Louisville Metro Air Pollution Control District
701 West Ormsby Avenue, Suite 303
Louisville, Kentucky 40203-3137

July 12, 2016

Title V Statement of Basis

Company: Texas Gas Transmission, LLC

Plant Location: 10327 Gaslight Way, Louisville, Kentucky 40299-2587

Date Application Received: 26 November 2014 **Date Admin Complete:** 5 December 2014

Date of Draft Permit: 5/27/2016 **Date of Proposed Permit:** 5/27/2016

District Engineer: Rick Williams **Permit No:** O-0223-16-V

Plant ID: 0223 **SIC Code:** 4922 **NAICS**: 486210

Introduction:

This permit will be issued pursuant to: (1) Regulation 2.16, (2) Title 40 of the Code of Federal Regulations, Part 70, and (3) Title V of the Clean Air Act Amendments of 1990. Its purpose is to identify and consolidate existing District and Federal air requirements and to provide methods of determining continued compliance with these requirements.

Jefferson County is classified as an attainment area for lead (Pb), nitrogen dioxide (NO2), carbon monoxide (CO), 1 hr and 8 hr ozone (O3), and particulate matter less than 10 microns (PM10); and is a non-attainment area for the 1997 standard for particulate matter less than 2.5 microns ($PM_{2.5}$), unclassifiable for the 2012 standard for particulate matter less than 2.5 microns ($PM_{2.5}$) and partial non-attainment area for sulfur dioxide (SO_2).

Application Type/Permit Activity:

[ ] Initial Issuance
[ ] Permit Revision
  [ ] Administrative
  [ ] Minor
  [ ] Significant
[X] Permit Renewal

Compliance Summary:

[X] Compliance certification signed
[ ] Source is out of compliance
[ ] Compliance schedule included
[X] Source is operating in compliance

I. Source Information

1. Product Description:

The company recompresses pipeline natural gas to maintain pipeline pressure.

2. Process Description:

The Texas Gas Transmission, LLC, Jeffersontown, KY transmission station consists of nine natural gas fueled, 2-stroke reciprocating engines and one natural gas-fired turbine, all used to drive compressors for pipeline natural gas. Other equipment includes one natural gas-fired 4-stroke engine driving a standby electrical generator, one natural gas-fired 4-stroke engine driving an auxiliary air compressor, two parts washers, and a number of insignificant activities, all related to the primary task on pipeline natural gas re-pressurization and transmission.

3. Site Determination:

There are no other facilities that are contiguous or adjacent and under common control.

4. Emission Unit Summary:

Emission Unit	Equipment Description
U1	Six compressor engines, Cooper-Bessemer natural gas-fueled, 2-stroke, 1,500 bhp. Model GMW-6TFC (after modification.)
U2	Three compressor engines, Cooper-Bessemer natural gas-fueled, 2-stroke, 1,500 bhp. Model GMWA-6C (after modification.)
U20	Standby generator engine, Waukesha natural gas-fueled, 4-stroke, 800 bhp. Model L36GL (VGF).
U21	Compressor engine, Solar natural gas-fired turbine, 14,491 bhp. Model Mars 100-T-15000S.
U25	Two cold solvent parts cleaners, 15 and 225 gallon capacities
U26	Auxiliary air compressor engine: Wisconsin, natural gas-fueled, 4-cylinder, 4-stroke reciprocating, 35 bhp. Model W41770.
U27	Two natural gas-fired boilers: • "Turbine" boiler, LAARS, model PH1670; 1.67 MMBtu/hr • "Recip" boiler, Peerless, model 211A-12-SP-1-LHL; 2.31 MMBtu/hr

5. Fugitive Sources:

There are minor fugitive emissions of VOC from the equipment leaks in the natural gas piping. However, there are no regulatory limits on these emissions, nor is there any regulatory basis to consider them in the Title V permit.

6. Permit Revisions:

Permit Number	Public Notice Date	Issue Date	Type	Pages	Description
92-97-TV	3/12/2000	01/23/2001	Initial	Entire Permit	Initial Permit Issuance
92-97-TV (R1)	3/12/2000	01/23/2001	Administrative	Cover page	Corrected expiration date
92-97-TV (R2)	2/05/2010	04/26/2010	Renewal Administrative	Entire permit Pages: 18 Pages: 9, 17, 18	5 year renewal, Amended NO_x RACT Plan, equipment modifications, new RO Insignificant activities paragraphs Revised pollutant columns
O-0223-16-V	TBD	TBD	Renewal	Entire permit	5 year renewal

7. Emission Summary:

Pollutant	Actual 2013 Emissions (tons)	Major Source Trigger (based on PTE)
CO	18.1	Yes
NOx	7.9	Yes
SO_2	0.12	No
PM	1.5	No
PM_{10}	1.2	No
$PM_{2.5}$	1.2	No
VOC	4.8	No
Single HAP	1.7	Yes
Total HAPs	2.4	Yes

8. Applicable Requirements:

[ ] PSD [X] 40 CFR 60 [X] SIP [X] 40 CFR 63
[X] NSR [ ] 40 CFR 61 [X] District-Origin [ ] Other

9. Future MACT Requirements:
40 CFR 63, subpart YYYY contains certain requirements for the control of hazardous air pollutant emissions from natural gas-fired turbines, however the USEPA issued a stay for standards applicable to natural gas-fired turbines. At this time we do not know when these rules are likely to become effective. If this happens during the life of this permit, the company will be subject to these requirements at that time.

10. Referenced Federal Regulations in Permit:
40 CFR Part 60 Subpart A - *General Provisions*
40 CFR Part 60 Subpart GG - *Standards of Performance for Stationary Gas Turbines*
40 CFR Part 63 Subpart A - *General Provisions*
40 CFR Part 63 Subpart YYYY - *National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines*
40 CFR Part 63 Subpart ZZZZ - *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*
40 CFR Part 63, Subpart DDDDD - *National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters*

II. Regulatory Analysis

1. Acid Rain Requirements:
The source is not subject to the Acid Rain Program.

2. Stratospheric Ozone Protection Requirements:
Title VI of the CAAA regulates ozone depleting substances and requires a phase-out of their use. This rule applies to any facility that manufactures, sells, distributes, or otherwise uses any of the listed chemicals. This source does not manufacture, sell, or distribute any of the listed chemicals. The source's use of listed chemicals is that in fire extinguishers, chillers, air conditioners and other HVAC equipment.

3. Prevention of Accidental Releases 112(r):
The source does not manufacture, process, use, store, or otherwise handle one or more of the regulated substances listed in 40 CFR Part 68, Subpart F, and District Regulation 5.15, *Chemical Accident Prevention Provisions*, in a quantity in excess of the corresponding specified threshold amount. If the source becomes subject to 40 CFR 68 and Regulation 5.15, the source shall comply with the Risk Management Program and Regulation 5.15 and submit a Risk Management Plan to:

RMP Reporting Center
P.O. Box 3346
Merrifield, VA 22116-3346

4. 40 CFR Part 64 Applicability Determination:
Texas Gas Transmission, LLC is not subject to 40 CFR Part 64 - *Compliance Assurance Monitoring for Major Stationary Sources*, since each emission point has no control device, other than permanently built-in engine designs or modifications, for NOx or CO

emissions for which the company is a major source and each emission point is not a major source for NOx and CO emissions.

5. Basis of Regulation Applicability

a. Plant-wide

i. **NOx RACT -** Texas Gas Transmission, LLC is a major source for NOx emissions. Regulation 2.16 - *Title V Operating Permits* establishes requirements for major sources.

The source is subject to the NOx emission limits, based on the amount of NOx emissions in the exhaust gases from the various engines at the facility, as listed below.

Engines	Limit	Product
Natural gas compressor stationary reciprocating engines #1-9	3.0 g/bhp•hr	NOx
Compressor turbine T-2	37.5 ppmvd	NOx
Standby generator stationary reciprocating engines	2.6 g/bhp•hr, 1,500 hr/12 consecutive months	NOx
Auxiliary air compressor stationary reciprocating engines	2.21 lb/MMBtu 1,000 hr/12 consecutive months	NOx

ii. **STAR -** Regulations 5.01, 5.21, and 5.23 (STAR Program) establish requirements for environmental acceptability of toxic air contaminants (TACs) and the requirement to comply with all applicable emission standards. However. Regulation 5.21, section 2.7 specifically states that all TAC emissions from the combustion of natural gas are, by definition, *de minimis*.

Nonetheless, Texas Gas submitted a dispersion model for formaldehyde emissions, the only TAC that would be emitted in amounts greater that *de minimis* concentrations without the natural-gas exception. This model showed that these formaldehyde emissions achieved the environmental acceptability goals set by APCD.

b. Emission Units

Emission Unit U1 – Compressor engines #1-6

Emission Point	Description	Applicable Regulations	Control ID
E1	One Cooper-Bessemer natural gas fueled, 1,500 bhp, 2-stroke, lean burn engine, (installed March 1950)	5.01, 5.02, 5.21, 6.42 (footnote [1])	Footnote [2]
E2	Same as E1		
E3	Same as E1		
E4	Same as E1		
E5	Same as E1, (installed January 1953)		
E6	Same as E1, (installed January 1953)		

Emission Unit U2 – Compressor engines #7-9

Emission Point	Description	Applicable Regulation	Control ID
E7	One Cooper-Bessemer natural gas fueled, 1,500 bhp, 2-stroke, lean burn engine, (installed December 1956)	5.01, 5.02, 5.11, 6.42, (footnote [1])	Footnote [2]
E8	Same as E7, (installed October 1962)		
E9	Same as E7, (installed September 1963)		

[1] Federal regulation 40 CFR 63, subpart ZZZZ - *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* is not applicable to these engines because they meet the exemption definition in §63.6590(b)(3)(i).

[2] A Lean Emission Combustion (LEC) package was added to engines E6-E9 in 2001 and engines E1-E5 in 2002. This package consisted of permanent modifications to the engines including a turbocharger, scavenging air cooler, high-energy ignition system, power cylinder head replacement, fuel-system modifications, air system piping, natural gas piping, intake and exhaust silencers, and larger exhaust stacks to accommodate a larger volume of exhaust gasses.

Emission Unit U20 – Emergency generator

Emission Point	Description	Applicable Regulation	Control ID
E21	Waukesha 800 bhp, natural gas-fueled, 4-stroke engine, model L36GL (VGF), (installed November 1997)	5.01, 5.02, 5.11, 6.42	Footnote [3]

Emission Unit U21 – Compressor turbine T2

Emission Point	Description	Applicable Regulation	Control ID
E22	Solar brand 14,491 bhp, (10.8MW) natural gas-fueled stationary turbine engine, model Mars 100-T-15000S, (installed July 2005)	5.01, 5.02, 5.11, 6.42, 40 CFR 60 Subpart A, 40 CFR 60 Subpart GG, 40 CFR 63 Subpart A, 40 CFR 63, Subpart YYYY	Footnote [4]

Emission Unit U25 – Cold solvent parts cleaner

Emission Point	Description	Applicable Regulation	Control ID
E26	Graymills, model PL36-A, nonhalogenated cold solvent parts cleaner, fifteen gallon capacity reservoir	6.18	N/A
E27	Custom made, nonhalogenated cold solvent parts cleaner, two hundred twenty-five gallon capacity reservoir	6.18	N/A

[3] This engine is equipped with NO_x emission equipment that limit NO_x emissions to less than 2.6 g/bhp-hr, per manufacturer's guarantee.

4 The natural gas fired stationary turbine manufactured by Solar is computer controlled and manually monitored to insure operation in $SoLoNO_x$ mode, which limits the emissions, when the turbine is operated at greater than 50 % capacity.

Emission Unit U26 – Auxiliary air compressor

Emission Point	Description	Applicable Regulation	Control ID
E28	Wisconsin, model W41770, Natural Gas-fired 4-cylinder, 4-stroke rich burn, reciprocating engine, rated at 35 bhp, 27 cubic inches per cylinder (Installed in 1993)	5.01, 5.21, 6.18, 40 CFR 63, subpart ZZZZ	N/A

Emission Unit U27 – Natural Gas fired boilers

Emission Point	Description	Applicable Regulation	Control ID
E29	"Turbine" boiler, to heat fuel gas for turbine compressor. Model PH1670 by LAARS; 1.67 MMBtu/hr (2005)	7.06, 40 CFR 63, Subpart DDDDD	N/A
E30	"Recip" boiler, to heat fuel gas for RICE engines, Model 211A-12-SP-I-LHL by Peerless; 2.31 MMBtu/hr	7.06, 40 CFR 63, Subpart DDDDD	N/A

c. Basis for Applicability

Applicable Regulation	Basis for Applicability
5.01	Applicable to any source emitting toxic air contaminants.
5.21	Defines *de minimis* emissions for emission of toxic air contaminants.
6.18	Applicable to all solvent-based metal-cleaning equipment.
6.42	Applicable to all major NOx-emitting facilities not subject to PSD regulation.
7.06	Applicable to all indirect heat exchangers with heat input capacity greater than one-million Btu per hour.
40 CFR 60, Subpart GG	Applicable to all stationary gas turbines with peak-load heat input greater than 10 MMBtu/hour.
40 CFR 63, Subpart YYYY	Applicable to stationary combustion turbines located at major HAP sources.
40 CFR 63, subpart ZZZZ	Applicable to stationary reciprocating internal combustion engines located at major HAP sources.
40 CFR 63, Subpart DDDDD	Applicable to industrial boilers located at major HAP sources.

d. Standards/Operating Limits

i. **Nitrogen Oxides**

(1) Emission Unit U1 and U2

The NOx emission standard for these emission points is based on the characteristics of the reciprocating engines that comprise these emission units and the Lean Emission Combustion packages that were added to engines E6-E9 in 2001and engines E1-E5 in 2002. The emission limits were developed for the NOx RACT Plan required by Regulation 6.42, Section 4.3.1.The original Plan was approved by the Air Pollution Control Board on November 11, 1999. The current version (Amendment 3) was approved on May 18, 2016.

(2) Emission Unit U20

The NOx emission standard for the sole emission point in this Emission Unit is based on the characteristics of the reciprocating engine described in this emission unit. The emission limits were developed for the revised NOx RACT..

(3) Emission Unit U21

The NOx emission standard for the sole emission point in this Emission Unit is based on the characteristics of the turbine engine that comprises this emission unit. The emission limits were developed for the NOx RACT Plan required by Regulation 6.42, Section 4.3.1. This turbine was first covered in Amendment 2 of the Plan, approved by the APC Board on June 17, 2009.

(4) Emission Unit U26

The NOx emission standard for the sole emission point in this Emission Unit is based on the characteristics of the reciprocating engine described in this emission unit and review of emission factors established in AP42 and manufacturer's data. The emission and operating hour limits from information supplied by the company in their renewal application. These limits have been incorporated in a revised NOx RACT Plan, as required by Regulation 6.42, Section 4.3.1. This engine has been considered an insignificant activity prior to this permit, and is covered in the NO_x RACT plan for the first time with the approval of Amendment 3, approved by the APC Board on May 18, 2016.

ii. **Toxic Air Contaminants**

Emission Units U1, U2, U20, U21, and U26

Toxic Air contaminants emitted from the combustion of natural gas are considered *de minimis* by regulation.
[Regulation 5.21, Section 2.7]

iii. **Hazardous Air Pollutants**

(1) Emission Units U1 and U2

These reciprocating engines are exempt from HAP emission standards under 40 CFR 63, Subpart ZZZZ because they meet the exemption definition in 40 CFR 63.6590(b)(3)(i).

Consequently, no HAP emission standards are listed in the permit.

(2) Emission Unit U20
This reciprocating engine is exempt from HAP emission standards under 40 CFR 63, Subpart ZZZZ because it meets the exemption definition in 40 CFR 63.6590(b)(3)(i). Consequently, no HAP emission standards are listed in the permit.

(3) Emission Unit U21
(a) The company was required to provide an initial notification for 40 CFR 63, Subpart YYYY. This notification was supplied to APCD on 12 October 2005.
(b) There are no other emission standards until final action to require compliance with 40 CFR 63, Subpart YYYY is published in the Federal Register.

(4) Emission Unit U26
Work practice standards for this emission unit are specified in the Federal regulation.
[40 CFR 63, Subpart ZZZZ,]

(5) Emission Unit U27
40 CFR 63 Subpart DDDDD presents the requirements for a required one-time energy assessment and regular (every 5 years) boiler tune-ups.

iv. Sulfur Dioxide

(1) Emission Unit U21
40 CFR 60, Subpart GG specifies SO_2 emission limits [40 CFR 60.333(a)] and maximum allowable sulfur content for stationary turbine fuels.

(2) Emission Unit U27
SO_2 emission rates for process boilers are defined in APCD Regulation 7.06. Specific emission rates are determined by a formula in the regulation and are based on the maximum heat-input rating of all boilers.

v. Volatile Organic Compounds

Emission Unit U 25
VOC emissions from, and work practices for, cold solvent parts washers are regulated by APCD Regulation 6.18.

vi. Particulate Matter

Emission Unit U27
The emission standard for the boilers that are part of this emission unit is based on the total rated heat input of 3.98 MMBtu/hr for all boilers at this, using the formula described in Regulation 7.06, section 4.1.3.

vii. Opacity

Emission Unit U27

APCD Regulation 7.06 defines the allowable opacity of the emissions from any stack used to exhaust the combustion products of a process boiler.

e. Monitoring and Recordkeeping

Regulation 2.16, Section 4.1.9 establishes general requirements for recordkeeping and monitoring of air-pollution producing equipment and related control equipment. Requirements that are common to all records include "monitoring data and support information shall be retained for five years from the date of the monitoring sample, measurement, report, or application." Support information includes all calibration and maintenance records and all original strip chart recordings or computer data and log files for continuous monitoring instrumentation, and copies of all other records required by the permit. These records shall include the following pollutant-specific data:

i. Nitrogen Oxides

Emission UnitsU1, U2, U20, U21, and U26

The revised NOx RACT plan establishes requirements for regular testing of the engines which are part of these emission units, and reporting of these test results. The current version of this RACT Plan is dated May 18, 2016, and is included as an attachment to the permit.

ii. Toxic Air Contaminants

Emission Units U1, U2, U20, U21, and U26

These emission units are reciprocating-internal-combustion or turbine-combustion engines fueled by natural gas. Emissions from natural gas are assumed by regulation (5.21, section 2.7) to be *de minimis*. There are no monitoring or reporting requirements for *de minimis* emissions.

iii. Hazardous Air Pollutants

(1) Emission Units U1, U2, U20

The engines that are considered in these emission units are exempt from the HAP emission requirements of 40 CFR 63, subpart ZZZZ because they meet the exemption provision established in 40 CFR 63.6590(b)(3)(i). Therefore, there are no monitoring or reporting requirements for these pollutants.

(2) Emission Unit U21

The company was required to submit an Initial Notification, which was done on October 12, 2005, within the time-frame set forth in 40 CFR 63, Subpart YYYY. All other provisions of this regulation have been stayed for turbine engines of this class.

(3) Emission Unit U26

The company is required to retain records deemed necessary by APCD to provide assurance that the maintenance and inspection procedures required by the permit are being followed. [Regulation 2.16, Section 4.1.9]

(4) Emission Unit U27
40 CFR 63, subpart DDDDD establishes requirements for an initial energy assessment and regular boiler tune-ups.

iv. Sulfur Dioxide

Emission Unit U21
40 CFR 60, Subpart GG provides several options for the company to provide proof that the quality of the natural gas burned in this turbine is such that the SO_2 emission standard will, with reasonable assurance, be met.

v. Volatile Organic Compounds

Emission Unit U25
The company is required to retain records deemed necessary by APCD to provide assurance that the vapor pressure limits established in the permit are being met at all times. This documentation is defined in Regulation 6.18, Section 4.4.2.

vi. Particulate Matter

Emission Unit U27
Calculations show that natural-gas-fired boilers will inherently meet the PM emission standard of Regulation 7.06. Consequently, no monitoring or record-keeping is required for this pollutant.

vii. Opacity

Emission Unit U27
APCD has determined that natural-gas-fired boilers should inherently meet the opacity standard of Regulation 7.06. Consequently, no monitoring or record-keeping is required for this pollutant.

f. Reporting

District Regulation 2.16, Section 4.1.9.3 requires semi-annual reporting of the emission data indicated in the permit, and any deviations from the permit requirements.
Other specific reporting required by other regulations are:

i. U21 - Hazardous Air Pollutants

HAP emissions from this source are governed by Federal regulations. Submission of copies of the required energy assessment and periodic tune-ups is set forth in 40 CFR 63.7550.

g. Testing

APCD Regulation 6.42, Section 4.3 requires the submission of a NOx RACT Plan for certain NOx-emitting sources. Emission units U1, U2, and U20 have

specific testing requirements in the NOx RACT Plan (Amendment 3) that was approved by the APCD Board on May 18, 2016.

III. Other Requirements

1. Temporary Sources:
The source did not request to operate any temporary facilities.

2. Short Term Activities:
The source did not report any short-term activities.

3. Emissions Trading:
N/A

4. Operational Flexibility:
The source did not request any operational flexibility for the emission point.

5. Compliance History:
The source signed and submitted a Title V compliance certification with their permit renewal application. There are no outstanding compliance issues.

6. Insignificant Activities:

a. Insignificant Activities are only those activities or processes falling into the general categories defined in District Regulation 1.02, Section 1.38, and not associated with a specific operation or process for which there is a specific regulation. Equipment associated with a specific operation or process (Emission Unit) shall be listed with the specific process even though there may be no applicable requirements. Information contained in the permit and permit summary shall clearly indicate that those items identified with negligible emissions have no applicable requirements.

b. Activities identified in District Regulation 1.02, Section 1.38, may not require a permit and may be insignificant with regard to application disclosure requirements but may still have generally applicable requirements that continue to apply to the source.

c. For all insignificant activities, the company shall maintain sufficient records to calculate the emissions and report those emissions in the semi-annual compliance reports and the annual emissions inventory report.

d. The Insignificant Activities table is correct as of the date the permit was proposed for review by the USEPA, Region 4. The company shall submit an updated list of insignificant activities annually with the Title V compliance certification pursuant to District Regulation 2.16, section 4.3.5.3.6.

e. In lieu of recording annual throughputs for each Insignificant Activity, the owner or operator may elect to report the potential-to-emit quantity as the annual emission for each piece of equipment, since the emissions from the source's Insignificant Activities are minor.

f. The activities determined to be Insignificant Activities at this facility are:

Equipment	**Quantity**	**Potential To Emit** (tons/yr)	**Basis for Exemption**
Brazing, soldering or welding	10	PM/PM_{10} 0.006	Regulation 1.02, Appendix 3.4
Emergency relief vents	< 100	Note	Regulation 1.02, Appendix 3.10
Gasoline storage tank < 250 gal (TK09, 220 gal, installed 1979)	1	VOC 0.1454	Regulation 1.02, Appendix 3.23
Pipeline distillate storage tank, (TK15, 4,400 gal, installed 1996)	1	VOC 0.0282	Regulation 1.02, Appendix 3.9.2
Combustion sources < 1 MMbtu/hr Heaters for offices, break rooms and warehouse, etc.	20	CO 1.84 NOx 2.52	Regulation 1.02, Appendix 1.1
Fugitive emissions from pipeline fittings	< 1000	VOC 0.77 HAP 0.013	Regulation 1.02, section 1.38.1.2

Note: Emissions from emergency relief valve releases shall be treated as an Upset Condition and notification of the condition and the resulting emissions shall be reported to District as required by Regulation 1.07 and in the annual emissions inventory.