.b.2 Development of a Portable Flash Fire Suppression System (PFFSS) Phase 2	$3,690
5.13.f Low Cost Collision Avoidance System	$1,538
5.14.a RFID Testing Program	$3,690
5.14.c Improving Cybersecurity for LDCs-Needs Identification Workshop	$1,845
5.14.d.2a Tracking and Treaceability for Transmission-Phase 2a Standards for MTR and Coating Reports	$3,690
5.14.d.2b Tracking and Treaceability for Transmission-Phase 2b Data Collection Technology	$5,535
5.14.f Battery and Electric Powered Tool Evaluation Phase 1	$7,380
5.14.n Construction Compliance Monitoring System	$5,535
5.14.p Pipe Insertion Technologies - Develop Devices to Use with Jameson Directional Insertion Tool	$3,690

5.14.t Methods to Detect Inserted Plastic in Steel Mains	$2,324
5.14.x Atmospheric Corrosion / Leak Survey Considerations	$3,690
(6) Other	
6.08.a (GTI) Carbon Management Information Center	$9,225
6.a (GTI) SMP	$36,900
(7) Environmental, Renewables and Gas Quality	
7.10.b.2 Odor Fade Phase 2 (GTI)	$5,535
7.10.c.3 Improving Methane Emission Estimates Phase III - Cast Iron and Unprotected Steel Pipes	$14,713
7.10.c.4 Improving Methane Emission Estimates for Natural Gas Distribution Companies Phase IV	$3,690
7.11.a Gas Quality Resource Center	$7,380
7.14.a Next Generation Water Clean-up Technology Phase 1	$1,845
Refunds	
1.13.a PHMSA Integration of Acoustic and GPR Technologies for HDD Operations add (PHMSA) (REFUND)	($2)
5.08.d Tool for External Classification of Pipe Contents (REFUND)	($5)
Funds Allocated to Projects	**$189,681**
Unallocated Funds	$20,888
Funds Available for Allocation	$210,569

Local Opportunity Projects

$2,091 was expended for Local Opportunity Projects in 2014.

SUMMARY OF EXPENDITURES - 2014

Utilization Technology Development Program	$92,300
Operations Technology Development Program	$184,500
Local Opportunity Projects	$2,091
Total Pennsylvania Delta Funds Program Expenditures	$278,891

PROJECTED EXPENDITURES - PERIOD ENDING SEPTEMBER 2015

Expenditures for National Fuel Gas Distribution Corporation's Pennsylvania Delta Funds RD&D Program are projected to be $526,800 in 2015 consisting of the following charges:

1. **Utilization Technology Development** (UTD) membership fees of approximately $92,300. Specific projects to be determined.

2. **Operations Technology Development** (OTD) membership fees of approximately $184,500. Specific projects to be determined.

3. **Local Opportunity Projects** spending estimate of $250,000, primarily targeted at further development initiatives for CNG applications. Funds not used for the development of qualified local technology projects in National Fuel territory will be allocated to the national Gas Technology Institute programs above.

STATUS UPDATE OF LOCAL OPPORTUNITY PROJECTS- 2014

Funding of gas industry research through the Gas Technology Institute (GTI), as an example, returns many benefits, including insuring continued improvement and availability of energy-efficient, low emissions and cost-effective gas technologies; while leveraging the funding resources of gas utilities across North America. The Local Opportunity Projects portion of this program intends to identify projects for direct local support offering equal, or better, benefits than GTI. This is challenging but National Fuel endeavors to identify and develop these opportunities. Funds available through this portion of the program, beyond the minimum commitments to GTI, may be used for qualified local projects. Funds not used locally are sent to GTI to be allocated to suitable projects, as shown in the previous supported project listings.

Updates on four Local Opportunity Projects are provided.

1. **Clarion University Microturbine**. This combined heat and power hybrid system consisting of a natural gas microturbine generator and a solar array produces electricity to meet the partial needs of the new science building at Clarion University. Heat produced by operation of the microturbine is used to supplement building heat. The system has been in operation since August 2010. Subsequent improvements to heat recovery from the microturbine, along with more effective thermal utilization, have been made by the University beyond the scope of the National Fuel project. National Fuel understands that the system continues to operate satisfactorily. No program funds were used this year nor is further RD&D work anticipated. The project has been closed.

2. **Natural Gas Powdered Metals Sintering Furnace**. Computer modeling and performance simulation of natural gas powdered metals (P/M) sintering furnace operation has been completed. This modeling was created and performed by Pennsylvania State University-Erie using resources of this program to induce a sintering furnace manufacturer in St. Marys, PA to develop an improved natural gas sintering furnace design. An improved and competitive gas furnace with higher efficiencies and lower emissions could provide Pennsylvania P/M shops with opportunities to further reduce their operating costs using lower cost natural gas over the predominance of electricity. National Fuel enlisted an innovative industrial combustion burner manufacturer located in North East, Pennsylvania to consult with the furnace manufacturer to design the burner system for development of a prototype furnace for field testing. The parties are working together to resolve hardware issues, and develop an acceptable and competitive design. Initial burner prototype testing at an additional cost of $10,000 was completed successfully in 2014. Follow-up discussions and potential furnace prototype development will determine any additional necessary RD&D support.

3. **Advanced Heat Recovery System (AHRS)**. This project was an initiative by National Fuel begun in 2012 working with the Gas Technology Institute (GTI). It was an attempt to identify sites for a new energy-efficient Transport Membrane Condenser (TMC) technology resulting from UTD development. The TMC is a spin-off from the Federally-funded Super Boiler project to recover sensible and latent waste heat, and water, from boiler or other industrial process exhausts. It had

been commercially introduced by Cannon Boiler Works of New Kensington, PA as the Ultramizer. National Fuel has not been successful in finding any suitable host sites to this point. Cannon has indicated that low prices and abundant supplies of natural gas have negatively impacted their target markets. No Local Opportunity program funds have been used either in this, or prior years for the technology. National Fuel is not currently actively seeking host sites, but will continue to be alert for potential opportunities for this technology in its service area.

4. **Public Access Compressed Natural Gas Fueling Station at Brookville, PA**. In early 2013, a public access compressed natural gas (CNG) fueling station along I-80 in Brookville, PA was opened by a local Pennsylvania developer with the assistance of this RD&D program. Upon inducing the developer to locate his new station in this high visibility high traffic location, and provide his own financing, assistance was provided by this program to address additional costs to open access to CNG beyond private fleets. The intent was to make it as easy as possible to serve a greater population of public vehicles, allowing them to enjoy the benefits of lower cost CNG fuel which is indigenous to PA, or is domestically sourced, with lower emissions. In addition to the technical issues, there were numerous regulatory, tax, legal, credit card, commercial and other business challenges which were addressed. The existence of this station is providing awareness and interest among the public on the benefits of CNG vehicle fuel and providing the impetus for growth. Since the opening of this station, a number of other stations have been actively developed along the I-80 corridor, as well as in other locations. The education center incorporated into the station building has been actively utilized by National Fuel, the station owner, the PA DEP and others to further educate prospective fleet operators on the advantages of natural gas as a vehicular fuel and promote projects. The station appears to be both a technical and commercial success. The program support for this project totals $252,000. Future projects under consideration for separate project funding related to stations owned and operated by this developer include the incorporation of microturbines to enhance reliability and lower operating costs at this and other public commercial CNG fueling infrastructure projects. The developer also anticipates building on the experience gained at the initial project site to compete for the recently announced P3 program to install up to 37 public CNG fueling sites across the Commonwealth.

National Fuel intends to continue efforts to identify other beneficial Local Opportunity Projects for development which may provide direct benefit to our Pennsylvania consumers, businesses, and industries.

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