# BACKGROUND

Texas Eastern Transmission, L.P. (Texas Eastern) transports natural gas via underground pipelines from the Gulf Coast region of the United States to the Northeast and mid-Atlantic United States. The gas must be compressed at several compressor stations along the pipeline to ensure efficient transportation and delivery to customers at serviceable pressures. Texas Eastern owns and operates a natural gas compressor station (Accident Compressor Station) located in Accident, Garrett County, Maryland. The primary SIC code for the Accident Compressor Station is 4922 (Natural Gas Transmission).

The Permittee employs two 5.500 HP compressors, each driven by natural gas-fired reciprocating stationary internal combustion engines, to pump natural gas from the transmission pipeline during the summer months into an adjacent underground storage field. Natural gas is pumped from the pipeline into the storage field and withdrawn for redelivery to the transmission pipeline when needed, generally during the winter months. Natural gas from the storage field is run though a set of packed tower absorbers (molecular sieves) containing absorbing beads for removing water. Dehydrated gas then flows into the transmission pipeline. The molecular sieve desiccant is regenerated periodically. Liquids removed during the regeneration cycle are separated with the organic layer (pipeline liquids) being sent to storage until transported off-site as a product. The water layer is sent to storage until transported off-site as waste. There are four (4) water bath heaters rated at 12 to 15 million Btu/hr and two (2) salt bath heaters rated at 3 million Btu/hr. The equipment is used in the operations ancillary to reconditioning the gas prior to reinjection into the transmission pipeline. During periods of below-freezing weather conditions, methanol is used as antifreeze and stored in methanol tanks. Ambitrol (propylene glycol/water solution) is also used as an antifreeze agent and is stored in one ambitrol tank. Waste methanol and water generated from the dehydration process is stored in wastewater/methanol tanks. The methanol, ambitrol, and wastewater/methanol tanks are listed under the Insignificant Activities section of the fact sheet and permit.

Table 1 lists the source's recent actual emissions based on the annual Emissions Certification reports required by the Department.

The major source threshold for triggering Title V requirements in Garrett County is 50 tons per year for VOC, 100 tons for NOx and 100 tons per year for any other criteria pollutant and 10 tons per year for a single Hazardous Air Pollutant (HAP) or 25 tons per year for total HAPS. Texas Eastern is a **potential** major source of NOx, VOCs and HAPs and is, therefore, subject to Title V permitting requirements.

The most recent Title V renewal permit was issued to Texas Eastern on August 1, 2011. The Part 70 permit renewal application was received by the Department on February 26, 2015. The Company person signing the application was Mr. Tom V. Wooden, Vice President- U.S. Field Operations. An administrative completeness review was conducted

and the application was deemed to be administratively complete. Supplemental information regarding the Title V renewal was submitted by Texas Eastern on April 14, 2016, July 26, 2016, August 31, 2016, and December 16, 2016.

Calendar	NOx	CO	VOC	SO <sub>2</sub>	PM	HAP
Year	(TPY)	(TPY)	(TPY)	(TPY)	(TPY)	(TPY)
2015	35.6	9.8	55.9	0.11	5.5	8.2
2014	64.0	20.2	49.0	0.14	7.9	13.3
2013	38.0	17.7	43.3	0.09	5.7	10.9
2012	18.2	12.2	40.1	0.10	4.6	8.9
2011	25.3	9.4	39.0	0.14	6.1	11.0

# Table 1. Actual Emissions (includes both stack and fugitive)

# **EMISSIONS UNIT IDENTIFICATION**

Texas Eastern has identified the emission units shown in Table 2 as being subject to the Title V permitting requirements and having applicable requirements.

Table 3 shows the Facility's potential emissions based on the Title V renewal application for each emission unit.

There are also VOC and Greenhouse Gas (GHG) emissions from miscellaneous releases of natural gas and leaks from the following four categories: Facility Gas Releases, Facility Pipeline Component Fugitives, Storage Field Gas Releases, and Storage Field Pipeline Component Fugitives. Fugitive emissions consist of leaks from pipeline components and gas releases from blowdowns and purges. Permanently located in compressor station yards are a set of blowdown devices and miscellaneous process vents. Various sources in the station yard are manifolded to these devices that occasionally release gas as part of the normal operating procedure and for safety and maintenance reasons. These sources include but are not limited to compressor case vents, valve operator vents and pig launcher and receiver vents. The blowdown devices receive gas from these sources prior to being released to the atmosphere and remove free liquids from the stream. Liquids are not retained in these devices; rather they are piped directly to a pipeline condensate tank located at the station site. The blowdown devices vent directly to the atmosphere. In the event of an emergency shutdown, gas releases directly to the atmosphere instead of being routed to the blowdown devices. Purges include air purges and pipeline liquids purges, which use natural gas as the purging volume. Leaks from piping components consist of leaks from valves, connectors, flanges, open ended lines, pump seals, and other components.

For the IC engines, the potential emissions shown in Table 3 were based on the maximum hourly allowable emission rate (NOx), manufacturer's specifications (CO and VOC), EPA AIRS emission factors (SO<sub>2</sub> and PM), and AP-42 for HAPSs. For the remaining installations, the potential emissions were based on AP-42 emission factors or methodologies.

Emissions Unit ID	ARMA Reg. No.	Emissions Unit Description	Date Installed
Eng-92101 Eng-92102	9-0026 9-0027	Two (2) reciprocating internal combustion engines, Dresser Clark TCV-16, 5500 HP 2-stroke lean burn, natural gas fired.	1966 and 1971
Eng-92135	9-0000	Caterpillar G-398, 500 HP, 4-stroke rich burn internal combustion engine, natural gas fired; emergency generator	1965
921WBH01 921WBH04	5-0043 5-0044	Two (2) water bath heaters, BS&B, rated at 15 million Btu/hr, natural gas-fired	06/2009 and 2011
921WBH02 921WBH03	5-0044 5-0018 5-0019	Two (2) water bath heaters, BS&B, rated at 12 million Btu/hr, natural gas fired.	1965 and 1966
921SBH05 921SBH06	9-0022 9-0023	Two (2) salt bath heaters, BS&B, rated at 3 million Btu/hr, natural gas fired.	1994 and 1995
TK-02A (Tank-1) TK-02B (Tank-2)	9-0028	Two (2) pipeline liquids storage tank, 12,600 gallons, vertical, above-ground.	1965 and 1971
PL-TL	N/A	Pipeline liquids truck loading	1965
Station Fugitives	N/A	Facility Gas Releases Facility Pipeline Component Fugitives	N/A
Storage Field	N/A	Storage Field Gas Releases Storage Field Pipeline Component Fugitives	N/A

# Table 2.Emission Units

# Table 3. Potential Emissions

Emission Unit(s)	Emissions Unit Description	NOx (TPY)	CO (TPY)	VOC (TPY)	SO <sub>2</sub> (TPY)	PM /PM <sub>10</sub> / PM <sub>2.5</sub> (TPY)	HAPs (TPY)
E-92101	One (1) spark-ignited, lean burn IC engines, TCV-16, 5500 BHP, natural gas fired.	70.4	26.7	20.6	0.09	7.44	9.92
E-92102	One (1) spark-ignited, lean burn IC engines, TCV-16, 5500 BHP, natural gas fired.	70.4	26.7	20.6	0.09	7.44	9.92
E-92135	One (1) spark-ignited, rich burn 500 BHP IC emergency generator, natural gas fired.	2.64	4.32	0.03	<0.01	0.02	0.04
WBH01 WBH04	Two (2) 15 MMBtu/hr water bath heaters, natural gas fired.	12.9	10.8	0.71	0.08	0.98	0.24
WBH02 WBH03	Two (2) 12 MMBtu/hr water bath heaters, natural gas fired.	10.3	8.66	0.57	0.06	0.78	0.19
SBH05 SBH06	Two (2) 3 MMBtu/hr salt bath heaters, natural gas fired.	2.58	2.16	0.14	0.02	0.20	0.05
Tank-1 Tank-2	Two (2) pipeline liquids storage tank, 12,600 gallons.			4.83			0.08
PL-TL	Pipeline liquids truck loading			1.38			0.02
Station	Facility Gas Releases			86.1			5.98
Fugitives	Facility Pipeline Component Fugitives						
Storage Field	Storage Field Gas Releases			139.9			4.68
	Storage Field Pipeline						
	Component Fugitives						
	Total	169.2	79.4	274.8	0.34	16.9	31.1

# **OVERVIEW OF THE PART 70 PERMIT**

Section I of the Part 70 Permit contains a brief description of the facility and an inventory list of the emissions units for which applicable requirements are identified in Section IV of the permit.

Section II of the Part 70 Permit contains the general requirements that relate to administrative permit actions. This section includes the procedures for renewing, amending, reopening, and transferring permits, the relationship to permits to construct and approvals, and the general duty to provide information and to comply with all applicable requirements.

Section III of the Part 70 Permit contains the general requirements for testing, record keeping and reporting; and requirements that affect the facility as a whole, such as open burning, air pollution episodes, particulate matter from construction and demolition activities, asbestos provisions, ozone depleting substance provisions, general conformity, and acid rain permit. This section includes the requirement to report excess emissions and deviations, to submit an annual emissions certification report and an annual compliance certification report, and results of sampling and testing.

Section IV of the Part 70 Permit identifies the emissions standards, emissions limitations, operational limitations, and work practices applicable to each emissions unit located at the facility. For each standard, limitation, and work practice, the permit identifies the basis upon which the Permittee will demonstrate compliance. The basis will include testing, monitoring, record keeping, and reporting requirements. The demonstration may include one or more of these methods.

Section V of the Part 70 Permit contains a list of insignificant activities. These activities emit very small quantities of regulated air pollutants and do not require a permit to construct or registration with the Department. For insignificant activities that are subject to a requirement under the Clean Air Act, the requirement is listed under the activity.

Section VI of the Part 70 Permit contains State-only enforceable requirements. Section VI identifies requirements that are not based on the Clean Air Act, but solely on Maryland air pollution regulations. These requirements generally relate to the prevention of nuisances and implementation of Maryland's Air Toxics Program.

# REGULATORY REVIEW/TECHNICAL REVIEW/COMPLIANCE METHODOLOGY

#### **PERMITTING HISTORY**

#### Prevention of Significant Deterioration (PSD) and New Source Review (NSR) Approvals

There are no installations or activities that would subject the source to Prevention of Significant Deterioration (PSD) or non-attainment New Source Review (NSR).

On July 16, 2002 a permit to construct was issued for the modification of the two Clark TCV-16 engines with the installation of high pressure fuel injection technology in order to comply with Affected Non-Trading NOx Reduction requirements of COMAR 26.11.29.15. The permit established parametric monitoring requirements in order to demonstrate compliance with the NOx emissions limits. The modification of engines caused an increase in emissions of VOC and CO emissions. Based on 14,000 hours of operation, the potential net increase of VOC was calculated as 39.7 tons and net potential increase of CO was calculated as 31.4 tons. The net potential decrease in NOx emissions was calculated as 116.5 tons.

On July 11, 2006 a permit to construct was issued for the modification of the natural gas storage field to increase working storage capacity from 15.3 billion standard cubic feet (SCF) of natural gas to 18.3 billion SCF. In addition, the permit allowed for the installation of catalytic oxidation units on the two Clark TCV-16 engines. In order to avoid triggering nonattainment New Source Review, the permit to construct placed explicit federally enforceable limits on the premises-wide emissions of NOx, and VOC. Additionally, the Company agreed to maintain High Pressure Fuel Injection Control technology (HPFI) on Engine 92102 and Engine 92101. Engine 92101 was not originally subject to NOx SIP call requirements. This requirement was made Federally-enforceable [conditions D(5) - D(8), Permits to Construct 023-9-0026 and –0027 M issued on July 11, 2006].

#### Applicability of Federal New Source Performance Standards (NSPS)

 40 CFR Part 60 Subpart K (Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973 and Prior to May 19, 1978) and 40 CFR Part 60 Subpart Ka (Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984).

40 CFR Subpart K and Subpart Ka do not apply as storage tanks smaller than 40,000 gallons are exempt from these NSPS and all storage tanks at the Accident facility are less than 40,000 gallons.

2. 40 CFR Part 60, Subpart Kb (Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984)

40 CFR Part 60, Subpart Kb does not apply to storage vessels with a capacity greater than or equal to 151 m<sup>3</sup> (39,890 gallons) storing liquid with a maximum true vapor pressure less than 3.5 kilopascals (kPa) or with a capacity greater than 19,813 gallons but less than 39,890 gallons storing a liquid with a maximum true vapor pressure of less than 15.0 kPa. The 24,300 gallon wastewater/methanol tank has a maximum true vapor pressure of less than 15.0 kPa and is, therefore, exempt from 40 CFR Subpart Kb.

3. 40 CFR Part 60, Subpart JJJJ- Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

40 CFR Part 60, Subpart JJJJ applies to owners and operators of stationary spark ignition (SI) internal combustion engines that commence construction after June 12, 2006 and are manufactured:

- On or after July 1, 2007 for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines greater than or equal to 500 HP and less than 1,350 HP);
- On or after January 1, 2008 for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP;
- On or after July 1, 2008 for engines with a maximum engine power less than 500 HO; or
- On or after January 1, 2009 for emergency engines with a maximum engine power greater than 25 HP.

The two (2) 5,500 HP Dresser Clark 2-stroke lean burn natural gas-fired engines are not subject to 40 CFR Subpart JJJJ because they were manufactured prior to the applicability date of July 1, 2007 in the rule. The two emergency generator engines are not subject to NSPS Subpart JJJJ because they were also manufactured prior to the applicability date of January 1, 2009.

4. 40 CFR Part 60, Subpart Dc- Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

40 CFR Part 60, Subpart Dc applies to steam generating units for which construction, modification or reconstruction is commenced after June 9, 1989, that have a maximum design heat input capacity of less than or

equal to 100 MMBtu/hr, but greater than or equal to 10 MMBtu/hr. All four of the water bath heaters meet the heat input size threshold for Subpart Dc, but only the two 15 MMBtu/hr water bath heaters were constructed after the compliance date and are, therefore, subject to the rule. Both units burn only natural gas; under the rule, the water bath heaters were subject to an initial notification requirement and continue to be subject to record keeping requirements under 40 CFR 60.48c(g). The salt bath heaters are smaller than 10 MMBtu/hr and are, therefore, exempt from Subpart Dc.

5. 40 CFR Part 60, Subpart OOOO Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution

The Texas Eastern Compressor Station and Accident Storage Facility is not subject to 40 CFR Part 60, Subpart OOOO Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution because all affected facilities commenced construction, modification, and reconstruction prior to August 23, 2011.

 40 CFR Part 60, Subpart OOOOa- Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification, or Reconstruction Commenced after September 18, 2015

> The Texas Eastern Compressor Station and Accident Storage Facility is also not subject to 40 CFR Part 60 Subpart OOOOa because all affected facilities commenced construction, modification and reconstruction prior to the September 18, 2015 applicability date.

Applicability of National Emission Standards for Hazardous Air Pollutants (NESHAPS).

1. 40 CFR Part 63 Subpart HH- National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities

The natural gas production facilities, to which Subpart HH applies, ends at the point that the natural gas enters a facility in the natural gas transmission and storage category. The Accident Compressor Station is considered a natural gas transmission and storage facility; therefore, Subpart HH does not apply.

2. 40 CFR Part 63 Subpart HHH- National Emission Standards for Hazardous Air Pollutants from Natural Gas Transmission and Storage Facilities

Subpart HHH applies to glycol dehydration units at major sources of HAP. Since there are no glycol dehydration units at the Accident Compressor Station, Subpart HHH does not apply.

3. 40 CFR Part 63, Subpart ZZZ- Stationary Reciprocating Internal Combustion Engines

40 CFR Subpart ZZZZ applies to both new and existing reciprocating internal combustion engines (RICE) located at major and area sources of HAPs.

According to 40 CFR 63.6590(b)(3)(i), existing spark ignition 2 stroke lean burn stationary RICE with a site rating of more than 500 HP located at a major source of HAP emissions do not have to meet any requirements under Subpart ZZZZ including the initial notification requirements. The two Dresser Clark engines are, therefore, not subject to any requirements under Subpart ZZZZ.

According to 40 CFR 63.6590(a)(1)(ii), stationary RICE with a site rating of 500 HP or less located a major source of HAP emissions are existing RICE if construction or reconstruction was commenced before June 12, 2006. The two emergency generator engines were installed before this date and therefore, are considered existing stationary RICE. These engines are subject to requirements under Subpart ZZZZ which are detailed in the permit.

4. 40 CFR Part 63, Subpart DDDDD- National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters

40 CFR Subpart DDDDD applies to new and existing boilers and process heaters located at major sources of HAP. A boiler or process heater is new if it commenced construction of after June 4, 2010. All the water and salt bath heaters commenced construction prior to June 4, 2010 (existing units under Subpart DDDDD) except for WBH04 (new unit under Subpart DDDDD) which was installed in 2011.

# Proposed Regulatory Actions

1. Control Techniques Guidelines for the Oil and Natural Gas Industry

In August 2015, EPA proposed draft Control Technique Guidelines (CTGs) for the Oil and Natural Gas Industry. In an October 27, 2016 Federal Register Notice, EPA announced the availability of a final document titled, "Control Techniques Guidelines for the Oil and Natural Gas Industry". These guidelines will affect existing Oil and Natural Gas Industry sources of Volatile Organic Compounds (VOCs) located in ozone non-attainment areas as well as sources located in the Ozone Transport Region (OTR). Although Garrett County is an ozone attainment area, it is part of the OTR.

The guideline is intended to provide air agencies with information to assist them in determining reasonably available control technology ("RACT") for reducing VOC emissions from oil and natural gas industry emission sources. Air agencies can implement the recommendations contained in EPA's CTGs or they can adopt alternative approaches. In either case, air agencies must submit their RACT rules to EPA for review and approval.

Per the October 27, 2016 Federal Register Notice, states in the Ozone Transport Region must revise their State Implementation Plan (SIP) to implement RACT with respect to all sources of VOC in the state covered by a CTG document issued before or after November 15, 1990. The EPA is providing a 2-year period, from the effective date (October 27, 2016) included in this Notice, for the required SIP submittal.

The Department will be initiating a stakeholder process in 2017 to develop regulations to implement the final CTGs; once these regulations are finalized, they will be submitted to EPA for approval into the Maryland SIP.

2. Information Collection Request

In June 2016, EPA issued the first draft of an Information Collection Request (ICR) seeking a broad range of information on the oil and gas industry. EPA issued a second draft of the ICR in September 2016. On November 10, 2016, EPA issued the final ICR. Per EPA's fact sheet, "the information that companies will be required to collect and report to EPA will provide the foundation necessary for developing comprehensive regulations to reduce emissions from existing sources in the large and complex oil and gas industry."

# Applicable Federally Enforceable State Requirements

The applicable federally enforceable requirements were identified from the following sources: (1) the Part 70 permit application; (2) federally enforceable State regulations; (3) terms and conditions of State Permits to Construct that were issued for the facility that are deemed to support federally enforceable requirements; and (4) additional monitoring, testing, record keeping, and reporting conditions deemed necessary to ensure compliance with regulations or other federally enforceable requirements of the Part 70 permit under the authority provided in COMAR 26.11.03.06C. The authority for each applicable requirement of the permit is given in brackets. When the source of an applicable federally enforceable monitoring, record keeping, or reporting requirement is not from a Permit to Construct condition or a more specific federally enforceable State regulation, then COMAR 26.11.03.06C, the Department's general authority to impose periodic monitoring conditions, is given.

# Emission Units Eng-92101 and Eng-92102: Two (2) 5,500 BHP Internal Combustion Engines

The following federally enforceable requirements apply to the two (2) 5,500 BHP internal combustion engines

# Visible Emission Standards:

**COMAR 26.11.09.05E(2):** Emissions During Idle Mode. A person may not cause or permit the discharge of emissions from any engine, operating at idle, greater than 10 percent opacity.

**COMAR 26.11.09.05E(3):** Emissions During Operating Mode. A person may not cause or permit the discharge of emissions from any engine, operating at other than idle conditions, greater than 40 percent opacity.

# COMAR 26.11.09.05E(4) Exceptions:

- (a) COMAR 26.11.09.05E(2) does not apply for a period of 2 consecutive minutes after a period of 15 consecutive minutes for the purpose of clearing the exhaust system
- (b) COMAR 26.11.09.05E(2) does not apply to emissions resulting directly from cold engine start-up and warm-up for the following maximum periods:
  - (i) Engines that are idled continuously when not in service: 30 minutes;
  - (ii) All other engines: 15 minutes
- (c) COMAR 26.11.09.05E(2) and E(3) do not apply while maintenance, repair or testing is being performed by qualified mechanics

# Compliance Demonstration

Periodic monitoring requirements: The engines combust only gaseous fuels. No visible emissions would be expected provided the engines are properly maintained. To meet periodic monitoring requirements, the Permittee will be required only to maintain records demonstrating that the engines are being maintained in good operating condition. However, if visible emissions are observed, the incidents must be reported in accordance with COMAR 26.11.01.07.

# **Control of NOx Emissions:**

**COMAR 26.11.29.02B(1).** NOx Emission Limits. A person who owns or operates a stationary internal combustion engine to which this chapter applies shall perform either parametric optimization or engine rebuild to meet the following NOx emission limits:

Facilities with five or fewer internal combustion engines shall meet a combined maximum hourly emission limit of 300 pounds per hour or less.

# COMAR 26.11.29.02C(1) NOx Emission Rates.

The NOx emission rates in C(2) of this regulation apply to a stationary internal combustion engine used to compress natural gas located at natural gas pipeline compression stations if the engine is one of the types and corresponding sizes identified in C(2) of this regulation.

§C(2) Emission Rates.

Type of Engine	<u>Size (Brake HP)</u>	NOx Emission Rate (15 Percent Oxygen)
Spark ignited lean burn	2400 HP or greater	125 ppmv

Note: COMAR 26.11.29.01-.05 was adopted January 1, 2010. COMAR 26.11.29.02B(1) and COMAR 26.11.29.02C(1) supercede COMAR 26.11.09.08I Requirements for Glass Melting Furnaces and Internal Combustion Engines at Natural Gas Pipeline Stations. The NOx Emissions Limits and NOx Emission Rates restriction remained the same.

# COMAR 26.11.29.03 Monitoring Requirements.

- A. A person who owns or operates a stationary internal combustion engine subject to Regulation .02C of this chapter shall:
  - (1) Continuously monitor NOx emissions with a continuous emissions monitor (CEM) certified in accordance with 40 CFR Part 60 or use an alternative method approved by the Department and the EPA; (Note: The Permittee uses an approved alternate method).
  - (2) On or before May 1, 2002, and every year thereafter, collect NOx emissions data that was obtained pursuant to §A(1) of this regulation; and
  - (3) Submit emissions data collected pursuant to §A(2) of this regulation to the Department for the previous calendar year by April of each year.
- B. The NOx emissions data collected pursuant to §A(2) of this regulation shall be used to demonstrate compliance with the emission reduction requirement in

Regulation .02C of this chapter.

# COMAR 26.11.29.04 Demonstrating Compliance.

- A. Internal Combustion Engines Equipped with a CEM (not applicable)
- B. Internal combustion engines not equipped with a CEM
  - (1) The owner or operator of an internal combustion engine subject to this chapter that is not equipped with a CEM shall demonstrate compliance with the NOx emissions limits and rates in Regulation .02B,C of this chapter as follows:
    - (a) Compliance shall be established by stack tests using EPA Method 7 or other test methods approved by the Department and the EPA; or
    - (b) Compliance shall be established by an alternative emissions test approved by the Department.
  - (2) The results of the stack tests or alternative emissions test for each engine and fuel consumption records submitted to the Department pursuant to Regulation .05 of this Chapter shall be used to calculate NOx emissions for each affected engine.
  - (3) The sum of the NOx emissions from all of the stationary internal combustion engines at a natural gas pipeline compression station that are subject to this chapter shall be used to demonstrate compliance with Regulation .02B.
  - (4) Stack test schedule. The owner or operator of an internal combustion engine subject to this chapter that is not equipped with a CEM shall conduct a stack test or alternative emissions test approved by the Department to determine NOx emissions for each affected engine not less than once each 12-month period.
- Note: The Permittee has been approved to conduct the annual stack test by July 1 of each year using a Department approved portable exhaust gas analyzer, in accordance with procedures recommended by the analyzer manufacturer.

# COMAR 26.11.29.05 Maintaining Records

Results from the previous calendar year of the stack tests, emissions tests, or CEM data and fuel consumption records for each internal combustion engine subject to this chapter shall be submitted to the Department as part of the annual emissions report due April 1 each year.

# Compliance Demonstration

To achieve compliance with COMAR 26.11.29.02C(2), Texas Eastern installed High Pressure Fuel Injection technology (HPFI). Permit to Construct 023-9-0026 and -0027 M was issued on July 11, 2006 for the installation of HPFI technology on both engines. In lieu of CEMs, the Permittee elected to use an alternative parametric monitoring method, which was approved by the Department and the EPA. The engines are required to be equipped with a parametric emissions monitoring system (PEMS) that automatically

samples data at fifteen minute intervals or less and automatically records hourly averages. The system continuously monitors and records the engine speed, engine fuel flow rate, the air manifold temperature, air manifold pressure (AMP) and calculates a minimum air manifold pressure (AMP<sub>SP</sub>), required to achieve the standard specified in COMAR 26.11.29.02C(2). The air manifold pressure is automatically controlled, keeping the air/fuel ratio within defined limits.

The Permittee was required initially to establish, by emissions testing, a correlation between engine operating parameters and the NOx emissions. The Permittee was required to perform at least nine (9) stack test runs using EPA Reference or other approved methods with the engines operating over a range of operating conditions in accordance with a protocol approved by the Department The purpose of the testing was to determine the coefficients A, B, and C to equation (1) determining a critical "trapped air /fuel equivalence ratio" (TER)<sup>1</sup> as a function of engine operating parameters During routine operation, a critical trapped air/fuel equivalence ratio (TER<sub>SP</sub>) is calculated based on a fuel flow per revolution parameter (FFRPM) and equation (1) below:

(1) 
$$TER_{SP} = A^*(FFRPM)^2 + B^*(FFRPM) + C$$

Where A, B, and C are constants determined from required NOx emissions testing.

The required initial testing for engine 92102 was performed on December 12, 2002. The appropriate values of the coefficients A, B, and C were determined to be as follows:

The calculated air manifold pressure (gage) test point in inches of mercury (AMP<sub>SP</sub>) using a equation of the type below:

(2) 
$$AMP_{SP} = 2.036$$
  $\frac{AF_{ST}^* (0.0765 * FSG) * FFRPM}{*(AMT+460)} - 14.73$ ]  
\* [ 2.699 \* TER<sub>SP</sub> \* V<sub>TRAP</sub>

Where:

 $\begin{array}{l} \mathsf{AMP}_{\mathsf{SP}} = \mbox{ calculated air manifold pressure (gage) in inches of mercury.} \\ \mathsf{V}_{\mathsf{TRAP}} = \mbox{ engine trapped volume in cubic feet per revolution determined by engine geometry} \\ \mathsf{AF}_{\mathsf{ST}} = \mbox{ stoichiometric air/fuel mass ratio} \\ \mathsf{FSG} = \mbox{ the fuel gas specific gravity referenced to air} \\ \mathsf{FFRPM} = \mbox{ the calculated fuel flow per revolution in standard cubic feet per revolution} \end{array}$ 

Operation of the engine with an air manifold pressure (AMP) less than the air manifold pressure set point (AMPSP) by more than 10% shall constitute a violation of this

<sup>&</sup>lt;sup>1</sup>The trapped air/fuel equivalence ratio is a parameter approximately proportional to the ratio between the actual air/fuel ratio and the stoichiometric air/fuel ratio.

regulation unless the Permittee submits a separate demonstration of compliance with this regulation. [Authority: revised condition E(3), E(5) and E(6), permit to construct 023-9-0026 and -0027 M issued on July 16, 2002]. **Please note:** On May 20 and 21, 2015, the Permittee completed stack testing which demonstrated that the measured air manifold pressure may be less than the calculated air manifold pressure point by 10% without violating the NOx emission limit of 125 ppm.

The Permittee shall submit a test protocol to the Department for approval at least 30 days prior to the proposed testing. [Authority: COMAR 26.11.03.06C]

The Permittee is required to perform subsequent annual by emissions testing for NOx by July 1 of each year in accordance with procedures approved by the Department [Authority: Condition D(1)(f), permit to construct 023-9-0026 and -0027M issued on July 16, 2002 and COMAR 26.11.03.06C]. The Permittee shall perform NOx stack testing at least once during the term of the permit to confirm the constants A, B, and C for both engines.

# **Control of VOC and CO Emissions**

# Permit to Construct 023-9-0026 and 0027 M issued July 16, 2002

In order to avoid major New Source Review requirements, the VOC emissions increases from both engines collectively as a result of the modification authorized by Permits to Construct 023-9-0026 and –0027 M issued on July 16, 2002 shall be less than 40 tons per year in any period of 12 consecutive months. Note: A subsequent permit, Permit to Construct 023-9-0026 and 0027 M issued July 11, 2006, established more stringent VOC limits. Note: The Pre-Retrofit baseline VOC emissions were 13.7 tons per year.

# Compliance Demonstration

The Permittee is required to perform subsequent annual emissions testing for VOC, to be conducted contemporaneous with the NOx emissions testing on each engine in accordance with procedures approved by the Department [Authority: Condition D(1)(f), permit to construct 023-9-0026 and -0027M issued on July 16, 2002 and COMAR 26.11.03.06C(3)]. The Permittee shall maintain records of the calculation of emissions of VOC sufficient to demonstrate that the emissions increase from the modification of the engines do not exceed the limitation based on any period of 12 consecutive months of operation. [Authority: COMAR 26.11.03.06C]

# Compliance Demonstration for installation of oxidation catalyst

If the emission rate for CO determined during the initial or subsequent annual performance tests is greater than 7.7 pounds per hour, the Permittee must clean, reactivate, replace the catalyst or take other corrective measures deemed appropriate and repeat the performance test within 30 days. [Authority: Condition E(3), permit to construct 023-9-0026 and –0027 M, issued on July 11, 2006].

The Permittee shall continuously monitor and record the temperature of the flue gas at the inlet of the catalytic oxidizer units. The temperature data shall be reduced to 4-hour rolling averages which shall be computed at least once each hour from temperature measurements taken at least once every 15 minutes [Authority: Condition E(4), permit to construct 023-9-0026 and -0027 M, issued on July 11, 2006].

The Permittee shall maintain the 4-hour rolling average temperature of the flue gas at the inlet of the catalytic oxidizer above 450 °F [Authority: Condition E(5), permit to construct 023-9-0026 and –0027 M, issued on July 11, 2006].

The Permittee shall monitor and record once each month the pressure drop across the catalytic oxidation unit while the engine is operating at or above 90 percent of maximum load [Authority: Condition E(5), permit to construct 023-9-0026 and -0027 M, issued on July 11, 2006].

# Compliance Discussion- Stack Test Results

Table 4 summarizes the results of the required annual emissions testing for NOx, CO, and VOC for Engines 92101 and 92102.

	Engine 92101				Engine 92102			
Date	NOx ppm @15% O <sub>2</sub>	NOx (lb/hr)	CO (lb/hr)	VOC (lb/hr)	NOx ppm @ 15% O <sub>2</sub>	NOx (lb/hr)	CO (lb/hr)	VOC (lb/hr)
04/07/2011	36.4 ppm	5.50	2.27	0.90	58.7 ppm	9.19	1.84	1.15
04/25/2012	37.5 ppm	5.32	6.50	2.29	49.1 ppm	6.77	0.41	3.32
05/22/2013	97.5 ppm	13.77	5.48	4.01	62.7 ppm	8.72	3.88	3.14
06/03/2014	98.0 ppm	13.29	3.46	4.09	100.7ppm	13.11	2.74	3.76
05/20/2015	66.0 ppm	9.91	2.11	8.84	52.0 ppm	6.97	1.12	6.0
5/11/2016	73.0 ppm	9.27	0.89	5.26	104 ppm	14.53	1.39	5.74

# Table 4. Summary of Emissions Testing Results on Engines 92101 and 92102

# Emission Unit: One (1) 500 BHP Emergency Generator

The following federally enforceable requirements apply to the 500 BHP emergency generator:

#### Visible Emissions Standards:

**COMAR 26.11.09.05E(2):** Emissions During Idle Mode. A person may not cause or permit the discharge of emissions from any engine, operating at idle, greater than 10 percent opacity.

**COMAR 26.11.09.05E(3):** Emissions During Operating Mode. A person may not cause or permit the discharge of emissions from any engine, operating at other than idle conditions, greater than 40 percent opacity.

**COMAR 26.11.09.05E(4):** This regulation provides exceptions during start-up and after idling.

#### Compliance Demonstration

Periodic monitoring requirements: The engine combusts only gaseous fuel. No visible emissions would be expected provided the engine is properly maintained. To meet periodic monitoring requirements, the Permittee will be required only to maintain records demonstrating that the engine is being maintained in good operating condition. However, if visible emissions are observed, the incidents must be reported in accordance with COMAR 26.11.01.07.

# 40 CFR Part 63, Subpart ZZZ- Stationary Reciprocating Internal Combustion Engines

# §63.6645 What notifications must I submit and when?

63.6645(a) You must submit all of the notifications in 863.7(b) and (c), 63.8(e), (f)(4) and (f)(6), 63.9(b) through (e), and (g) and (h) that apply to you by the dates specified if you own or operate any of the following; Note: No notifications are required in accordance with 63.6645(a)(5)

§63.6645(a)(1) An existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions.

§63.6645(a)(5) The notification requirement of §63.6645(a) does not apply if you own or operate an existing stationary RICE less than 100 HP, **an existing stationary emergency RICE**, or an existing stationary RICE that is **not subject to any numerical emission standards**.

# §63.6602 What emission limitations and other requirements must I meet if I own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions?

§63.6602 If you own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions, you must comply with the ... requirements in Table 2c to this subpart which apply to you.

For each		During periods of startup you must
-	500 hours of operation or annually, whichever comes first. b. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.*
	every 500 hours of operation or annually, whichever comes	
	first, and replace as	
	necessary.	

# Table 2c to Subpart ZZZZ of Part 63

\* Note: There are no 40 CFR 63 subpart ZZZZ emission standards which apply to this emission unit.

# §63.6625 What are my monitoring, installation, collection, operation, and maintenance requirements?

§63.6625(e) ....you must operate and maintain the stationary RICE ... according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions:

§63.6625(f) ... , you must install a non-resettable hour meter if one is not already installed.

§63.6625(h) ... you must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to [the engine] all times other than startup in Tables 1a, 2a, 2c, and 2d to this subpart apply. Note: No emission standards in Tables 1a, 2a, 2c, or 2d apply to this engine.

§63.6625(j) provide the option of utilizing an oil analysis program meeting certain requirements in order to extend the specified oil change requirement in Tables 2c. See §63.6625(j) for the oil analysis requirements.

# §63.6640 How do I demonstrate continuous compliance with the emission limitations, operating limitations, and other requirements?

§63.6640(a) You must demonstrate continuous compliance with each emission limitation, operating limitation, and other requirements in ..., Table 2c, ... to this subpart that apply to you according to methods specified in Table 6 to this subpart.

For each…	Complying with the requirement to	You must demonstrate continuous compliance by
9. Existing emergency and black start stationary RICE ≤500 HP located at a major source of HAP, 		<ul> <li>i. Operating and maintaining the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions; or</li> <li>ii. Develop and follow your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.</li> </ul>

# Table 6 to Subpart ZZZZ of Part 63

§63.6640(b) You must report each instance in which you did not meet each ... operating limitation in ...Table2c ... to this subpart that apply to you. These instances are deviations must be reported according to the requirements in §63.6650....

§63.6640(f) If you own or operate an emergency stationary RICE, you must operate the emergency stationary RICE according to the requirements in paragraphs (f)(1)

through (4) of this section. In order for the engine to be considered an emergency stationary RICE under this subpart, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1) through (4) of this section, is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1) through (4) of this section, the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.

§63.6640(f)(1) There is no time limit on the use of emergency stationary RICE in emergency situations.

63.6640(f)(2) You may operate your emergency stationary RICE for any combination of the purposes specified in paragraph (f)(2)(i) for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph (f)(3) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (f)(2).

§63.6640(f)(2)(i) Emergency stationary RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year.

§63.6640(f)(2)(ii) and (iii)- vacated by DC Circuit Court decision

§63.6640(f)(3) Emergency stationary RICE located at major sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (f)(2) of this section. The 50 hours per year for non-emergency situations cannot be used for peak shaving or nonemergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

§63.6640(f)(4)- not applicable- applies to area sources

# §63.6655 What records must I keep?

§63.6655(d) You must keep the records required in Table 6 of this subpart to show continuous compliance with each ... work management practices that apply to you

§63.6655(e) You must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that you operated and maintained the stationary RICE ... according to your own maintenance plan if you own or operate any of the following stationary RICE; ...(2) An existing stationary emergency RICE.

§63.6655(f) ... you must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation.

# §63.6660 In what form and how long must I keep my records?

63.6660(a) Your records must be in a form suitable and readily available for expeditious review according to 63.10(b)(1).

§63.6660(b) As specified in §63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

§63.6660(c) You must keep each record readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to §63.10(b)(1).

# §63.6650 What reports must I submit and when?

§63.6650(a) You must submit each report in Table 7 of this subpart that applies to you.

Note: There are no reports in Table 7 applicable to this engine.

(5) For each stationary RICE that is subject to permitting regulations pursuant to 40 CFR part 70 ..., and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) ..., you may submit the first and subsequent Compliance reports according to the dates the permitting authority has established instead of according to the dates in paragraphs (b)(1) through (b)(4) of this section.

§63.6650(f) Each affected source that has obtained a title V operating permit pursuant to 40 CFR part 70 ... must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6 (a)(3)(iii)(A) .... If an affected source submits a Compliance report pursuant to Table 7 of this subpart along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) .... and the Compliance report includes all required information concerning deviations from any ... operating limitation in this subpart, submission of the Compliance report shall be deemed to satisfy any obligation to report the same deviations in the semiannual monitoring report. However, submission of a Compliance report shall not otherwise affect any obligation the affected source may

have to report deviations from permit requirements to the permit authority.

# Emission Units 921WBH01, 921WBH04, 921WBH02, 921WBH03, 921SBH05, and 921SBH06: 15 MMBtu/hr water bath heaters, 12 MMBtu/hr water bath heaters, and 3 MMBtu/hr salt bath heaters.

The following regulations relating to visible emissions apply to the gas-fired water bath and salt bath heaters:

# Visible Emissions Standards:

**COMAR 26.11.09.05A(1):** The Permittee shall not cause or permit the discharge of emissions from any fuel burning equipment other than water in an uncombined form, which is greater than 20 percent opacity.

**COMAR 26.11.09.05A(3)**: Provides exceptions to the above during start-up or occasional cleaning of control equipment, provided the emissions do not exceed 40 percent opacity for a period or periods aggregating not more than 6 consecutive minutes in any 60 minutes.

# Compliance Demonstration

For this equipment, periodic monitoring will be limited to good operating practices and maintenance. Fuel burning equipment that burns natural gas to produce hot water does not produce visible emissions. However, if visible emissions are observed, the incidents must be reported in accordance with COMAR 26.11.01.07.

# Control of NOx Emissions:

COMAR 26.11.09.08E NOx RACT for fuel burning equipment less than 100 MMBtu/hr

NOx RACT requirements for the boilers are found at **COMAR 26.11.09.08E**. Boilers with a rated heat input capacity of 100 MMBtu/hr or less are required to have a combustion analysis performed at least annually and operate in accordance with the optimum conditions as determined by the combustion analysis. COMAR 26.11.09.01B(1) defines *annual combustion analysis* as the measurement of CO and O<sub>2</sub> in the flue gas at the normal operating load and calculation of minimum excess air. Boiler operators are required to attend a training program once every three years on combustion optimization.

# Compliance Demonstration

The Permittee is required to prepare and maintain records of annual combustion analysis of training program attendance and make these records available to the Department upon request.

# Permit to Construct 023-9-0026 and -0027 M issued July 11, 2006

This Permit to Construct established a NOx and VOC limit. See Page 27 of the Fact Sheet.

# 40 CFR Part 60, Subpart Dc- Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units:

# 40 CFR 60 Subpart Dc, §60.48c(a)

Emission unit 921WBH01( installed in 2009) and emission unit 921WBH04 (installed in 2011), each rated at 15.0 mmBtu/hr, were subject to the following initial notification requirements under 40 CFR 60 Subpart Dc, §60.48c(a)

The owner or operator shall submit notification of the date of construction or reconstruction and actual startup, as provided by §60.7 of this part. This notification shall include: (1) The design heat capacity of the affected facility and fuels to be combusted in the affected facility .....(3) The annual capacity at which the owner or operator anticipates operating the affected facility based on all fuels fired. *Note: The notification was completed.* 

# 40 CFR 60 Subpart Dc, §60.48c(g)

(g)(1) Except as provided under paragraphs (g)(2) and (g)(3) of this section, the owner or operator of each affected facility shall record and maintain records of the amount of each fuel combusted during each operating day.

(g)(2) As an alternative to meeting the requirements of paragraph (g)(1) of this section, the owner or operator of an affected facility that **combusts only natural** gas, wood, fuels using fuel certification in  $\S60.48c(f)$  to demonstrate compliance with the SO<sub>2</sub> standard, fuels not subject to an emissions standard (excluding opacity), or a mixture of these fuels may elect to record and maintain records of the amount of each fuel combusted during each calendar month.

(g)(3) As an alternative to meeting the requirements of paragraph (g)(1) of this section, the owner or operator of an affected facility or multiple affected facilities located on a contiguous property unit where the only fuels combusted in any steam generating unit (including steam generating units not subject to this subpart) at that property are natural gas, wood, distillate oil meeting the most current requirements in §60.42C to use fuel certification to demonstrate compliance with the SO<sub>2</sub> standard, and/or fuels, excluding coal and residual oil, not subject to an emissions standard (excluding opacity) may elect to record and maintain records of the total amount of each steam generating unit fuel delivered to that property during each calendar month.

# Compliance Demonstration

The Permittee monitors the natural gas consumption.

# 40 CFR Part 63, Subpart DDDDD- National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters

§63.7495(b) Existing boiler or process heaters must comply with this subpart no later than January 31, 2016. (*Note: Applies to Htr-1, Htr-2, Htr-3, Htr-5, and Htr-6*)

§63.7490(b) A boiler or process heater is <u>new</u> if you commence construction of the boiler or process heater <u>after June 4, 2010</u>, and you meet the applicability criteria at the time you commence construction. *Note: Htr-4t was constructed in 2011 and qualifies as 'new' under this paragraph.* 

§63.7495(a) If you have a new ... boiler or process heater, you must comply with this subpart by April 1, 2013 or upon start-up of your boiler or process heater, whichever is later.

# §63.7500 What emission limitations, work practice standards, and operating limits must I meet?

§63.7500(a)(1) requires that the emission units must meet each applicable work practice standard in Table 3, 40 CFR part 63, subpart DDDDD.

# Table 3 to Subpart DDDDD of Part 63—Work Practice Standards

As stated in §63.7500, you must comply with the following applicable work practice standards:

If your unit is	You must meet the following
<ol> <li>A new or existing boiler or process heater with a continuous oxygen trim system that maintains an optimum air to fuel ratio, or a heat input capacity of less than or equal to 5 million Btu per hour in any of the following subcategories: unit designed to burn gas 1; unit designed to burn gas 2 (other); or unit designed to burn light liquid, or a limited use boiler or process heater</li> <li>Note: This applies to Htr-5 and Htr-6</li> </ol>	Conduct a tune-up of the boiler or process heater every 5 years as specified in §63.7540.

2. Not Applicable	
3. A new or existing boiler or process heater without a continuous oxygen trim system and with heat input capacity of 10 million Btu per hour or greater Note: This applies to Htrs-1,-2,-3,and -4.	Conduct a tune-up of the boiler or process heater annually as specified in §63.7540. Units in either the Gas 1 or Metal Process Furnace subcategories will conduct this tune-up as a work practice for all regulated emissions under this subpart.
<ul> <li>4. An existing boiler or process heater located at a major source facility, not including limited use units</li> <li>Note: This applies to Htrs-1,-2,-3, -5,and -6.</li> </ul>	Must have a one-time energy assessment performed by a qualified energy assessor. An energy assessment completed on or after January 1, 2008, that meets or is amended to meet the energy assessment requirements in this table, satisfies the energy assessment requirement. A facility that operated under an energy management program developed according to the ENERGY STAR guidelines for energy management or compatible with ISO 50001 for at least one year between January 1, 2008 and the compliance date specified in §63.7495 that includes the affected units also satisfies the energy assessment requirement. The energy assessment must include the following with extent of the evaluation for items a. to e. appropriate for the on-site technical hours listed in §63.7575:
	a. A visual inspection of the boiler or process heater system.
	b. An evaluation of operating characteristics of the boiler or process heater systems, specifications of energy using systems, operating and maintenance procedures, and unusual operating constraints.
	c. An inventory of major energy use systems consuming energy from affected boilers and process heaters and which are under the control of the boiler/process heater

owner/operator
d. A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage.
e. A review of the facility's energy management program and provide recommendations for improvements consistent with the definition of energy management program, if identified.
f. A list of cost-effective energy conservation measures that are within the facility's control
g. A list of the energy savings potential of the energy conservation measures identified.
h. A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments

§63.7500(e) ... Boilers and process heaters in the units designed to burn gas 1 fuels subcategory are not subject to the emission limits in Tables 1 and 2 or 11 through 13 to this subpart, or the operating limits in Table 4 to this subpart.

Note: The units are only subject to Table 3.

# §63.7510 What are my initial compliance requirements and by what date must I meet them?

§63.7510(e) For existing affected sources (as defined in §63.7490) an initial tune-up of the boilers must be completed by following the procedures described in §63.7540(a)(10)(i) through (vi) no later than January 31, 2016. Additionally, a one-time energy assessment as specified in Table 3, 40 CFR part 63, subpart DDDDD no later than January 31, 2016. (*Note: This applies to Htrs-1,-2,-3,-5, and -6*).

§63.7510(g) For new or reconstructed affected sources (as defined in §63.7490), you must demonstrate initial compliance with the applicable work practice standards in Table 3 to this subpart within the ... annual... schedule as specified in §63.7515(d) following the initial compliance date specified in §63.7495(a). Thereafter, you are required to complete the ...annual... tune-up as specified in §63.7515(d). (*Note: This applies to Htr-4*)

# §63.7515 When must I conduct subsequent ... tune-ups?

§63.7515(d) If you are required to meet an applicable tune-up work practice standard, you must conduct an annual tune-up (Htrs-1,-2,-3 and -4), or 5-year performance tune-up (Htrs-5 and -6) according to §63.7540(a)(10) and (12) accordingly. Each annual tune-up specified in §63.7540(a)(10) must be no more than 13 months after the previous tune-up. Each 5-year tune-up specified in §63.7540(a)(12) must be conducted no more than 61 months after the previous tune-up.

# §63.7540 How do I demonstrate compliance with the ... work practice standards?

63.7540 (a) You must demonstrate continuous compliance with ... the work practice standards in Table 3 to this subpart, ... that applies to you according to the methods specified in ... and paragraphs (a)(1) through (19) of this section.

§63.7540(a)(10) If your boiler or process heater has a heat input capacity of 10 million Btu per hour or greater, you must conduct an annual tune-up of the boiler or process heater to demonstrate continuous compliance as specified in paragraphs (a)(10)(i) through (vi) of this section

(Note: This applies to Htrs-1,-2,-3, and -4)

§63.7540(a)(12) If your boiler or process heater has ...a heat input capacity of less than or equal to 5 million Btu per hour ..., you must conduct a tune-up of the boiler or process heater every 5 years as specified in paragraphs (a)(10)(i) through (vi) of this section to demonstrate continuous compliance. You may delay the burner inspection specified in paragraph (a)(10)(i) of this section until the next scheduled or unscheduled unit shutdown, but you must inspect each burner at least once every 72 months. *(Note: This applies to Htrs-5 and-6)* 

The Permittee shall perform an initial tune-up and subsequent annual tune-ups for Htrs-1,-2,-3,and -4 and subsequent 5-year tune-ups for Htrs-5 and-6 following the monitoring procedures specified in §63.7540(a)(10)(i) through (vi):

§63.7540(a)(10)(i) As applicable, inspect the burner, and clean or replace any components of the burner as necessary (you may delay the burner inspection until the next scheduled unit shutdown). At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment;

§63.7540(a)(10)(ii) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;

§63.7540(a)(10)(iii) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (you may delay the inspection until the next scheduled unit shutdown);

§63.7540(a)(10)(iv) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NOx requirement to which the unit is subject;

§63.7540(a)(10) (v) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer; and

§63.7540(a)(10)(vi) Maintain on-site and submit, if requested by the Administrator, a report containing the information in paragraphs (a)(10)(vi)(A) through (C) of this section,

(A) The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler or process heater;

(B) A description of any corrective actions taken as a part of the tune-up; and

(C) The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit

§63.7540 (a) (13) If the unit is not operating on the required date for a tune-up, the tuneup must be conducted within 30 calendar days of startup.

§63.7555(a)(1). The Permittee shall keep a copy of each notification and report submitted to comply with Part 63, subpart DDDDD, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report that was submitted according to the requirements in §63.10(b)(2)(xiv).

The Permittee shall include in the annual Compliance Certification Report required by Section III, Part 9 of this permit, and in accordance with §63.7550(b), the information required by §63.7550(c)(1) through (5), and a statement, if there are no deviations from applicable the work practice standards in Table 3, a statement that there were no

deviations from the work practice standards during the reporting period. If there was a deviation from a work practice standard during the reporting period, the report must contain the information required in 63.7550(d). *Note: Semi-annual monitoring reports are required in accordance with Section III, Part 4d of this permit, which shall, "… provide accounts of all deviations from permit requirements that occurred during the reporting period."* 

Emission Units: Eng-92101 and Eng-92102: Two (2) 5,500 BHP Internal Combustion Engines and Emission Units 921WBH01, 921WBH04, 921WBH02, 921WBH03, 921SBH05, and 921SBH06: 15 MMBtu/hr water bath heaters, 12 MMBtu/hr water bath heaters, and 3 MMBtu/hr salt bath heaters.

# Permit to Construct 023-9-0026 and -0027 M issued July 11, 2006

In order to avoid triggering the requirements of Major New Source Review, Permit to Construct 023-9-0026 & -0027M issued on July 11, 2006 imposed the following conditions on Emission Units Eng-92101, Eng-92102, Water Bath Heaters WBH01, WBH02, WBH03, and WBH04 and Salt Bath Heaters SBHH05 and SBH06:

# NOx Emissions Limitations

- (1) The net contemporaneous NOx emissions increase from the premises, excluding fugitive emissions, as a result of the proposed modifications to the adjacent natural gas storage field and after installation of the oxidation catalyst, shall be limited to less than 40 tons per year of NOx in any period of 12 consecutive months [Authority: Condition D(7), permit to construct 023-9-0026 and -0027 M, issued on July 11, 2006]. Compliance with paragraph (2) as follows assures compliance with this requirement. The 182.5 tons is the baseline emissions for NSR netting analysis plus 40 tons.
- (2) The emissions of NOx from the affected installations (Engine 92101, Engine 92102, and Boilers SBH1, SBH2, WBH1, WBH2, WBH3, and WBH4) shall be limited to the following unless the Permittee receives prior approval from the Department:
  - (a) 182.5 tons per year for NOx, in any period of 12 consecutive months; and
  - (b) To assure compliance with this limitation, the total hours of operation of Engine 92101 and Engine 92102 shall not exceed 14,000 hours per year in any period of 12 consecutive months [Authority: Condition D(8), permit to construct 023-9-0026 and –0027 M, issued on July 11, 2006].

# VOC Emissions Limitations

(1) The net contemporaneous VOC emissions increase from the premises, excluding fugitive emissions, as a result of the proposed modifications to the adjacent natural gas storage field and after installation of the oxidation catalyst, shall be limited to less

than 40 tons per year of VOC in any period of 12 consecutive months [Authority: Condition D(7), permit to construct 023-9-0026 and -0027 M, issued on July 11, 2006]. Compliance with paragraph (2) as follows assures compliance with this requirement.

- (2) The emissions of VOC from the affected installations (Engine 92101, Engine 92102, and Boilers SBH1, SBH2, WBH1, WBH2, WBH3, and WBH4) shall be limited to the following unless the Permittee receives prior approval from the Department:
  - (a) 45.6 tons per year for VOC (excluding fugitive emissions), in any period of 12 consecutive months.
  - (b) To assure compliance with this limitation, the total hours of operation of Engine 92101 and Engine 92102 shall not exceed 14,000 hours per year in any period of 12 consecutive months [Authority: Condition D(8), permit to construct 023-9-0026 and –0027 M, issued on July 11, 2006].

# Compliance Demonstration

The Permittee shall maintain and operate the internal combustion engines and any associated air pollution control equipment, including the catalytic oxidation units, in such a manner as to ensure full and continuous compliance with all applicable regulations [Authority: Condition D(2), permit to construct 023-9-0026 and -0027 M, issued on July 11, 2006]. The Permittee shall properly maintain and keep in good working condition all control panel instrumentation and monitoring devices that the Permittee uses to determine if the air pollution control equipment is operating as designed [Authority: Condition D(3), permit to construct 023-9-0026 and -0027 M, issued on July 11, 2006].

The Permittee shall maintain a record of the calculations of the annual NOx and VOC emissions from Engine 92101, Engine 92102, and Boilers SBH1, SBH2, WBH1, WBH2, WBH3, and WBH4. The Permittee shall maintain a record of the total hours of operation of Engine 92101 and Engine 92102 for each period of 12 consecutive months. [Authority: COMAR 26.11.03.06C]

The Permittee shall submit annual Compliance Certification Reports in accordance with Section III, Part 9 of this permit certifying compliance with the emissions limitations and annual hours of operation of Engine 92101 and Engine 92102.

#### Compliance Discussion:

The following table shows the certified NOx and VOC emissions for the past three years from the engines and boilers. The emissions are significantly less than the total allowable of 182.5 tons of NOx and 45.6 tons of VOCs.

Year	NOx Emissions (Tons)		VOC Emission (Tons)		Annual Hours for Engines
	Engines Boilers		Engines	Boilers	
2015	30.89	4.64	27.04	0.25	7905
2014	55.72	8.1	16.58	0.44	8443
2013	33.75	4.1	10.68	0.23	6362

# Emission Units TK-02A, TK-02B, and PL-TL: Two (2) pipeline liquid storage vertical AST, 12,600 gallons and Pipeline Liquids Tank Truck Loading.

These emission units are not subject to Federal regulations 40 CFR Part 60, Subpart K, Ka, Kb because they are either too small or were installed prior to the applicability dates of the regulations. They are subject to the following Federally-enforceable State regulations:

Please note: the following installations that qualify as insignificant activities (COMAR 26.11.02.10X) are also subject to COMAR 26.11.13.04D requirements. ACC3A through ACC3F - Six (6) waste methanol/water tanks AST, 8450 gallons; ACCI-MeOH01 through ACCI-MeOH04- Four (4) methanol AST, 10,000 gallons.

**COMAR 26.11.13.04D Equipment Leaks during VOC Storage and Transfer.** General Standards. A person may not cause or permit gasoline or VOC having a TVP of 1.5 psia (10.3 kilonewtons/square meter) or greater to be loaded into any tank truck, railroad tank car, or other contrivance unless the:

- (1) Loading connections on the vapor lines are equipped with fittings that have no leaks and that automatically and immediately close upon disconnection to prevent release of gasoline or VOC from these fittings;
- (2) Equipment is maintained to prevent avoidable liquid leaks during loading and unloading operations

# Compliance Demonstration

The Permittee will be required to conduct routine inspections of each tank truck loading operation to ensure that loading connections have no leaks. The inspection will be conducted while the tank truck is being loaded or unloaded. The Permittee will be required to record the results of the inspections and make these results available to the Department upon request [Authority: COMAR 26.11.13.04D(2) and COMAR 26.11.03.06C(3)].

# Emission Units: Fugitives: Facility Gas Releases, Facility Pipeline Component Fugitives, Storage Field Gas Releases, and Storage Field Pipeline Component Fugitives.

Fugitive volatile organic compound (VOC) emissions from the facility and storage field consist of leaks from pipeline components and gas releases from blowdowns and purges. Blowdowns include, but are not limited to, station blowdown, case venting, and ancillary equipment (emergency generator, fuel gas heater, blowdown of fuel lines and/or equipment, etc). Purges include air purges and pipeline liquid purges, which use natural gas as the purging volume. Piping components consists of valves, connectors, flanges, open ended lines, pump seals, and other components.

There are no emission standards that apply to the fugitive emission points.

The following information was provided by Texas Eastern with regards to fugitive emissions:

Fugitive Emissions at Texas Eastern's Accident Station are managed by best practices to minimize leaks. Texas Eastern performs routine voluntary piping and component inspection activities to identify and address leaks in its pipeline components and implement repairs, if necessary. This is similar in practice to a regulatory leak detection program.

At the Accident Storage facility, each wellhead is inspected on a monthly basis for the purpose of monitoring the wellhead integrity in accordance with a standard operating procedure. The inspection includes visual monitoring for corrosion, fluid, or gas leakage, and any evidence of damage to the wellhead assembly. Repairs are initiated and documented, if necessary.

Most of Accident Station's storage wells are engineered in such a way inspection of the entire vertical depth of the well casing (i.e. production or final cemented casing) can be conducted with inline inspection tools, or smart pigs, that inspect for any blockages, dents, or corrosion, and verify the thickness of the casing. Over the past 5 years, Texas Eastern has been actively undertaking a facility improvement program to allow for the use of smart pig tools on all wells at the

Accident Facility. This program will be completed in 2016.

# **COMPLIANCE SCHEDULE**

The facility is not subject to any compliance schedule.

# COMPLIANCE ASSURANCE MONITORING (CAM) (40 CFR PART 64)

CAM is intended to provide a reasonable assurance of compliance with applicable requirements under the Clean Air Act for large emission units that rely on air pollution control (APC) equipment to achieve compliance. The CAM approach establishes monitoring for the purpose of: (1) documenting continued operation of the control measures within ranges of specified indicators of performance (such as emissions, control device parameters, and process parameters) that are designed to provide a reasonable assurance of compliance with applicable requirements; (2) indicating any excursions from these ranges; and (3) responding to the data so that the cause or causes of the excursions are corrected. In order for a unit to be subject to CAM, the unit must be located at a major source, be subject to an emission limitation or standard; use a control device to achieve compliance; have post-control emissions of at least 100% of the major source amount (for initial CAM submittals); and must not otherwise be exempt from CAM. Applicability determinations are made on a pollutant-by-pollutant basis for each emission unit.

With regards to NOx emissions, Texas Eastern does not utilize add-on controls to achieve compliance with the NOx emissions limits; therefore, CAM does not apply.

With regards to Carbon Monoxide (CO) emissions, in 2006, PTC 023-9-0026 and -0027 M was issued which authorized the installation of oxidation catalyst units to further reduce emissions from the two compressor engines. Although the catalyst units are add-on controls, CAM regulations do not apply. According to §64.2(3), an affected unit must have "potential pre-control device emissions of the applicable regulated pollutant that are equal or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source." The uncontrolled potential to emit CO emissions of each compressor engine is less than 100 tons per year.

With regards to Hazardous Air Pollutant (HAP) emissions, the uncontrolled potential emissions of the HAP formaldehyde from each engine exceed 10 TPY, the major source threshold for any individual HAP. However, there is no applicable HAP emission standard.

# **GREENHOUSE GAS (GHG) EMISSIONS**

There are no greenhouse gas related Clean Air Act requirements applicable to Texas

Eastern. Texas Eastern has not triggered Prevention of Significant Deterioration (PSD) requirements for GHG emissions; therefore, there are no applicable GHG Clean Air Act requirements.

# TITLE IV - ACID RAIN PROGRAM

The Accident Compressor Station is not subject to the Acid Rain provisions of the Clean Air Act.

# TITLE VI - OZONE DEPLETING SUBSTANCES

The Accident Compressor station is subject to the recycling and emission reduction program under 40 CFR 82, Subpart F.

# SECTION 112(r) - ACCIDENTAL RELEASES

The Accident Compressor station is not subject to the accidental release requirements under Section 112(r).

# PERMIT SHIELD

Permit shields are granted on an emission unit by emission unit basis. If an emission unit is covered by a permit shield, a permit shield statement will follow the emission unit table in Section IV - Plant Specific Conditions of the permit. In this case, a permit shield was granted for each emission unit covered by the permit.

# INSIGNIFICANT ACTIVITIES

This section of the permit contains state-only enforceable requirements. The requirements in this section will not be enforced by the U.S. Environmental Protection Agency. The requirements in this section are not subject to COMAR 26.11.03.10- Public Petitions for Review to EPA Regarding Part 70 Permits.

- (1) No. <u>23</u> Fuel burning equipment using gaseous fuels or No. 1 or No. 2 fuel oil, and having a heat input less than 1,000,000 But (1.06 gigajoules) per hour;
- (2) No. <u>1</u> Stationary internal combustion engines with an output less than 500 brake horsepower (373 kilowatts) and which are not used to generate electricity for sale or for peak or load shaving:

One (1) 470 HP Waukesha L-3711 emergency generator (auxiliary generator

92136) is subject to the following requirements:

These unit is subject to the following requirements:

- (A) COMAR 26.11.09.05E(2), Emissions During Idle Mode: The Permittee may not cause or permit the discharge of emissions from any engine, operating at idle, greater than 10 percent opacity.
- (B) COMAR 26.11.09.05E(3), Emissions During Operating Mode: The Permittee may not cause or permit the discharge of emissions from any engine, operating at other than idle conditions, greater than 40 percent opacity.
- (C) Exceptions:
  - (i) COMAR 26.11.09.05E(2) does not apply for a period of 2 consecutive minutes after a period of idling of 15 consecutive minutes for the purpose of clearing the exhaust system.
  - (ii) COMAR 26.11.09.05E(2) does not apply to emissions resulting directly from cold engine start-up and warm-up for the following maximum periods:
    - (a) Engines that are idled continuously when not in service: 30 minutes
    - (b) all other engines: 15 minutes.
  - (iii) COMAR 26.11.09.05E(2) & (3) do not apply while maintenance, repair or testing is being performed by qualified mechanics.

Note: See the requirements from 40 CFR part 63, subpart ZZZZ that apply to Emission Unit E-92135- 500 BHP natural gas fired emergency generator. The requirements are the same.

- (3) \_\_\_\_\_ Space heaters utilizing direct heat transfer and used solely for comfort heat;
- (4) Containers, reservoirs, or tanks used exclusively for:

No. <u>5</u> Storage of lubricating oils.

- (5) No. <u>2</u> Charbroilers and pit barbecues as defined in COMAR 26.11.18.01 with a total cooking area of 5 square feet (0.46 square meter) or less;
- (6) Any other emissions unit, not listed in this section, with a potential to emit less than the *de minimis* levels listed in COMAR 26.11.02.10X (list and describe units):

Emission Unit	Description	Size	COMAR Reference
Tank ACC1	Used Oil (AST)	2,940 gal.	26.11.03.04A(3)
Tanks ACC3-3F	Waste methanol/water (6 – AST)	8,450 gal.	26.11.02.10X
Tanks ACC4A, -4B	Pipeline Liquids (2 – AST)	1,500 gal.	26.11.02.10X
Tank ACC5	Scrubber Oil (AST)	345 gal.	26.11.03.04A(3)
Tank ACC6	Cylinder Oil (AST)	700 gal.	26.11.03.04A(3)
Tanks ACC7A,-7B	Lube Oil (2- AST)	3,000 gal.	26.11.03.04A(3)
Tank ACC9	Ambitrol (1 – UST)	4,200 gal.	26.11.02.10X
Tanks ACCI-MeOH01 thru ACCI-MeOH04	Wastewater/ methanol (4 – AST)	10,000 gal.	26.11.02.10X
"new" (2007)	Methanol (1 – AST)	10,000 gal.	26.11.02.10X
"new" (2007)	Methanol (6 – AST)	900 gal.	26.11.02.10X
T.Load	Truck loading activities	0	26.11.02.10X
PW	Safety Kleen Parts Washer		26.11.02.10X
Wastewater/Methanol Tank	Wastewater/methanol (1-	24,300 gal	26.11.02.10X
Tank DEF-1	Defoamer tank (Process tank)	500 gal	26.11.02.10X
Tank AC-1	Stores condensate from air compressor (Process tank)	500 gal	26.11.02.10X
Tank Jenkins #1	Field Methanol Pump Tank	900 gal.	26.11.02.10X
Tank McCullough#4	Field Methanol Pump Tank	900 gal.	26.11.02.10X
Tank Black & Frazee #1	Field Methanol Pump Tank	1,000 gal.	26.11.02.10X
Tank Black & Frazee #2	Field Methanol Pump Tank	900 gal.	26.11.02.10X
Tank Rexrode #3	Field Methanol Pump Tank	900 gal.	26.11.02.10X
Tank Knox #1	Field Methanol Pump Tank	1,000 gal.	26.11.02.10X
Tank Fratz #1	Field Methanol Pump Tank	900 gal.	26.11.02.10X
Tank B-B1	Field Methanol Pump Tank	900 gal.	26.11.02.10X
Tank End of C-Line	Field Methanol Pump Tank	900 gal.	26.11.02.10X
Tank Kelso #1	Field Methanol Pump Tank	1,000 gal.	26.11.02.10X
Tank George #3	Field Methanol Pump Tank	1,000 gal.	26.11.02.10X
Tank End of B1-Line	Field Methanol Pump Tank	1,000 gal.	26.11.02.10X

# STATE-ONLY ENFORCEABLE REQUIREMENTS

The Permittee is subject to the following State-only enforceable requirements:

- 1. Applicable State-only Enforceable Regulations:
  - (A) COMAR 26.11.06.08 and 26.11.06.09, which generally prohibit the discharge of emissions beyond the property line in such a manner that a nuisance or air pollution is created.
  - (B) COMAR 26.11.15.06, which prohibits the discharge of toxic air pollutants to the extent that such emissions will unreasonably endanger human health
  - (C) COMAR 26.11.36.03A(5), which establishes that the Permittee may not operate an emergency generator for testing and engine maintenance purposes between 12:01 a.m. and 2:00 p.m. on any day on which the Department forecasts that the air quality will be a code orange, code red, or code purple.
- 2. Record Keeping and Reporting:

The Permittee shall submit to the Department, by April 1 of each year during the term of this permit, a written certification of the results of an analysis of emissions of toxic air pollutants from the Permittee's facility during the previous calendar year. The analysis shall include either:

- (a) a statement that previously submitted compliance demonstrations for emissions of toxic air pollutants remain valid; or
- (b) a revised compliance demonstration, developed in accordance with requirements included under COMAR 26.11.15 & 16, that accounts for changes in operations, analytical methods, emissions determinations, or other factors that have invalidated previous demonstrations.