

PUBLIC NOTICE

Tennessee Gas Pipeline Company, L.L.C.-Compressor Station 87 has applied to the Tennessee Department of Environment and Conservation, Division of Air Pollution Control for renewal of their major source (Title V) operating permit subject to the provisions of Tennessee Air Pollution Control Regulations 1200-03-09-.02(11) (Title V Regulations). A major source operating permit is required by both the Federal Clean Air Act and Tennessee's air pollution control regulations. However, it should be noted that this facility has a current major source operating permit.

The applicant is **Tennessee Gas Pipeline Company, L.L.C.-Compressor Station 87** with a site address of 208 TGT Road, Portland, TN 37148. They have applied for renewal of their existing major source (Title V) operating permit for their natural gas compressor station operation.

EPA has agreed to treat this draft Part 70 permit as a proposed Part 70 permit and to perform its 45-day review provided by the law concurrently with the public notice period. If any substantive comments are received, EPA's 45-day review period will cease to be performed concurrently with the public notice period. In this case, EPA's 45-day review period will start once the public notice period has been completed and EPA receives notification from the Tennessee Air Pollution Control Division that comments have been received and resolved. The status regarding EPA's 45-day review of these permits and the deadline for submitting a citizen's petition can be found at the following website address:

<https://www.epa.gov/caa-permitting/tennessee-proposed-title-v-permits>

Copies of the application materials and draft permits are available for public inspection during normal business hours at the following locations:

Nashville Environmental Field Office
711 R.S. Gass Blvd
Nashville, TN 37216

and

Tennessee Department of Environment and Conservation
Division of Air Pollution Control
Davy Crockett Tower, 7th Floor
500 James Robertson Parkway
Nashville, TN 37243

Electronic copies of the draft permits are available by accessing the TDEC internet site located at:

<https://www.tn.gov/environment/ppo-public-participation/ppo-public-participation/ppo-air.html>

Questions concerning the source(s) may be addressed to Mark A. Landry at (615) 571-2817 or by e-mail at Mark.Landry@tn.gov.

Interested parties are invited to review these materials and comment. In addition, a public hearing may be requested at which written or oral presentations may be made. To be considered, written comments or requests for a public hearing must be received no later than 4:30 PM on September 12, 2026. To assure that written comments are received and addressed in a timely manner, written comments must be submitted using one of the following methods:

1. **Mail, private carrier, or hand delivery:** Address written comments to Ms. Michelle W. Owenby, Director, Division of Air Pollution Control, Davy Crockett Tower, 500 James Robertson Parkway, 7th Floor, Nashville, Tennessee 37243.
2. **E-mail:** Submit electronic comments to air.pollution.control@tn.gov.

A final determination will be made after weighing all relevant comments.

Individuals with disabilities who wish to review information maintained at the above-mentioned depositories should contact the Tennessee Department of Environment and Conservation to discuss any auxiliary aids or services needed to facilitate such review. Such contact may be in person, by writing, telephone, or other means, and should be made no less than ten days prior to the end of the public comment period to allow time to provide such aid or services. Contact the Tennessee Department of Environment and Conservation ADA Coordinator, Davy Crockett Tower, 5th Floor, 500 James Robertson Parkway, Nashville, TN 37243, 1-(866)-253-5827. Hearing impaired callers may use the Tennessee Relay Service, 1-(800)-848-0298.

STATE OF TENNESSEE
AIR POLLUTION CONTROL BOARD
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243



OPERATING PERMIT (TITLE V) Issued Pursuant to Tennessee Air Quality Act

This permit fulfills the requirements of Title V of the Federal Clean Air Act (42 U.S.C. 7661a-7661e) and the federal regulations promulgated thereunder at 40 CFR Part 70. (FR Vol. 57, No. 140, Tuesday, July 21, 1992 p.32295-32312). This permit is issued in accordance with the provisions of paragraph 1200-03-09-.02(11) of the Tennessee Comprehensive Rules and Regulations. The permittee has been granted permission to operate an air contaminant source in accordance with emissions limitations and monitoring requirements set forth herein.

Date Issued: DRAFT-PROPOSED

Permit Number:

Date Expires: DRAFT-PROPOSED

581660

Issued To:

Tennessee Gas Pipeline Company, L.L.C. - Compressor Station 87

Installation Address:

208 TGT Road
Portland

Installation Description:

Natural Gas Pipeline Compressor Station:

- 01: Twenty-two natural gas-fired reciprocating engines
- 02: Two natural gas-fired emergency generator engines
- 03: Two natural gas-fired heaters and two natural gas-fired evaporators

Facility ID: 83-0008

Renewal Application Due Date:

Between DRAFT-PROPOSED, and DRAFT-PROPOSED

Primary SIC: 49

Information Relied Upon:

Title V renewal applications dated August 1, 2023 and July 9, 2025

(continued on the next page)

TECHNICAL SECRETARY

No Authority is Granted by this Permit to Operate, Construct, or Maintain any Installation in Violation of any Law, Statute, Code, Ordinance, Rule, or Regulation of the State of Tennessee or any of its Political Subdivisions.

POST AT INSTALLATION ADDRESS

PROPOSED

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ATTACHMENT #6	Opacity Matrix Decision Tree for Visible Emission Evaluation by EPA Method 9 Dated June 18, 1996 and Amended September 11, 2013	1 page
ATTACHMENT #7	EPA AP-42 FIFTH EDITION, VOLUME I CHAPTER 3, STATIONARY INTERNAL COMBUSTION SOURCES UNCONTROLLED EMISSION FACTORS FOR 2-STROKE LEAN-BURN ENGINES, 4-STROKE LEAN-BURN ENGINES, & 4-STROKE RICH-BURN ENGINES Dated October 2024	11 pages
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ATTACHMENT #10	Compliance Assurance Monitoring (CAM) Plan, Units 1E and 2E Revision 2, May 2006	11 pages
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SECTION A

GENERAL PERMIT CONDITIONS

A permit issued under the provisions of Tennessee Air Pollution Control Regulations (TAPCR) paragraph 1200-03-09-.02(11) is a permit issued pursuant to the requirements of Title V of the Federal Act and its implementing Federal regulations promulgated at 40 CFR, Part 70.

- A1. Definitions.** Terms not otherwise defined in the permit shall have the meaning assigned to such terms in the referenced regulations.

TAPCR 1200-03 and 0400-30

- A2. Compliance requirement.** All terms and conditions in a permit issued pursuant to TAPCR paragraph 1200-03-09-.02(11), including any provisions designed to limit a source's potential to emit, are enforceable by the Administrator and citizens under the Federal Act. The permittee shall comply with all conditions of its permit. Except for requirements specifically designated herein as not being federally enforceable (State Only), non-compliance with the permit requirements is a violation of the Federal Act and the Tennessee Air Quality Act and is grounds for enforcement action; for a permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. Non-compliance with permit conditions specifically designated herein as not being federally enforceable (State Only) is a violation of the Tennessee Air Quality Act and may be grounds for these actions.

TAPCR 1200-03-09-.02(11)(e)2(i) and 1200-03-09-.02(11)(e)1(vi)(I)

- A3. Need to halt or reduce activity.** The need to halt or reduce activity is not a defense for noncompliance. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit. However, nothing in this item shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in assessing penalties for noncompliance if the health, safety, or environmental impacts of halting or reducing operations would be more serious than the impacts of continuing operations.

TAPCR 1200-03-09-.02(11)(e)1(vi)(II)

- A4. The permit.** The permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

TAPCR 1200-03-09-.02(11)(e)1(vi)(III)

- A5. Property rights.** The permit does not convey any property rights of any sort, or any exclusive privilege.

TAPCR 1200-03-09-.02(11)(e)1(vi)(IV)

- A6. Submittal of requested information.** The permittee shall furnish to the Technical Secretary, within a reasonable time, any information that the Technical Secretary may request in writing to determine whether cause exists for modifying, revoking and reissuing, or termination of the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Technical Secretary copies of records required to be kept by the permit. If the permittee claims that such information is confidential, the Technical Secretary may review that claim and hold the information in protected status until such time that the Board can hear any contested proceedings regarding confidentiality disputes. If the information is desired by EPA, the permittee may mail the information directly to EPA. Any claims of confidentiality for federal purposes will be determined by EPA.

TAPCR 1200-03-09-.02(11)(e)1(vi)(V)

- A7. Severability clause.** The requirements of this permit are severable. A dispute regarding one or more requirements of this permit does not invalidate or otherwise excuse the permittee from their duty to comply with the remaining portion of the permit.

TAPCR 1200-03-09.02(11)(e)1(v)

A8. Fee payment.

(a) The permittee shall pay an annual Title V fee in accordance with TAPCR 1200-03-26-.02(9) based upon the applicable base fee; the applicable permit modification fee(s); the responsible official's choice of actual emissions, allowable emissions, or a combination of actual and allowable emissions; and on the responsible official's choice of annual accounting period. An emission cap of 4,000 tons per year per regulated pollutant per major source SIC Code shall apply to actual or allowable based emission fees. A Title V annual emission fee will not be charged for emissions in excess of the cap. Title V annual emission fees will not be charged for carbon monoxide or for greenhouse gas pollutants solely because they are greenhouse gases.

(b) Title V sources shall pay allowable based emission fees until the beginning of the next annual accounting period following receipt of their initial Title V operating permit. At that time, the permittee shall begin paying their Title V fee based upon the applicable base fee; the applicable permit modification fee(s); and their choice of actual or allowable based fees, or mixed actual and allowable based fees. Once permitted, the Responsible Official may revise their existing fee choice by submitting a written request to the Division no later than December 31 of the annual accounting period for which the fee is due.

(c) When paying annual Title V emission fees, the permittee shall comply with all provisions of TAPCR Rule 1200-03-26-.02 and paragraph 1200-03-09-.02(11) applicable to such fees.

(d) Where more than one allowable emission limit is applicable to a regulated pollutant, the allowable emissions for the regulated pollutants shall not be double counted. Major sources subject to the provisions of TAPCR paragraph 1200-03-26-.02(9) shall apportion their emissions as follows to ensure that their fees are not double counted.

1. Emissions of hazardous air pollutants (HAP) that are included in the particulate matter (including PM₁₀) category or the volatile organic compound category shall be included in those categories.

2. HAP that are not included in either the particulate matter category or volatile organic compound category shall be included in the category of Hazardous Air Pollutants Not Included Above.

3. Each individual HAP is subject to the 4,000 ton cap provisions of TAPCR subparagraph 1200-03-26-.02(2)(i).

4. Major sources that wish to pay annual emission fees for PM₁₀ on an allowable emission basis may do so if they have a specific PM₁₀ allowable emission standard. If a major source has a total particulate emission standard, but wishes to pay annual emission fees on an actual PM₁₀ emission basis, it may do so if the PM₁₀ actual emission levels are proven to the satisfaction of the Technical Secretary. The method to demonstrate the actual PM₁₀ emission levels must be made as part of the source's major source operating permit in advance in order to exercise this option. The PM₁₀ emissions reported under these options shall not be subject to fees under the family of particulate emissions. The 4,000 ton cap provisions of TAPCR subparagraph 1200-03-26-.02(2)(i) shall also apply to PM₁₀ emissions.

(e) Emissions of pollutants that do not fall in one of the listed categories shall be included in the category of Miscellaneous Pollutants Not Listed Above. Each miscellaneous pollutant is subject to the 4,000-ton cap provisions.

TAPCR 1200-03-26-.02 and 1200-03-09-.02(11)(e)1(vii)

- A9. Permit revision not required.** A permit revision will not be required under any approved economic incentives, marketable permits, emissions trading and other similar programs or process for changes that are provided for in the permit.

TAPCR 1200-03-09-.02(11)(e)1(viii)

- A10. Inspection and entry.** Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Technical Secretary or an authorized representative to perform the following for the purposes of determining compliance with the permit applicable requirements:

(a) Enter upon, at reasonable times, the permittee's premises where a source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;

(b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;

(c) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and

(d) As authorized by the Clean Air Act and Chapter 1200-03-10 of the TAPCR, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit or applicable requirements.

(e) "Reasonable times" shall be considered to be customary business hours unless reasonable cause exists to suspect noncompliance with the Act, TAPCR Division 1200-03 or any permit issued pursuant thereto and the Technical Secretary specifically authorizes an inspector to inspect a facility at any other time.

TAPCR 1200-03-09-.02(11)(e)3(ii)

A11. Permit shield.

(a) Compliance with the conditions of this permit shall be deemed compliance with all applicable requirements as of the date of permit issuance, provided that:

1. Such applicable requirements are included and are specifically identified in the permit; or
2. The Technical Secretary, in acting on the permit application or revision, determines in writing that other requirements specifically identified are not applicable to the source, and the permit includes the determination or a concise summary thereof.

(b) Nothing in this permit shall alter or affect the following:

1. The provisions of section 303 of the Federal Act (emergency orders), including the authority of the Administrator under that section. Similarly, the provisions of T.C.A. §68201-109 (emergency orders) including the authority of the Governor under the section;
2. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;
3. The applicable requirements of the acid rain program, consistent with section 408(a) of the Federal Act; or
4. The ability of EPA to obtain information from a source pursuant to section 114 of the Federal Act.

(c) Permit shield is granted to the permittee.

(d) The permit shield does not apply to permit changes made under the minor permit modification procedures of TAPCR subpart 1200-03-09-.02(11)(f)5(ii) nor the administrative permit amendment procedures of TAPCR part 1200-03-09-.02(11)(f)4, except that the permit shield may be extended for administrative permit amendments that meet the relevant requirements of TAPCR subparagraph 1200-03-09-.02(11)(e), subparagraph 1200-03-09-.02(11)(f) and subparagraph 1200-03-09-.02(11)(g) for significant permit modifications.

(e) The permit shield does not apply to off-permit changes made under the operational flexibility provisions of TAPCR part 1200-03-09-.02(11)(a)4.

TAPCR 1200-03-09-.02(11)(e)6 and 1200-03-09-.02(11)(f)4(iv)

A12. Permit renewal and expiration.

(a) An application for permit renewal must be submitted at least 180 days, but no more than 270 days, prior to the expiration of this permit. Permit expiration terminates the source's right to operate unless a timely and complete renewal application has been submitted.

(b) If the permittee submits a timely and complete application for permit renewal the source will not be considered to be operating without a permit until the Technical Secretary takes final action on the permit application, except as otherwise noted in TAPCR paragraph 1200-03-09-.02(11).

(c) This permit, its shield provided in Condition A11, and its conditions will be extended and effective after its expiration date provided that the source has submitted a timely, complete renewal application to the Technical Secretary.

TAPCR 1200-03-09-.02(11)(f)2 and 3, 1200-03-09-.02(11)(d)1(i)(III), and 1200-03-09-.02(11)(a)2

A13. Reopening for cause.

(a) A permit shall be reopened and revised prior to the expiration of the permit under any of the circumstances listed below:

1. Additional applicable requirements under the Federal Act become applicable to the sources contained in this permit provided the permit has a remaining term of 3 or more years. Such a reopening shall be completed not later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the permit expiration date of this permit, unless the original has been extended pursuant to TAPCR part 1200-03-09-.02(11)(a)2.
2. Additional requirements become applicable to an affected source under the acid rain program.
3. The Technical Secretary or EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.
4. The Technical Secretary or EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements.

(b) Proceedings to reopen and issue a permit shall follow the same proceedings as apply to initial permit issuance and shall affect only those parts of the permit for which cause to reopen exists, and not the entire permit. Such reopening shall be made as expeditiously as practicable.

(c) Reopenings for cause shall not be initiated before a notice of such intent is provided to the permittee by the Technical Secretary at least 30 days in advance of the date that the permit is to be reopened except that the Technical Secretary may provide a shorter time period in the case of an emergency. An emergency shall be established by the criteria of T.C.A. 68201109 or other compelling reasons that public welfare is being adversely affected by the operation of a source that is in compliance with its permit requirements.

(d) If the Administrator finds that cause exists to terminate, modify, or revoke and reissue a permit as identified in A13, he is required under federal rules to notify the Technical Secretary and the permittee of such findings in writing. Upon receipt of such notification, the Technical Secretary shall investigate the matter in order to determine if he agrees or disagrees with the Administrator's findings. If he agrees with the Administrator's findings, the Technical Secretary shall conduct the reopening in the following manner:

1. The Technical Secretary shall, within 90 days after receipt of such notification, forward to EPA a proposed determination of termination, modification, or revocation and reissuance, as appropriate. If the Administrator grants additional time to secure permit applications or additional information from the permittee, the Technical Secretary shall have the additional time period added to the standard 90-day time period.
2. EPA will evaluate the Technical Secretary's proposed revisions and respond as to their evaluation.
3. If EPA agrees with the proposed revisions, the Technical Secretary shall proceed with the reopening in the same manner prescribed under Condition A13(b) and Condition A13(c).
4. If the Technical Secretary disagrees with either the findings or the Administrator that a permit should be reopened or an objection of the Administrator to a proposed revision to a permit submitted pursuant to Condition A13(d), he shall bring the matter to the Board at its next regularly scheduled meeting for instructions as to how he should proceed. The permittee shall be required to file a written brief expressing their position relative to the Administrator's objection and have a responsible official present at the meeting to answer questions for the Board. If the Board agrees that EPA is wrong in their demand for a permit revision, they shall instruct the Technical Secretary to conform to EPA's demand, but to issue the permit under protest preserving all rights available for litigation against EPA.

TAPCR 1200-03-09-.02(11)(f)6 and 7

A14. Permit transference. An administrative permit amendment allows for a change of ownership or operational control of a source where the Technical Secretary determines that no other change in the permit is necessary, provided that the following requirements are met:

- (a) Transfer of ownership permit application is filed consistent with the provisions of TAPCR paragraph 1200-03-09-.03(6), and
- (b) written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to the Technical Secretary.

TAPCR 1200-03-09-.02(11)(f)4(i)(IV) and 1200-03-09-.03(6)

A15. Air pollution alert. When the Technical Secretary has declared that an air pollution alert, an air pollution warning, or an air pollution emergency exists, the permittee must follow the requirements for that episode level as outlined in TAPCR paragraph 1200-03-09-.03(1) and TAPCR Rule 1200-03-15-.03.

A16. Construction permit required. Except as exempted in TAPCR Rule 1200-03-09-.04, or excluded in TAPCR subparagraph 1200-03-02-.01(1)(aa) or TAPCR subparagraph 1200-03-02-.01(1)(cc), this facility shall not begin the construction of a new air contaminant source or the modification of an air contaminant source which may result in the discharge of air contaminants without first having applied for and received from the Technical Secretary a construction permit for the construction or modification of such air contaminant source.

TAPCR 1200-03-09-.01(1)(a)

- A17. Notification of changes.** The permittee shall notify the Technical Secretary 30 days prior to commencement of any of the following changes to an air contaminant source which would not be a modification requiring a construction permit.
- (a) change in air pollution control equipment
 - (b) change in stack height or diameter
 - (c) change in exit velocity of more than 25 percent or exit temperature of more than 15 percent based on absolute temperature.

TAPCR 1200-03-09-.02(7)

- A18. Schedule of compliance.** The permittee will comply with any applicable requirement that becomes effective during the permit term on a timely basis and no later than required by the provisions of the new applicable requirement. If the permittee is not in compliance the permittee must submit a schedule for coming into compliance which must include a schedule of remedial measure(s), including an enforceable set of deadlines for specific actions.

TAPCR 1200-03-09-.02(11)(d)3, 1200-03-09-.03(8), 0400-30-38, 0400-30-39, and 40 CFR Part 70.5(c)

- A19. Title VI.**

(a) The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR, Part 82, Subpart F, except as provided for motor vehicle air conditioners (MVACs) in Subpart B:

1. Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to Section 82.156.
2. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to Section 82.158.
3. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to Section 82.161.

(b) If the permittee performs a service on motor (fleet) vehicles when this service involves ozone depleting substance refrigerant in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 CFR, Part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners.

(c) The permittee shall be allowed to switch from any ozone-depleting substance to any alternative that is listed in the Significant New Alternatives Program (SNAP) promulgated pursuant to 40 CFR, Part 82, Subpart G, Significant New Alternatives Policy Program.

TAPCR 1200-03-09-.03(8)

- A20. 112(r).** Sources which are subject to the provisions of Section 112(r) of the federal Clean Air Act or any federal regulations promulgated thereunder, shall annually certify in writing to the Technical Secretary that they are properly following their risk management plan. The annual certification is due in the office of the Technical Secretary no later than January 31 of each year. Said certification will be for the preceding calendar year.

TAPCR 1200-03-32-.03(3)

SECTION B

GENERAL CONDITIONS for MONITORING, REPORTING, and ENFORCEMENT

- B1. Recordkeeping.** Monitoring and related record keeping shall be performed in accordance with the requirements specified in the permit conditions for each individual permit unit. In no case shall reports of any required monitoring and record keeping be submitted less frequently than every six months.
- (a) Where applicable, records of required monitoring information include the following:
1. The date, place as defined in the permit, and time of sampling or measurements;
 2. The date(s) analyses were performed;
 3. The company or entity that performed the analysis;
 4. The analytical techniques or methods used;
 5. The results of such analyses; and
 6. The operating conditions as existing at the time of sampling or measurement.
- (b) Digital data accumulation which utilizes valid data compression techniques shall be acceptable for compliance determination as long as such compression does not violate an applicable requirement and its use has been approved in advance by the Technical Secretary.

TAPCR 1200-03-09-.02(11)(e)1(iii)

- B2. Retention of monitoring data.** The permittee shall retain records of all required monitoring data and support information for a period of at least 5 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 for continuous monitoring instrumentation, and copies of all reports required by the permit.

TAPCR 1200-03-09-.02(11)(e)1(iii)(II)II

- B3. Reporting.** Reports of any required monitoring and record keeping shall be submitted to the Technical Secretary in accordance with the frequencies specified in the permit conditions for each individual permit unit. Reports shall be submitted within 60 days of the close of the reporting period unless otherwise noted. All instances of deviations from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official. Reports required under "State only requirements" are not required to be certified by a responsible official.

TAPCR 1200-03-09-.02(11)(e)1(iii)

- B4. Certification.** Except for reports required under "State Only" requirements, any application form, report or compliance certification submitted pursuant to the requirements of this permit shall contain certification by a responsible official of truth, accuracy and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.

TAPCR 1200-03-09-.02(11)(d)4

- B5. Annual compliance certification.** The permittee shall submit annually compliance certifications with terms and conditions contained in Sections A, B, D and E of this permit, including emission limitations, standards, or work practices. This compliance certification shall include all of the following (provided that the identification of applicable information may cross-reference the permit or previous reports, as applicable):

- (a) The identification of each term or condition of the permit that is the basis of the certification;
- (b) The identification of the method(s) or other means used by the owner or operator for determining the compliance status with each term and condition during the certification period; such methods and other means shall include, at a minimum, the methods and means required by this permit. If necessary, the owner or operator also shall identify any other material information that must be included in the certification to comply with section 113(c)(2) of the Federal Act, which prohibits knowingly making a false certification or omitting material information;
- (c) The status of compliance with the terms and conditions of the permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent. The certification shall be based on the method or means designated in B5(b) above. The certification shall identify each deviation and take it into account in the compliance

certification. The certification shall also identify as possible exceptions to compliance any periods during which compliance is required and in which an excursion* or exceedance** as defined below occurred; and

(d) Such other facts as the Technical Secretary may require to determine the compliance status of the source.

* "Excursion" shall mean a departure from an indicator range established for monitoring under this paragraph, consistent with any averaging period specified for averaging the results of the monitoring.

** "Exceedance" shall mean a condition that is detected by monitoring that provides data in terms of an emission limitation or standard and that indicates that emissions (or opacity) are greater than the applicable emission limitation or standard (or less than the applicable standard in the case of a percent reduction requirement) consistent with any averaging period specified for averaging the results of the monitoring.

40 CFR Part 70.6(c)(5)(iii) as amended in the Federal Register Vol. 79, No.144, July 28, 2014, pages 43661 through 43667

B6. Submission of compliance certification. The compliance certification shall be submitted to:

The Tennessee Department of Environment and Conservation Environmental Field Office specified in Section E of this permit	and	U.S. EPA Compliance and Emissions Data Reporting Interface (CEDRI) or Air Enforcement Branch US EPA Region IV EPA_R4_CAA_Reports@epa.gov
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TAPCR 1200-03-09-.02(11)(e)3(v)(IV)

B7. Emergency provisions. An emergency constitutes an affirmative defense to an enforcement action brought against this source for noncompliance with a technology-based emission limitation due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

(a) The affirmative defense of the emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An emergency occurred and that the permittee can identify the probable cause(s) of the emergency. "Probable" must be supported by a credible investigation into the incident that seeks to identify the causes and results in an explanation supported by generally accepted engineering or scientific principles.

2. The permitted source was at the time being properly operated. In determining whether or not a source was being properly operated, the Technical Secretary shall examine the source's written standard operating procedures which were in effect at the time of the noncompliance and any other code as detailed below that would be relevant to preventing the noncompliance. Adherence to the source's standard operating procedures will be the test of adequate preventative maintenance, careless operation, improper operation or operator error to the extent that such adherence would prevent noncompliance. The source's failure to follow recognized standards of practice to the extent that adherence to such a standard would have prevented noncompliance will disqualify the source from any claim of an emergency and an affirmative defense.

3. During the period of the emergency, the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit.

4. The permittee submitted notice of the emergency to the Technical Secretary according to the notification criteria for malfunctions in TAPCR Rule 12000320.03. For the purposes of this condition, "emergency" shall be substituted for "malfunction(s)" in TAPCR Rule 12000320.03 to determine the relevant notification threshold. The notice shall include a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

(b) In any enforcement proceeding the permittee seeking to establish the occurrence of an emergency has the burden of proof.

(c) The provisions of this condition are in addition to any emergency, malfunction or upset requirement contained in TAPCR Divisions 1200-03 and 0400-30 or other applicable requirement.

TAPCR 1200-03-09-.02(11)(e)7

B8. Excess emissions reporting.

(a) The permittee shall promptly notify the Technical Secretary when any emission source, air pollution control equipment, or related facility breaks down in such a manner to cause the emission of air contaminants in excess of the applicable emission standards contained in TAPCR Division 1200-03 or any permit issued thereto, or of sufficient duration to cause damage to property or public health. The permittee must provide the Technical Secretary with a statement giving all pertinent facts, including the estimated duration of the breakdown, the probable cause of the deviation, and any corrective actions or

preventative measures taken. Violations of the visible emission standard which occur for less than 20 minutes in one day (midnight to midnight) need not be reported. Prompt notification will be within 24 hours of the malfunction and shall be provided by telephone to the Division's Nashville office. The Technical Secretary shall be notified when the condition causing the failure or breakdown has been corrected. In attainment and unclassified areas if emissions other than from sources designated as significantly impacting on a nonattainment area in excess of the standards will not and do not occur over more than a 24-hour period (or will not recur over more than a 24-hour period) and no damage to property and or public health is anticipated, notification is not required.

(b) Any malfunction that creates an imminent hazard to health must be reported by telephone immediately to the Division's Nashville office at (615) 532-0554 and to the State Civil Defense.

(c) A log of all malfunctions, startups, and shutdowns resulting in emissions in excess of the standards in TAPCR Division 1200-03 or any permit issued thereto must be kept at the plant. All information shall be entered in the log no later than twenty-four (24) hours after the startup or shutdown is complete, or the malfunction has ceased or has been corrected. Any later discovered corrections can be added in the log as footnotes with the reason given for the change. This log must record at least the following:

1. Stack or emission point involved
2. Time malfunction, startup, or shutdown began and/or when first noticed
3. Type of malfunction and/or reason for shutdown
4. Time startup or shutdown was complete or time the air contaminant source returned to normal operation
5. The company employee making entry on the log must sign, date, and indicate the time of each log entry

The information under items 1. and 2. must be entered into the log by the end of the shift during which the malfunction or startup began. For any source utilizing continuous emission(s) monitoring, continuous emission(s) monitoring collection satisfies the above log keeping requirement.

TAPCR 1200-03-20-.03 and .04

B9. Malfunctions, startups and shutdowns - reasonable measures required. The permittee must take all reasonable measures to keep emissions to a minimum during startups, shutdowns, and malfunctions. These measures may include installation and use of alternate control systems, changes in operating methods or procedures, cessation of operation until the process equipment and/or air pollution control equipment is repaired, maintaining sufficient spare parts, use of overtime labor, use of outside consultants and contractors, and other appropriate means. Failures that are caused by poor maintenance, careless operation or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions. This provision does not apply to standards found in 40 CFR, Parts 60(Standards of performance for new stationary sources), 61(National emission standards for hazardous air pollutants) and 63(National emission standards for hazardous air pollutants for source categories).

TAPCR 1200-03-20-.02

B10. Reserved.

B11. Report required upon the issuance of a notice of violation for excess emissions. The permittee must submit, within twenty days after receipt of the notice of violation, the data required below. If this data has been made available to the Technical Secretary prior to the issuance of the notice of violation no further action is required of the violating source. However, if the source desires to submit additional information, then this must be submitted within the same 20-day time period. The minimum data requirements are:

- (a) The identity of the stack and/or other emission point where the excess emission(s) occurred;
 - (b) The magnitude of the excess emissions expressed in pounds per hour and the units of the applicable emission limitation(s) and the operating data and calculations used in determining the magnitude of the excess emissions;
 - (c) The time and duration of the emissions;
 - (d) The nature and cause of such emissions;
 - (e) For malfunctions, the steps taken to correct the situation and the action taken or planned to prevent the recurrence of such malfunctions;
 - (f) The steps taken to limit the excess emissions during the occurrence reported, and
 - (g) If applicable, documentation that the air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good operating practices for minimizing emissions.
- Failure to submit the required report within the 20-day period specified shall preclude the admissibility of the data for determination of potential enforcement action.

TAPCR 1200-03-20-.06(2), (3) and (4)

SECTION C

PERMIT CHANGES

- C1. Operational flexibility changes.** The source may make operational flexibility changes that are not addressed or prohibited by the permit without a permit revision subject to the following requirements:
- (a) The change cannot be subject to a requirement of Title IV of the Federal Act or TAPCR Chapter 1200-03-30.
 - (b) The change cannot be a modification under any provision of Title I of the federal Act or TAPCR Division 1200-03.
 - (c) Each change shall meet all applicable requirements and shall not violate any existing permit term or condition.
 - (d) The source must provide contemporaneous written notice to the Technical Secretary and EPA of each such change, except for changes that are below the threshold of levels that are specified in TAPCR Rule 1200-03-09-.04.
 - (e) Each change shall be described in the notice including the date, any change in emissions, pollutants emitted, and any applicable requirements that would apply as a result of the change.
 - (f) The change shall not qualify for a permit shield under the provisions of TAPCR part 1200-03-09-.02(11)(e)6.
 - (g) The permittee shall keep a record describing the changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from those changes. The records shall be retained until the changes are incorporated into subsequently issued permits.

TAPCR 1200-03-09-.02(11)(a)4(ii)

- C2. Section 502(b)(10) changes.**
- (a) The permittee can make certain changes without requiring a permit revision, if the changes are not modifications under Title I of the Federal Act or TAPCR Division 1200-03 and the changes do not exceed the emissions allowable under the permit. The permittee must, however, provide the Administrator and Technical Secretary with written notification within a minimum of 7 days in advance of the proposed changes. The Technical Secretary may waive the 7-day advance notice in instances where the source demonstrates in writing that an emergency necessitates the change. Emergency shall be demonstrated by the criteria of TAPCR part 1200-03-09-.02(11)(e)7 and in no way shall it include changes solely to take advantages of an unforeseen business opportunity. The Technical Secretary and EPA shall attach each such notice to their copy of the relevant permit.
 - (b) The written notification must be signed by a facility Title V responsible official and include the following:
 - 1. a brief description of the change within the permitted facility;
 - 2. the date on which the change will occur;
 - 3. a declaration and quantification of any change in emissions;
 - 4. a declaration of any permit term or condition that is no longer applicable as a result of the change; and
 - 5. a declaration that the requested change is not a Title I modification and will not exceed allowable emissions under the permit.
 - (c) The permit shield provisions of TAPCR part 1200-03-09-.02(11)(e)6 shall not apply to Section 502(b)(10) changes.

TAPCR 1200-03-09-.02(11)(a)4(i)

- C3. Administrative amendment.**
- (a) Administrative permit amendments to this permit shall be in accordance with TAPCR part 1200-03-09-.02(11)(f)4. The source may implement the changes addressed in the request for an administrative amendment immediately upon submittal of the request.
 - (b) The permit shield shall be extended as part of an administrative permit amendment revision consistent with the provisions of TAPCR part 120003-09.02(11)(e)6 for such revisions made pursuant to item (c) of this condition which meet the relevant requirements of TAPCR subparagraph 120003-09.02(11)(e), TAPCR subparagraph 120003-09.02(11)(f) and TAPCR subparagraph 120003-09.02(11)(g) for significant permit modifications.
 - (c) Proceedings to review and grant administrative permit amendments shall be limited to only those parts of the permit for which cause to amend exists, and not the entire permit.

TAPCR 1200-03-09-.02(11)(f)4

C4. Minor permit modifications.

- (a) The permittee may submit an application for a minor permit modification in accordance with TAPCR subpart 1200-03-09-.02(11)(f)5(ii).
- (b) The permittee may make the change proposed in its minor permit modification immediately after an application is filed with the Technical Secretary.
- (c) Proceedings to review and modify permits shall be limited to only those parts of the permit for which cause to modify exists, and not the entire permit.
- (d) Minor permit modifications do not qualify for a permit shield.

TAPCR 1200-03-09-.02(11)(f)5(ii)

C5. Significant permit modifications.

- (a) The permittee may submit an application for a significant modification in accordance with TAPCR subpart 1200-03-09-.02(11)(f)5(iv).
- (b) Proceedings to review and modify permits shall be limited to only those parts of the permit for which cause to modify exists, and not the entire permit.

TAPCR 1200-03-09-.02(11)(f)5(iv)

C6. New construction or modifications.

Future construction at this facility that is subject to the provisions of TAPCR Rule 1200-03-09-.01 shall be governed by the following:

- (a) The permittee shall designate in their construction permit application the route that they desire to follow for the purposes of incorporating the newly constructed or modified sources into their existing operating permit. The Technical Secretary shall use that information to prepare the operating permit application submittal deadlines in their construction permit.
- (b) Sources desiring the permit shield shall choose the administrative amendment route of TAPCR part 120003-09.02(11)(f)4 or the significant modification route of TAPCR subpart 1200-03-09-.02(11)(f)5(iv).
- (c) Sources desiring expediency instead of the permit shield shall choose the minor permit modification procedure route of TAPCR subpart 1200-03-09-.02(11)(f)5(ii) or group processing of minor modifications under the provisions of TAPCR subpart 1200-03-09-.02(11)(f)5(iii) as applicable to the magnitude of their construction.

TAPCR 1200-03-09-.02(11)(d)1(i)(V)

SECTION D

GENERAL APPLICABLE REQUIREMENTS

D1. Visible emissions.

(a) With the exception of air emission sources exempt from the requirements of TAPCR Chapter 1200-03-05 and air emission sources for which a different opacity standard is specifically provided elsewhere in this permit, the permittee shall not cause, suffer, allow or permit discharge of a visible emission from any air contaminant source with an opacity in excess of twenty (20) percent for an aggregate of more than five (5) minutes in any one (1) hour or more than 20 minutes in any twenty-four (24) hour period; provided, however, that for fuel burning installations with fuel burning equipment of input capacity greater than 600 million btu per hour, the permittee shall not cause, suffer, allow, or permit discharge of a visible emission from any fuel burning installation with an opacity in excess of 20 percent (6-minute average) except for one six minute period per one hour of not more than 40 percent opacity. Sources constructed or modified after July 7, 1992, shall utilize 6-minute averaging.

(b) Consistent with the requirements of TAPCR Chapter 1200-03-20, due allowance may be made for visible emissions in excess of that permitted under TAPCR Chapter 1200-03-05 which are necessary or unavoidable due to routine startup and shutdown conditions. The facility shall maintain a continuous, current log of all excess visible emissions showing the time at which such conditions began and ended and that such record shall be available to the Technical Secretary or an authorized representative upon request.

TAPCR 1200-03-05-.01(1), TAPCR 1200-03-05-.03(6) and TAPCR 1200-03-05-.02(1)

D2. General provisions and applicability for non-process gaseous emissions. Any person constructing or otherwise establishing a nonportable air contaminant source emitting gaseous air contaminants after April 3, 1972, or relocating an air contaminant source more than 1.0 km from the previous position after November 6, 1988, shall install and utilize the best equipment and technology currently available for controlling such gaseous emissions.

TAPCR 1200-03-06-.03(2)

D3. Non-process emission standards. The permittee shall not cause, suffer, allow, or permit particulate emissions from non-process sources in excess of the standards in TAPCR Chapter 1200-03-06.**D4. General provisions and applicability for process gaseous emissions.** Any person constructing or otherwise establishing an air contaminant source emitting gaseous air contaminants after April 3, 1972, or relocating an air contaminant source more than 1.0 km from the previous position after November 6, 1988, shall install and utilize equipment and technology which is deemed reasonable and proper by the Technical Secretary.

TAPCR 1200-03-07-.07(2)

D5. Particulate emissions from process emission sources. The permittee shall not cause, suffer, allow, or permit particulate emissions from process sources in excess of the standards in TAPCR part 1200-03-07.**D6. Sulfur dioxide emission standards.** The permittee shall not cause, suffer, allow, or permit sulfur dioxide emissions from process and non-process sources in excess of the standards in TAPCR Chapter 1200-03-14. Regardless of the specific emission standard, new process sources shall utilize the best available control technology as deemed appropriate by the Technical Secretary of the Tennessee Air Pollution Control Board.**D7. Fugitive Dust.**

(a) The permittee shall not cause, suffer, allow, or permit any materials to be handled, transported, or stored; or a building, its appurtenances, or a road to be used, constructed, altered, repaired, or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne. Such reasonable precautions shall include, but not be limited to, the following:

1. Use, where possible, of water or chemicals for control of dust in demolition of existing buildings or structures, construction operations, grading of roads, or the clearing of land;
2. Application of asphalt, water, or suitable chemicals on dirt roads, material stockpiles, and other surfaces which can create airborne dusts;

3. Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials. Adequate containment methods shall be employed during sandblasting or other similar operations.

(b) The permittee shall not cause, suffer, allow, or permit fugitive dust to be emitted in such manner to exceed five (5) minutes per hour or 20 minutes per day as to produce a visible emission beyond the property line of the property on which the emission originates, excluding malfunction of equipment as provided in TAPCR Chapter 1200-03-20.

TAPCR 1200-03-08

D8. Open burning. The permittee shall comply with the TAPCR Chapter 1200-03-04 for all open burning activities at the facility.

TAPCR 1200-03-04

D9. Asbestos. Where applicable, the permittee shall comply with the requirements of 40 CFR Part 61 when conducting any renovation or demolition activities at the facility.

TAPCR 0400-30-38-.01(2) and 40 CFR, Part 61

D10. Annual certification of compliance. The generally applicable requirements set forth in Section D of this permit are intended to apply to activities and sources that are insignificant emission units or activities. By annual certification of compliance with the conditions in this Section the permittee shall be considered to meet the monitoring and related record keeping and reporting requirements of TAPCR subpart 1200-03-09-.02(11)(e)1(iii) and part 1200-03-10-.04(2)(b)1 and the compliance requirements of TAPCR subpart 1200-03-09-.02(11)(e)3(i). The permittee shall submit compliance certification for these conditions annually.

D11. Emission Standards for Hazardous Air Pollutants. The permittee shall comply with all applicable requirements of TAPCR Chapter 0400-30-38 for all emission sources subject to a requirement contained therein.

D12. Standards of Performance for New Stationary Sources. The permittee shall comply with all applicable requirements of TAPCR chapter 0400-30-39 for all emission sources subject to a requirement contained therein.

D13. Gasoline Dispensing Facilities. The permittee shall comply with all applicable requirements of TAPCR Rule 1200-03-18-.24 for all emission sources subject to a requirement contained therein.

D14. Internal Combustion Engines.

- (a) All stationary reciprocating internal combustion engines, including engines deemed insignificant activities and insignificant emission units, shall comply with the applicable provisions of TAPCR Rule 0400-30-38-.01.
- (b) All stationary compression ignition internal combustion engines, including engines deemed insignificant activities and insignificant emission units, shall comply with the applicable provisions of TAPCR Chapter 0400-30-39.
- (c) All stationary spark ignition internal combustion engines, including engines deemed insignificant activities and insignificant emission units, shall comply with the applicable provisions of TAPCR Chapter 0400-30-39.

TAPCR 0400-30-38 and 39

D15. Duty to Maintain/Repair

The permittee shall maintain and repair each emission source, associated air pollution control device(s), and compliance assurance monitoring equipment as required to maintain and assure compliance with the specified emission limits.

TAPCR 1200-03-09-.03(8)

SECTION E**SOURCE SPECIFIC EMISSION STANDARDS, OPERATING LIMITATIONS, and MONITORING, RECORDKEEPING and REPORTING REQUIREMENTS**

83-0008	Facility Description:	01: Twenty-Two lean-burn reciprocating natural gas fired engines including nine 1100 Hp (14.57 MMBTU/hr) Cooper Bessemer GMV-10H engines, 1A through 9A, six 1350 Hp (14.34 MMBTU/hr) Cooper Bessemer GMV-10HS engines, 1C through 6C, two 2000 Hp (18.41 MMBTU/hr) Cooper Bessemer GMW-8 engines, 7C through 8C, two 3400 Hp (28.51 MMBTU/hr) Cooper Bessemer GMWC-10 engines, 1D and 2D, one 5500 Hp (49.89 MMBTU/hr) Cooper-Bessemer 16V-250 engine, 3D, two 7700 Hp (58.93 MMBTU/hr) Wartsila W18V34-SGD-C engines, 1E and 2E. 02: Two natural gas fired emergency generator engines including one 1,081 Hp Caterpillar G3516, and one 110 Hp Cummins/Onan 35GGFB. 03: Two natural gas water heaters; 4 MMBtu/hr, 4.5 MMBtu/hr and two natural gas water evaporators; 0.75 MMBtu/hr and 0.395 MMBtu/hr.
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Conditions E1 through E3-14 apply to all sources in Section E of this permit unless otherwise noted.

E1. Fee payment**FEE EMISSIONS SUMMARY TABLE FOR MAJOR SOURCE 83-0008**

REGULATED POLLUTANTS	ALLOWABLE EMISSIONS (tons per AAP)	ACTUAL EMISSIONS (tons per AAP)	COMMENTS
PARTICULATE MATTER (PM)	81.68	AEAR	Includes all fee emissions.
SO ₂	29.91	AEAR	Includes all fee emissions.
VOC	251.22	AEAR	Includes all fee emissions.
NO _x	4423.29	AEAR	Includes all fee emissions.
Facility-Wide Total HAP Limit	N/A	AEAR	N/A
Facility-Wide Individual HAP Limit	N/A	AEAR	N/A
HAZARDOUS AIR POLLUTANTS (HAPs) NOT INCLUDED ABOVE*			
N/A	N/A	AEAR	N/A
N/A	N/A	AEAR	N/A
N/A	N/A	AEAR	N/A
MISCELLANEOUS POLLUTANTS NOT LISTED ABOVE**			
EACH MISC POLLUTANT NOT LISTED ABOVE			
N/A	N/A	AEAR	N/A
N/A	N/A	AEAR	N/A
N/A	N/A	AEAR	N/A
N/A	N/A	AEAR	N/A

NOTES

AAP The Annual Accounting Period (AAP) is a 12 consecutive month period that either (a) begins each July 1st and ends June 30th of the following year when fees are paid on a fiscal year basis, or (b) begins January 1st and ends December 31st of the same year when paying on a calendar year basis. The AAP at the time of permit renewal issuance began July 1, 2026 and ends June 30, 2027. The next AAP begins July 1, 2027 and ends June 30, 2028 unless a request to change the annual accounting period is submitted by the responsible official as required by subparagraph 1200-03-26-.02(9)(b) of the TAPCR and approved by the Technical Secretary. If the permittee wishes to revise their annual accounting period or their annual emission fee basis as allowed by subparagraph 1200-03-26-

.02(9)(b) of the TAPCR, the responsible official must submit the request to the Division in writing on or before December 31 of the annual accounting period for which the fee is due. If a change in fee basis from allowable emissions to actual emissions for any pollutant is requested, the request from the responsible official must include the methods that will be used to determine actual emissions. **Changes in fee bases must be made using the Title V Fee Selection form, form number APC 36 (CN-1583), included as an attachment to this permit and available on the Division of Air Pollution Control's website.**

N/A N/A indicates that no emissions are specified for fee computation.

AEAR If the permittee is paying annual emission fees on an actual emissions basis, **AEAR** indicates that an Actual Emissions Analysis is Required to determine the actual emissions of:

- (1) **each regulated pollutant** (Particulate matter [PM], SO₂, VOC, NO_x and so forth. See TAPCR 1200-03-26-.02(2)(i) for the definition of a regulated pollutant.),
- (2) the “**HAP Not Included Above**” Category (**non-VOC and non-PM HAP not included in a facility-wide limit**), and
- (3) the **Miscellaneous Category**

under consideration during the **Annual Accounting Period**.

* **Hazardous Air Pollutants Not Included Above:** This category is made-up of hazardous air pollutants that are not included in the VOC or PM category, such as HCl and HF, and are not included in a facility-wide HAP emission limitation. **For fee computation**, each individual hazardous air pollutant is subject to the 4,000-ton cap provisions of subparagraph 1200-03-26-.02(2)(i) of the TAPCR.

** **Miscellaneous Pollutants Not Listed Above:** This category is for pollutants that are not included in one of the other categories but for which an emission limitation has been established in this permit (including NSPS pollutants). **For fee computation**, each pollutant in this category is subject to the 4,000-ton cap provisions of subparagraph 1200-03-26-.02(2)(i).

END NOTES

- The permittee shall:**
- (1) Pay Title V **annual fees** (including the emissions fee, base fee, significant modification fee, & minor modification fee), on the emissions and year bases requested by the responsible official and approved by the Technical Secretary, for each annual accounting period (AAP) by the payment deadline(s) established in TAPCR 1200-03-26-.02(9)(a). Fees may be paid on an **actual**, **allowable**, or **mixed** emissions basis, and on either a **state fiscal year** or a **calendar year**, provided the requirements of TAPCR 1200-03-26-.02(9)(b) are met. If any part of any fee imposed under TAPCR 1200-03-26-.02 is not paid within 15 days of the due date, penalties shall at once accrue as specified in TAPCR 1200-03-26-.02(8).
 - (2) Sources paying annual fees on an allowable emissions basis: pay annual fees for each AAP no later than April 1 of each year pursuant to TAPCR 1200-03-26-.02(9)(d). TAPCR 1200-03-26-.02(9)(a)2(i)
 - (3) Sources paying annual fees on a calendar year basis and an actual or mixed emissions basis: pay annual allowable based emission fees for each AAP no later than April 1 of each year pursuant to TAPCR 1200-03-26-.02(9)(d), except as allowed by TAPCR 1200-03-26-.02(9)(g)3. TAPCR 1200-03-26-.02(9)(a)2(ii)
 - (4) Sources paying annual fees on a fiscal year basis and an actual or mixed emissions basis: for each AAP, pay an estimated 65% of the fee due no later than April 1 of the current fiscal year. The remainder of the fee for each annual accounting period is due no later than August 1 of each year pursuant to TAPCR 1200-03-26-.02(9)(d), except as allowed by TAPCR 1200-03-26-.02(9)(g)3. TAPCR 1200-03-26-.02(9)(a)2(iii)
 - (5) Sources paying annual fees on an actual emissions basis: prepare an **actual emissions analysis** for each AAP and pay **actual based emission fees** pursuant to TAPCR 1200-03-26-.02(9)(d). The **actual emissions analysis** shall include:

- (a) the completed **Fee Emissions Summary Table**,
 - (b) each **actual emissions analysis** required, and
 - (c) the actual emission records for each pollutant and each source as required for actual emission fee determination, or a summary of the actual emission records required for fee determination, as specified by the Technical Secretary or the Technical Secretary's representative. The summary must include sufficient information for the Technical Secretary to determine the accuracy of the calculations. These calculations must be based on the Fee Year basis approved by the Technical Secretary (a state fiscal year [July 1 through June 30] or a calendar year [January 1 through December 31]). These records shall be used to complete the **actual emissions analyses** required by the above **Fee Emissions Summary Table**.
- TAPCR 1200-03-26-.02(9)(g)2
- (6) Sources paying annual fees on a Fee Choice of a mixed emissions basis: for all pollutants and all sources for which the permittee has chosen an actual emissions basis, prepare an **actual emissions analysis** for each AAP and pay **actual based emission fees** pursuant to TAPCR 1200-03-26-.02(9)(d). The **actual emissions analysis** shall include:
 - (a) the completed **Fee Emissions Summary Table**,
 - (b) each **actual emissions analysis** required, and
 - (c) the actual emission records for each pollutant and each source as required for actual emission fee determination, or a summary of the actual emission records required for fee determination, as specified by the Technical Secretary or the Technical Secretary's representative. The summary must include sufficient information for the Technical Secretary to determine the accuracy of the calculations. These calculations must be based on the Fee Year basis approved by the Technical Secretary (a state fiscal year [July 1 through June 30] or a calendar year [January 1 through December 31]). These records shall be used to complete the **actual emissions analysis**.

For all pollutants and all sources for which the permittee has chosen an allowable emissions basis, pay allowable based emission fees pursuant to TAPCR 1200-03-26-.02(9)(d).

TAPCR 1200-03-26-.02(9)(g)2

 - (7) When paying on an actual or mixed emissions basis, submit the **actual emissions analyses** at the time the fees are paid in full or earlier.

TAPCR 1200-03-26-.02(9)(g)2

 - (8) Include with each required AEAR report the following statement signed by the Responsible Official: *"I have reviewed this document in its entirety, and to the best of my knowledge, based on information and belief formed after reasonable inquiry, the statements and information contained in this document are true, accurate, and complete."*

TAPCR 1200-03-09-.02(11)(d)4

The annual fee due dates are specified in TAPCR 1200-03-26-.02(9)(a) and are dependent on the Responsible Official's choice of fee bases as described above. If any part of any fee imposed under TAPCR 1200-03-26-.02 is not paid within 15 days of the due date, penalties shall at once accrue as specified in TAPCR 1200-03-26-.02(8). Emissions for regulated pollutants shall not be double counted as specified in Condition A8(d) of this permit.

Payment of the fee due and the actual emissions analysis (if required) shall be submitted to the Technical Secretary at the following address:

Payment of Fee to:

Tennessee Department of Environment and Conservation
Division of Fiscal Services
Consolidated Fee Section – APC
Davy Crockett Tower, 6th Floor
500 James Robertson Parkway
Nashville, Tennessee 37243

Actual Emissions Analyses to:

A "Title V Emissions Summary Form" and the AEAR must be submitted electronically as directed by the Division. Additional information can be found at <https://www.tn.gov/environment/air/inventory.html>

TAPCR 1200-03-26-.02(3), (8), and (9), and TAPCR 1200-03-09-.02(11)(e)1(vii)

E2. Reporting requirements.

- (a) **Semiannual reports.** Semiannual reports shall cover the six-month periods from **October** to **March** and **April** to **September** and shall be submitted within 60 days after the end of each six-month period. Subsequent reports shall be submitted within 60 days after the end of each 6-month period following the first report. The first semiannual report following issuance of this permit shall cover the following permits and reporting periods:

Permit Number	Reporting Period Begins	Reporting Period Ends
573045	April 1, 2026	day before new permit issuance (with year)
581660	Issuance Date of new permit (with year)	September 30, 2026

These semiannual reports shall include:

- (1) Any monitoring and recordkeeping required by **Condition E5-20** of this permit. However, a summary report of this data is acceptable provided there is sufficient information to enable the Technical Secretary to evaluate compliance.
- (2) The visible emission evaluation readings from **Condition E3-5** of this permit if required. However, a summary report of this data is acceptable provided there is sufficient information to enable the Technical Secretary to evaluate compliance.
- (3) Identification of all instances of deviations from **ALL PERMIT REQUIREMENTS**. The record of deviations/excursions shall include, at a minimum, the time the deviation/excursion was discovered, the corrective action taken, and the time that the deviation/excursion was rectified.

These reports must be certified by a responsible official consistent with Condition B4 of this permit and shall be submitted to The Technical Secretary at the address in Condition E2(b) of this permit.

TAPCR 1200-03-09-.02(11)(e)1.(iii)

- (b) **Annual compliance certification.** The permittee shall submit annually compliance certifications with each term or condition contained in Sections A, B, D and E of this permit, including emission limitations, standards, or work practices. This compliance certification shall include all of the following (provided that the identification of applicable information may cross-reference the permit or previous reports, as applicable):

- (1) The identification of each term or condition of the permit that is the basis of the certification;
- (2) The identification of the method(s) or other means used by the owner or operator for determining the compliance status with each term and condition during the certification period; Such methods and other means shall include, at a minimum, the methods and means required by this permit. If necessary, the owner or operator also shall identify any other material information that must be included in the certification to comply with section 113(c)(2) of the Federal Act, which prohibits knowingly making a false certification or omitting material information;
- (3) The status of compliance with each term or condition of the permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent. The certification shall be based on the method or means designated in E2(b)2 above. The certification shall identify each deviation and take it into account in the compliance certification. The certification shall also identify as possible exceptions to compliance any periods during which compliance is required and in which an excursion* or exceedance** as defined below occurred; and
- (4) Such other facts as the Technical Secretary may require to determine the compliance status of the source.

* "Excursion" shall mean a departure from an indicator range established for monitoring under this paragraph, consistent with any averaging period specified for averaging the results of the monitoring.

** "Exceedance" shall mean a condition that is detected by monitoring that provides data in terms of an emission limitation or standard and that indicates that emissions (or opacity) are greater than the applicable emission limitation or standard (or less than the applicable standard in the case of a percent reduction requirement) consistent with any averaging period specified for averaging the results of the monitoring.

Annual compliance certifications shall cover the 12-month period from **July 1** to **June 30** and shall be submitted within 60 days after the end of each 12-month period. The first annual compliance certification following issuance of this permit shall cover the following permits and reporting periods:

Permit Number	Reporting Period Begins	Reporting Period Ends
573045	July 1, 2026	day before new permit issuance (with year)
581660	Issuance Date of new permit (with year)	June 30, 2027

These certifications shall be submitted to: **TN APCD** and **EPA**

Division of Air Pollution Control
Nashville Environmental Field Office
711 R.S. Gass Boulevard
Nashville, TN 37216
or
APC.NashEFO@tn.gov

and Air Enforcement Branch
US EPA Region IV
61 Forsyth Street, SW
Atlanta, Georgia 30303
or
Through the EPA CDX
(<https://cdx.epa.gov/>)

40 CFR Part 70.6(c)(5)(iii) as amended in the Federal Register Vol. 79, No.144, July 28, 2014, pages 43661 through 43667
TAPCR 1200-03-09-.02(11)(e)3.(v)

(c) **Other Reporting Requirements** The permittee must submit the NSPS and/or NESHAP reports listed below, *each under separate cover or as a separate electronic (pdf) file, as follows*

1. **NESHAP** – 40 CFR Part 63 Subpart DDDDD - *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters*
 - i. 5-year compliance reports required by **Condition E6-14** of this permit. The first NESHAP DDDDD 5-year compliance report must cover the period beginning on the compliance date, January 31, 2016, and ending on December 31, 2020. Subsequent compliance reports after the initial report will cover the 5-year periods following the first report. Reports must be postmarked or delivered no later than the first January 31 after the reporting period ends.

These reports must be certified by a responsible official consistent with Condition B-4 of this permit and shall be submitted to the Technical Secretary at the address in Condition E2(b) of this permit.

(d) **Retention of Records** All records required by any condition in Section E of this permit must be retained for a period of not less than five years. Additionally, these records shall be kept available for inspection by the Technical Secretary or a Division representative.

TAPCR 1200-03-09-.02(11)(e)1.(iii)(II)II

E3. GENERAL PERMIT REQUIREMENTS

Conditions E3-1 through E3-14 apply to all sources in this permit, unless otherwise indicated.

E3-1. Identification of Responsible Official, Technical Contact, and Billing Contact

- (a) The applications that were utilized in the preparation of this permit are dated August 1, 2023 and July 9, 2025, and is signed by Responsible Official Joseph Simonsen, Director of the permitted facility. Notification was received October 8, 2024 that Jess Coleman – VP Operations would assume the Responsible Official role. If the designated Responsible Official terminates employment or is assigned different duties and is no longer a Responsible Official for this facility as defined in part 1200-03-09-.02(11)(b)21 of the Tennessee Air Pollution Control Regulations, the owner or operator of this air contaminant source shall notify the Technical Secretary of the change. Said notification must be in writing and must be submitted within thirty (30) days of the change. The notification shall include the name and title of the new Responsible Official and certification of truth and accuracy. All representations, agreement to terms and conditions, and covenants made by the former Responsible Official that were used in the establishment of the permit terms and conditions will continue to be binding on the facility until such time that a revision to this permit is obtained that would change said representations, agreements, and/or covenants.
- (b) The applications that were utilized in the preparation of this permit are dated August 1, 2023 and July 9, 2025, and identifies Julia Griffin, Air Permitting and Compliance Specialist as the Principal Technical Contact for the permitted facility. If the identified Principal Technical Contact terminates employment or is assigned different duties and is no longer the Principal Technical Contact for this facility, the owner or operator of this air contaminant source shall notify the Technical Secretary of the change. Said notification must be in writing and must be submitted within thirty (30) days of the change. The notification shall include the name and title of the new Principal Technical Contact and certification of truth and accuracy.
- (c) The applications that were utilized in the preparation of this permit are dated August 1, 2023 and July 9, 2025, and identifies Julia Griffin, Air Permitting and Compliance Specialist as the Billing Contact for the permitted facility. If the identified Billing Contact terminates employment or is assigned different duties and is no longer the Billing Contact for this facility, the owner or operator of this air contaminant source shall notify the Technical Secretary of the change. Said notification must be in writing and must be submitted within thirty (30) days of the change. The notification shall include the name and title of the new Billing Contact and certification of truth and accuracy.

E3-2. Application and Agreement Letters

This source shall operate in accordance with the terms of this permit, the information submitted in the approved permit application(s) referenced in **Condition E3-1** of this permit, and any documented agreements made with the Technical Secretary.

TAPCR 1200-03-09-.01(1)(d)

E3-3. Submittals

Unless otherwise specified within this permit, the permittee shall submit, preferably via email and in Adobe Portable Document format (PDF), all applicable plans, checklists, certifications, notifications, test protocols, reports, and applications to the attention of the following Division Programs at the email addresses indicated in the table below:

Permitting Program	Compliance Validation Program	Field Services Program
• Notifications • Startup certifications • Applications • NSPS reports • MACT/GACT/NESHAP reports • Emission statements	• Test protocols • Emission test reports • Visible emission evaluation reports	• Semiannual reports • Annual compliance certifications/status reports
Division of Air Pollution Control Davy Crockett Tower, 7 th Floor 500 James Robertson Parkway Nashville, TN 37243 Air.Pollution.Control@tn.gov		Nashville EFO Division of Air Pollution Control 711 R.S. Gass Boulevard Nashville, TN 37216 APC.NashEFO@tn.gov

The permittee shall submit the information identified above as requested in this permit. In lieu of submitting this information to the email addresses above, the permittee may submit the information to the attention of the respective Division Programs at the mailing addresses listed above.

TAPCR 1200-03-09-.03(8)

E3-4. General Recordkeeping Requirements

(a) All recordkeeping requirements for all data required to be recorded shall follow the following schedules:

For Daily Recordkeeping	For Weekly Recordkeeping	For Monthly Recordkeeping
No later than seven days from the end of the day for which the data is required.	No later than seven days from the end of the week for which the data is required.	No later than 30 days from the end of the month for which the data is required.

(b) The information contained in logs, records, and submittals required by this permit shall be kept at the facility's address, unless otherwise noted, and provided to the Technical Secretary or a Division representative upon request. Computer-generated logs are acceptable. Compliance is assured by retaining the logs, records, and submittals specified in this permit for a period of not less than five years at the facility's address.

TAPCR 1200-03-10-.02(2)(a)

E3-5. Visible Emissions

Unless otherwise specified, visible emissions from sources at this facility shall not exhibit greater than twenty percent (20%) opacity, except for one (1) six-minute period in any one (1) hour period, and for no more than four six-minute periods in any twenty-four hour period. Visible emissions from this source shall be determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average).

TAPCR 1200-03-05-.01(1) and 1200-03-05-.03(6)

Compliance method: The permittee shall assure compliance with the opacity standard by utilizing the opacity matrix dated June 18, 1996 (amended on September 11, 2013) that is enclosed as Attachment #6 to this permit. Reports and certifications shall be submitted in accordance with **Condition E2** of this permit.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

E3-6. Facility-wide Limitations

- (a) Only natural gas with a maximum total sulfur content of 5 grains/100 scf shall be used as fuel for the sources in this permit.

Compliance Method: The permittee shall maintain documentation to demonstrate that the maximum total sulfur content of the natural gas used as fuel for the sources in this permit is 5 grains/100 scf or less. The permittee shall use one of the following sources of information to make the required demonstration:

1. The gas quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying that the maximum total sulfur content of the fuel is 5 grains/100 scf or less; or
2. Representative fuel sampling data which show that the sulfur content of the gaseous fuel does not exceed 5 grains/100 scf. At a minimum, the amount of fuel sampling data specified in section 2.3.1.4 or 2.3.2.4 of appendix D to 40 CFR part 75 is required.

E3-7. NSPS/NESHAP/MACT/GACT Standards

The following source(s) are subject to and shall comply with all applicable requirements of each NSPS/NESHAP/MACT/GACT standard as indicated in the table below, including the General Provisions identified in Attachments #4 and #5 of this permit. The applicable requirements of each standard are incorporated into this permit pursuant to TAPCR 1200-03-09-.03(8) and TAPCR 0400-30-38-.01.

Source Number	NESHAP/MACT/GACT	NSPS
83-0008-02	ZZZZ	--
83-0008-03	DDDDD	--

TAPCR 1200-03-09-.03(8) and 0400-30-38-.01

Compliance Method: Compliance methods are provided in **Conditions E5-8 through E5-20 and E6-6 through E6-14** of this permit.

E3-8. VOC and NO_x Emission Statement

The owner or operator of any facility in Anderson, Blount, Davidson, Knox, Rutherford, Shelby, Sumner, Williamson, or Wilson County which has actual emissions from stationary sources of 25 tons or more of volatile organic compounds (VOCs) and/or nitrogen oxides during a calendar year shall report to their permitting authority information and data concerning these emissions. This information and data shall be in the form prescribed by the Technical Secretary, and shall be submitted before March 31 of the year following the calendar year for which the information and data is reported. The first report shall be for the 1993 calendar year, and shall be submitted before March 31, 1994. Each report shall be signed by an official of the company, certifying that the information and data contained in the report is accurate to the best knowledge of the individual certifying the report.

TAPCR 1200-03-18-.02(8), 1200-03-27-.02(6), and 1200-03-09-.03(8)

E3-9. Accidental Release Plan

The Permittee is not required to file an accidental release plan pursuant to Section 112(r) of the Clean Air Act and TAPCR 1200-03-32.

E3-10. CAM Plan

This facility is currently subject to regulations under 40 CFR Part 64 (Compliance Assurance Monitoring). **Condition E4-13** of this permit specifies the applicable requirements.

E3-11. Insignificant activities: Insignificant activities identified in the Title V application per Rules 1200-03-09-.04(5) of the Tennessee Air Pollution Control Regulations are listed below. Additional insignificant activities may be added and operated at any time with the provision that a written notification shall be submitted to the Technical Secretary including an updated APC V.2 application form with a Truth, Accuracy, and Completeness statement signed by a responsible official. The permit may be updated to include additional insignificant sources by means of an administrative amendment if necessary. The addition of insignificant activities which are identified as insignificant per rules 1200-03-09-.04(5)f or (g) of the TAPCR does not require notification to the Division of Air Pollution Control.

Activity or Emissions Unit	Designation	Rating/ Capacity	Rule (TAPCR) for Insignificant or Exempt Status
Misc. Space and Water Heaters	87-HEATER-30	4 MMBtu/hr	1200-3-9-.04(5)(a)4.(i)
Fugitive Emissions-Gas Service	FUG-GAS	NA	1200-3-9-.04(5)(a)4.(i)
Fugitive Emissions-Light Oil Service	FUG-LTOIL	NA	1200-3-9-.04(5)(a)4.(i)
"A" Lube Oil Storage Tank	T-1	11,646 gal	1200-3-9-.04(5)(a)4.(i)
Used Oil	T-2	2,000 gal	1200-3-9-.04(5)(a)4.(i)
"E" Lube Oil Storage Tank	T-3	7,500 gal	1200-3-9-.04(5)(a)4.(i)
"C" Lube Oil Storage Tank	T-4	11,000 gal	1200-3-9-.04(5)(a)4.(i)
"E" Lube Oil Storage Tank	T-9	11,373 gal	1200-3-9-.04(5)(a)4.(i)
"A" Used Oil Storage Tank (North)	T-10	750	1200-3-9-.04(5)(a)4.(i)
"A" Used Oil Storage Tank (South)	T-11	750	1200-3-9-.04(5)(a)4.(i)
"E" Lube Oil Drain Tank	T-12	2,300	1200-3-9-.04(5)(a)4.(i)
"C" Used Oil Storage Tank (South)	T-13	750	1200-3-9-.04(5)(a)4.(i)
"C" Used Oil Storage Tank (North)	T-14	750	1200-3-9-.04(5)(a)4.(i)
"D" New Oil Storage Tank	T-15	3,750	1200-3-9-.04(5)(a)4.(i)
"D" Used Oil Storage Tank	T-16	750	1200-3-9-.04(5)(a)4.(i)
"C" Drip Storage Tank	T-17	11,000	1200-3-9-.04(5)(a)4.(i)
"D" Drip Storage Tank	T-18	4,800	1200-3-9-.04(5)(a)4.(i)
"E" Sump Tank	T-19	400	1200-3-9-.04(5)(a)4.(i)
"D" Oily Water Tank	T-20	11,000	1200-3-9-.04(5)(a)4.(i)
"A" Rundown Drain Tank (Glycol)	T-21	95	1200-3-9-.04(5)(a)4.(i)
"A" Hot Surge Tank (Glycol)	T-22	11,750	1200-3-9-.04(5)(a)4.(i)
"A" Cold Surge Tank (Glycol)	T-23	1,880	1200-3-9-.04(5)(a)4.(i)
"A" Aux Rundown Drain (Glycol)	T-24	95	1200-3-9-.04(5)(a)4.(i)
"A" Jacket Water Heater Storage Tank	T-25	3,923	1200-3-9-.04(5)(a)4.(i)
"A" Aux Condensate Tank (Glycol + Water)	T-26	350	1200-3-9-.04(5)(a)4.(i)
"E" Jacket Water Storage Tank	T-27	1,420	1200-3-9-.04(5)(a)4.(i)
"E" Jacket Water Drain Tank	T-28	2,590	1200-3-9-.04(5)(a)4.(i)
"C" Rundown Drain Tank (Glycol)	T-29	95	1200-3-9-.04(5)(a)4.(i)
"C" Jacket Water Surge Tank (Glycol)	T-30	11,750	1200-3-9-.04(5)(a)4.(i)
"D" Glycol Tank	T-31	11,750	1200-3-9-.04(5)(a)4.(i)
"C" & "D" Jacket Water Heater Tank	T-32	4,339	1200-3-9-.04(5)(a)4.(i)
"D" Used Oil Tank	T-33	230	1200-3-9-.04(5)(a)4.(i)
"D" Used Oil Tank	T-34	350	1200-3-9-.04(5)(a)4.(i)
"C" Used Oil Tank	T-35	350	1200-3-9-.04(5)(a)4.(i)
"A" Oily Water Tank 1	T-36	11,000	1200-3-9-.04(5)(a)4.(i)
"A" Oily Water Tank 2	T-37	11,000	1200-3-9-.04(5)(a)4.(i)
Brine Tank	Brine Tank	10,000	1200-3-9-.04(5)(a)4.(i)
Mobile Drip Tank	Mobile Drip Tank	800	1200-3-9-.04(5)(a)4.(i)

TAPCR 1200-03-09-.04(5)

E3-12. Emissions from any activity related to maintenance and/or repair of station equipment and/or transmission pipeline are permitted if below thresholds in TAPCR 1200-03-09-.04.

TAPCR 1200-03-09-.03(8) and 1200-03-09-.04

- E3-13.** The permittee shall comply with all applicable federal and state regulations concerning the operation of the sources in this permit. This includes but is not limited to federal regulations published under 40 CFR Part 63 for sources of hazardous air pollutants and 40 CFR Part 60, New Source Performance Standards.

TAPCR 1200-03-09-.03(8)

- E3-14.** For the purpose of calculating actual emissions for fee purposes, the permittee shall maintain records as specified below for each of the natural gas-fired compressor station engines, natural gas-fired emergency generator engines, and natural gas-fired heaters/evaporators. These records shall be kept for a period of no less than five years and shall be made available to the Division upon request.

For fee purposes, the permittee may calculate actual oxides of nitrogen (NO_x) emissions, particulate matter (PM) emissions, and volatile organic compound (VOC) emissions from engine units for each Annual Accounting Period (AAP) using engine operating hours, actual horsepower, natural gas usage, and EPA AP-42 emission factors for Stationary Internal Combustion Sources, October 2024, Tables 3.2-1, 3.2-2 or 3.2-3 (Attachment #7), or specific engine test data (Attachment #9), or any appropriate combination of these items. For fee purposes, the permittee shall calculate actual oxides of nitrogen (NO_x) emissions, particulate matter (PM) emissions, and volatile organic compound (VOC) emissions from the heaters/evaporators for each Annual Accounting Period (AAP) using natural gas usage, fuel heating value, and EPA AP-42 emission factors for External Combustion Sources, April 2026, Tables 1.4-1, and 1.4-2 (Attachment #8).

Sulfur dioxide (SO₂) emissions for the natural gas-fired compressor station engines and natural gas-fired emergency generator engines shall be calculated using engine operating hours, actual horsepower, natural gas usage, and an emission factor of 0.014 lb/MMBtu (14.271 lb/MMscf), consistent with the sulfur content limitation contained in **Condition E3-6** of this permit. Sulfur dioxide (SO₂) emissions from the heaters and evaporators shall be calculated using natural gas usage, fuel heating value, and an emission factor of 0.014 lb/MMBtu (14.271 lb/MMBtu), consistent with the sulfur content limitation contained in **Condition E3-6** of this permit. The results of these calculations shall be recorded, maintained, and entered in Log 1 (or another format providing the required information) specifying the specific emission factors and basis for calculations. If more recent emission factors or test data is used, the basis for such factors shall be provided. These records shall be retained for a period of not less than five (5) years. These records shall be reported in accordance with **Condition E1** of this permit.

Log 1: Fiscal Year (AAP) Log of total emissions from all sources for fee purposes
Year _____ July 1, _____ to June 30, _____

Unit	MM SCF nat. gas during fee year	Design Horsepower	Hours	Horsepower-Hours	Fuel Heating Value (HHV)	Pollutant	Emission Factor and Basis	Fiscal year Emissions (tons)
Engine 1A						NO _x		
						SO ₂		
						PM		
						VOC ¹		
						VOC HAPs		
						Non-VOC HAPs		
Engine 2A						NO _x		
						SO ₂		
						PM		
						VOC ¹		
						VOC HAPs		
						Non-VOC HAPs		
Etc.						NO _x		
						SO ₂		
						PM		
						VOC ¹		
						VOC HAPs		
						Non-VOC HAPs		

¹ Not including HAP

Note: Complete table as required to calculate emissions.

TAPCR 1200-03-26-.02(9)

83-0008-01 **Source Description** **Natural gas pipeline compressor station, consisting of twenty natural gas-fired two-stroke lean burn (2SLB) reciprocating engines and two natural gas-fired four-stroke lean burn (4SLB) reciprocating engines**

For the purposes of 40 CFR Part 60 Subpart JJJJ - *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines*, none of these engines were manufactured, modified, or reconstructed after the effective date of the rule, therefore they are not subject to 40 CFR Part 60 Subpart JJJJ.

For the purposes of 40 CFR 63 Subpart ZZZZ - *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, engines 1A through 9A, 1C through 6C, 7C through 8C, 1D through 2D, and 3D are existing 2 stroke lean burn (2SLB) stationary RICE with a site rating of more than 500 brake HP, and engines 1E through 2E are existing 4 stroke lean burn (4SLB) stationary RICE with a site rating of more than 500 brake HP, located at a major source of HAP emissions, and do not have any applicable requirements associated with this regulation per 40 CFR 63.6590(b)(3). These engines do not operate for the purposes specified in 40 CFR 63.6640(f)(3).

Conditions E4-1 through E4-15 apply to source 83-0008-01.

E4-1. The unit #, model, rated heat input rate, and power output capacities of the twenty-two natural gas-fired reciprocating compressor engines are shown in the table below. This condition is a statement of the rated heat input rate, and power output capacity for the engines. Should the permittee need to modify any engine in a manner that increases its rated heat input rate, and/or power output capacity, a construction permit or Title V modification shall first be applied for and received in accordance with TAPCR 1200-03-09-.01 or TAPCR 1200-03-09-.02(11)(d)1(i)(V) prior to making the change

Unit #	Model	Rated Heat Input (HHV) (MMBtu/hr)	Rated Power Output (horsepower)
1A	Cooper-Bessemer GMV-10 (2SLB) (SI)	14.57	1,100
2A	Cooper-Bessemer GMV-10 (2SLB) (SI)	14.57	1,100
3A	Cooper-Bessemer GMV-10 (2SLB) (SI)	14.57	1,100
4A	Cooper-Bessemer GMV-10 (2SLB) (SI)	14.57	1,100
5A	Cooper-Bessemer GMV-10 (2SLB) (SI)	14.57	1,100
6A	Cooper-Bessemer GMV-10 (2SLB) (SI)	14.57	1,100
7A	Cooper-Bessemer GMV-10 (2SLB) (SI)	14.57	1,100
8A	Cooper-Bessemer GMV-10 (2SLB) (SI)	14.57	1,100
9A	Cooper-Bessemer GMV-10 (2SLB) (SI)	14.57	1,100
1C	Cooper-Bessemer GMV-10*H*S (2SLB) (SI)	14.34	1,350
2C	Cooper-Bessemer GMV-10*H*S(2SLB) (SI)	14.34	1,350
3C	Cooper-Bessemer GMV-10*H*S (2SLB) (SI)	14.34	1,350
4C	Cooper-Bessemer GMV-10*H*S (2SLB) (SI)	14.34	1,350
5C	Cooper-Bessemer GMV-10*H*S (2SLB) (SI)	14.34	1,350
6C	Cooper-Bessemer GMV-10*H*S (2SLB) (SI)	14.34	1,350
7C	Cooper-Bessemer GMW-8(2SLB) (2SLB) (SI)	18.41	2,000
8C	Cooper-Bessemer GMW-8 (2SLB) (SI)	18.41	2,000
1D	Cooper-Bessemer GMWC-10 (2SLB) (SI)	28.51	3,400
2D	Cooper-Bessemer GMWC-10 (2SLB) (SI)	28.51	3,400
3D	Cooper-Bessemer 16V-250 (2SLB) (SI)	49.88	5,500
1E	Wartsila 18V34-SG-C (4SLB) (SI)	58.93	7,700
2E	Wartsila 18V34-SG-C (4SLB) (SI)	58.93	7,700

TAPCR 1200-03-09-.03(8) and the applications dated August 1, 2023 and July 9, 2025

Compliance method: The permittee shall maintain documentation to demonstrate the rated heat input rate, and power output capacity of each engine. Documentation may include, but is not limited to, purchase records, operating manuals, or a tag affixed to the unit by the manufacturer. These documents shall be kept readily available/accessible and made available upon request by the Technical Secretary or a Division representative.

- E4-2.** Particulate matter emitted from this source shall not exceed 18.57 pounds per hour, on a daily average basis. TAPCR 1200-03-06-.01(7) and the applications dated August 1, 2023 and July 9, 2025
- Compliance Method:** Compliance with this emission standard is based on emission factors from EPA AP-42 emission factors for Stationary Internal Combustion Sources, October 2024, Tables 3.2-1 and 3.2-2 (Attachment #7).
- E4-3.** Sulfur dioxide emitted from this source shall not exceed 6.68 pounds per hour, on a daily average basis. TAPCR 1200-03-14-.01(3) and the applications dated August 1, 2023 and July 9, 2025
- Compliance Method:** Compliance with this emission standard may be demonstrated by compliance with **Conditions E3-6 and E4-1** of this permit.
- E4-4.** Catalytic converters shall be utilized on Engines 1E and 2E, Wartsila W18V34-SG-C engines each rated at 7700 HP (ISO)
- Compliance Method:** The Permittee shall certify in the annual certification of compliance that Engines 1E and 2E were not operated without catalytic reduction. TAPCR 1200-03-27-.03(1)a
- E4-5.** Carbon monoxide emitted from Engines 1E and 2E, Wartsila W18V34-SG-C engines combined, shall not exceed 20.00 pounds per hour. This limit is below the PSD significant emissions rate increment for this pollutant. TAPCR 1200-03-06-.03(2)
- Compliance Method:** Emission factor guaranteed from the catalyst vendor and by compliance with **Condition E4-4** of this permit.
- E4-6.** For annual fee payment purposes only, Volatile Organic Compounds (VOC) emitted from this source will not exceed 250.62 tons during any period of 12 consecutive months. TAPCR 1200-03-26-.02(9)
- Compliance Method:** None. This is a statement of the source potential to emit for annual emission fee payment purposes only.
- E4-7.** Engines 1D and 2D, Cooper Bessemer GMWC-10 engines rated at 3,400 Hp each, shall be operated such that the nitrogen oxides (NO_x) emission rate(s) shall not exceed 60.0 lb/hr for each engine. Engines 1D and 2D shall not be operated without the electronic fuel injection system in place. TAPCR 1200-03-06-.03(2) and 1200-03-27-.09(3)(b)
- Compliance Method:** Compliance assurance is based on the results of the initial performance test for emissions of nitrogen oxides (NO_x) from Engines 1D and 2D conducted February 26, 2004 and by certification that electronic fuel injection is utilized. These test results demonstrate compliance with the NO_x emission limit of 60.0 lb/hr for each of the Engines 1D and 2D (Attachment #9).
- E4-8.** Engine 3D, a Cooper Bessemer 16V-250 rated at 5500 Hp, shall not be operated without using the clean-burn retrofit modification. The NO_x emission rate for this engine shall not exceed 43.65 lb/hr. TAPCR 1200-03-27-.03(1)a
- Compliance method:** By annual certification of compliance, the permittee certifies that the engine was not operated without using the clean-burn retrofit modification.

- E4-9.** Beginning in 2007, engines 1D and 2D shall not be operated during the period May 1 through September 30 of each year unless the permittee complies with the requirements of the compliance plan established pursuant to TAPCR 1200-03-27-.09(3)(a) and dated April 24, 2006 from the permittee. Additionally, the permittee shall comply with the reporting, monitoring and recordkeeping requirements of TAPCR 1200-03-27-.09(4) for engines 1D and 2D. The monitoring will be performed for either of these two engines that are operated more than 300 hours during the period May 1 through September 30. At least thirty days prior to monitoring please notify the Compliance Validation Program of the Division, at (615) 532-0554 in the event the Division wishes to observe the monitoring. After completing the emission performance test, the Permittee shall submit a summary of the test results not later than 60 days after the completion of the test.

TAPCR 1200-03-27-.09(3)(a) and 1200-03-27-.09(4)

Compliance Method: The permittee shall comply with the monitoring, recordkeeping and reporting requirements of the compliance plan for NO_x emissions established pursuant to TAPCR 1200-03-27-.09(3)(a) and TAPCR 1200-03-27-.09(4) (Attachment #11).

- E4-10.** The 791.77 tons of reduction in NO_x emissions from this source during ozone season, resulting from the combustion modification of Engines 1D and 2D, shall be credited towards the permittee's NO_x SIP compliance obligations in the State of Tennessee.

TAPCR 1200-03-27-.09(3)(a) and 1200-03-27-.09(4)

Compliance Method: The permittee shall comply with the monitoring, recordkeeping and reporting requirements of the compliance plan for NO_x emissions established pursuant to TAPCR 1200-03-27-.09(3)(a) and TAPCR 1200-03-27-.09(4).

- E4-11.** NO_x emitted from Engines 1E and 2E, Wartsila W18V34-SG-C engines combined, shall not exceed 50 pounds per hour. This limit is below the PSD significant emissions rate increment for this pollutant.

TAPCR 1200-03-06-.03(2)

Compliance Method: Emission factor guaranteed from the catalyst vendor and by certification that catalytic reduction is utilized.

- E4-12.** For annual emission fee payment purposes only, Nitrogen oxides (NO_x) emitted from this source shall not exceed 4,409.78 tons during any period of 12 consecutive months.

TAPCR 1200-03-26-.02(9)

Compliance Method: None. This is a statement of the source potential to emit for annual emission fee payment purposes only.

- E4-13.** Engines 1E and 2E, two 7700 Hp (58.93 MMBTU/hr) Wartsila 18V34-SG-C engines, are subject to 40 CFR Part 64-Compliance Assurance Monitoring (CAM) for carbon monoxide. The facility shall operate these sources in compliance with the CAM Plan (Attachment #10). The following table summarizes the CAM requirements:

Indicator	
Parameter	Oxidation Catalyst Inlet Temperature (⁰ F)
Measurement Approach	The inlet temperature to the oxidation catalyst will be monitored on a daily basis using a Resistance Temperature Detector ¹ (RTD), thermocouple, or equivalent device each day the engine is operating.
Indicator Range	
Parameter Range	Oxidation Catalyst Inlet Temperature Range of 450 ⁰ F – 1,350 ⁰ F at all loads.
Performance Criteria	The pre-catalyst temperature monitoring device will have a temperature range sufficient to provide accurate temperature measurement throughout the operating range (450 ⁰ F – 1350 ⁰ F and accuracy of +/- 1% of measured temperature.
Data Representativeness	The pre-catalyst temperature measuring device installed within 2 feet upstream of the catalyst. This will provide catalyst inlet temperature readings that are representative of the actual exhaust temperature entering the catalyst element.
Verification of Operational Status	Alarm and shutdown limits that prevent the engine from operating below 450 ⁰ F and above 1,350 ⁰ F as follows: Lower limit alarm set-point 475 ⁰ F Lower limit shutdown set-point 455 ⁰ F Upper limit alarm set-point 1315 ⁰ F Upper limit shut-down set-point 1335 ⁰ F
QA/QC Practices and Criteria	Calibrate and/or replace the pre-catalyst temperature measuring device annually. The calibration acceptance criterion is +/- 0.5% of measured temperature.
Monitoring Frequency and Data Collection Procedures	Record the catalyst inlet temperature once a day for each day the engine is operating.
Recordkeeping	Records of the daily catalyst inlet temperature will be kept.
Averaging Period	NA

¹ Resistance Temperature Detector (RTD) is a sensor used to measure temperature by correlating the resistance of the RTD element with temperature. Typically, an RTD element consists of a length of fine coiled wire wrapped around a ceramic or glass core.

Compliance Method: Emission factor guaranteed from the catalyst vendor and by certification that catalytic reduction is utilized.

- E4-14.** One or more of the compressor engines may be removed and/or replaced with repaired or refurbished equivalent capacity engines in order to maintain gas delivery capacity.

TAPCR 1200-03-09-.03(8)

Compliance Method: Records shall be maintained on site of such changes and shall be entered into a log no later than a week after the unit is replaced in accordance with **Conditions B1 and E3-4** of this permit. If the replacement engine(s) are retained on a permanent basis the permittee shall notify the Division in writing and submit an application to the Division if the unit is subject to any applicable federal requirements including MACT, NSPS etc.

- E4-15.** Portable compressor engines, such as Allison KV501, Solar Centaur or Solar Saturn, may be used on an interim basis (up to three months) to temporarily replace the existing unit (or units) under maintenance or repair.

TAPCR 1200-03-09-.03(8)

Compliance Method: Records shall be maintained on site of such changes and entered into a log within a week after the unit is put in temporary replacement for repair or maintenance and also a record must be entered no later than one week after the temporary unit is removed and the existing unit has resumed operation. Both types of log entries shall be made in accordance with **Conditions B1 and E3-4** of this permit.

83-0008-02	Source Description	Two natural gas fired emergency generator engines: one four-stroke lean burn (4SLB) reciprocating engine and one four-stroke rich burn (4SRB) reciprocating engine
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For the purposes of 40 CFR Part 60 Subpart JJJJ - *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines*, none of these engines were manufactured, modified, or reconstructed after the effective date of the rule, therefore they are not subject to 40 CFR Part 60 Subpart JJJJ.

For the purposes of 40 CFR Part 63 Subpart ZZZZ - *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, engine A-Aux-6 **is subject to limited requirements**. However, it is exempt from the emission and operating limitations of the regulation as outlined in 40 CFR §63.6600(c), because it operates as an emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions. As per 40 CFR §63.6590(a)(1)(ii), Engine T-Aux-01 **is subject** to the requirements for existing emergency stationary RICE with a site rating of less than 500 horsepower located at a major source of HAP emissions.

Conditions E5-1 through E5-20 apply to source 83-0008-02

- E5-1.** The unit #, model, rated heat input rate, and power output capacities of the natural gas-fired emergency engines are shown in the table below. This condition is a statement of the rated heat input rate, and power output capacity for the engines. Should the permittee need to modify an engine in a manner that increases its rated heat input rate, and/or power output capacity, a construction permit or Title V modification shall first be applied for and received in accordance with TAPCR 1200-03-09-.01 or TAPCR 1200-03-09-.02(11)(d)1(i)(V) prior to making the change.

Unit #	Model	Rated Heat Input (HHV) (MMBtu/hr)	Rated Power Output (horsepower)
A-Aux-6	Caterpillar G3516TA (4SLB) (SI)	8.31	1,081
T-Aux-01	Cummins/Onan 35GGFB (4SRB) (SI)	1.21	110

TAPCR 1200-03-09-.03(8) and the applications dated August 1, 2023 and July 9, 2025

Compliance method: The permittee shall maintain documentation to demonstrate the rated heat input rate, and power output capacity of the engines. Documentation may include, but is not limited to, purchase records, operating manuals, or a tag affixed to the unit by the manufacturer. These documents shall be kept readily available/accessible and made available upon request by the Technical Secretary or a Division representative.

- E5-2.** The permittee has designated the IC engines of this source as an emergency engine. According to a memorandum dated September 6, 1995 from John Seitz, Director, Office of Air Quality Planning and Standards, "EPA believes that 500 hours is an appropriate default assumption for estimating the number of hours that an emergency generator could be expected to operate under worst-case conditions." This value (500 hours) will be assumed to be the maximum operating hours per calendar year for this source, for the purpose of establishing a "potential to emit" for each pollutant of concern for the source. The 500-hour value includes the 100 hours per year for maintenance checks and readiness testing as specified in **Condition E5-10** of this permit. In the event the unit operates more than 500 hours during a period of a calendar year, the total annual hours of operation shall be reported to the Technical Secretary within 30 days of the end of the calendar year, along with the amount of fuel used, and actual emissions from this unit.

TAPCR 1200-03-09-.03(8)

Compliance Method: Compliance with this emission standard may be demonstrated by the record keeping required by **Condition E5-20** of this permit.

- E5-3.** Particulate matter emitted from this source shall not exceed 0.10 pounds per hour, on a daily average basis.

TAPCR 1200-03-06-.01(7) and the applications dated August 1, 2023 and July 9, 2025

Compliance Method: The potential particulate matter emissions from this source are less than 5 tons per year. By annual certification of compliance, the permittee shall be considered to meet the monitoring and related recordkeeping and reporting requirements of TAPCR 1200-03-09-.02(11)(e)1(iii) and 1200-03-10-.04(2)(b)(1), and the compliance requirements of TAPCR 1200-03-09-.02(11)(e)3(i).

- E5-4.** Sulfur dioxide (SO₂) emitted from this source shall not exceed 0.14 pounds per hour, on a daily average basis.

TAPCR 1200-03-14-.01(3) and the applications dated August 1, 2023 and July 9, 2025

Compliance Method: The potential sulfur dioxide emissions from this source are less than 5 tons per year. By annual certification of compliance, the permittee shall be considered to meet the monitoring and related recordkeeping and reporting requirements of TAPCR 1200-03-09-.02(11)(e)1(iii) and 1200-03-10-.04(2)(b)(1), and the compliance requirements of TAPCR 1200-03-09-.02(11)(e)3(i).

- E5-5.** For annual fee payment purposes only, Volatile Organic Compounds (VOC) emitted from this source will not exceed 0.42 tons during any period of 12 consecutive months.

TAPCR 1200-03-26-.02(9)

Compliance Method: None. This is a statement of the source potential to emit for annual emission fee payment purposes only.

- E5-6.** For annual fee payment purposes only, Nitrogen oxides (NO_x) emitted from this source will not exceed 9.39 tons during any period of 12 consecutive months.

TAPCR 1200-03-26-.02(9)

Compliance Method: None. This is a statement of the source potential to emit for annual emission fee payment purposes only.

- E5-7.** The emergency engines may be removed and replaced with repaired or refurbished equivalent capacity emergency engines in order to maintain facility operation.

Compliance Method: Records shall be maintained on site of such changes and shall be entered into a log no later than a week after the unit is replaced in accordance with **Conditions B1 and E3-4** of this permit. If the replacement engine(s) are retained on a permanent basis the permittee shall notify the Division in writing and submit an application to the Division if the unit is subject to any applicable federal requirements including MACT, NSPS etc.

- E5-8.** The emergency engines are subject to regulations under **40 CFR Part 63, Subpart ZZZZ, NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES**, including any and/or all applicable emission limitations, notification, compliance options, records, reports etc. as referenced below in **Conditions E5-9 through E5-20** of this permit. Engine A-Aux-6 is exempt from the emission and operating limitations of the regulation as outlined in 40 CFR §63.6600(c), because it operates as an emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions. As per 40 CFR §63.6590(a)(1)(ii), Engine T-Aux-01 is subject to the requirements for existing emergency stationary RICE with a site rating of less than 500 horsepower located at a major source of HAP emissions. The facility must be in compliance with the emission limitations, operating limitations, and other requirements in **Conditions E5-9 through E5-20** of this permit at all times.

TAPCR 1200-03-09-.03(8) and 40 CFR §§63.6605(a); 63.6585; 63.6590(a)(1)

Compliance Method: Compliance with this condition and with **Conditions E5-9 through E5-20** of this permit is assured through the submittal of the required reports and by maintaining the records required by this permit.

- E5-9.** At all times the permittee must operate and maintain this source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

TAPCR 1200-03-09-.03(8) and 40 CFR §63.6605(b)

E5-10. The permittee must operate engines A-Aux-6 and T-Aux-01 according to the requirements in (a) through (c) of this condition. In order for the engines to be considered emergency stationary ICE 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 below in (a) through (c) of this condition, is prohibited. If the permittee does not operate the engines according to the requirements in (a) through (c) of this condition, the engines will not be considered an emergency engine under subpart ZZZZ and must meet all requirements for non-emergency engines.

- (a) There is no time limit on the use of emergency stationary ICE in emergency situations.
- (b) The permittee may operate the emergency stationary ICE for any combination of the purposes specified in (b)(1) of this condition for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph (c) of this condition counts as part of the 100 hours per calendar year allowed by this paragraph (b).
 - 1. Emergency stationary ICE 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 permittee may petition the Technical Secretary for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the permittee maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year.
- (c) The permittee may operate the emergency ICE 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 provided in **Condition E5-10(b)** of this permit. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency 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.

TAPCR 1200-03-09-.03(8) and 40 CFR §63.6640(f)

Compliance Method: Compliance with this emission standard may be demonstrated by the record keeping required by **Condition E5-20** of this permit.

E5-11. For engine T-Aux-01, the permittee must meet the following requirements, except during periods of startup:

- (a) Change oil and filter every 500 hours of operation or within 1 year + 30 days of the previous change, whichever comes first; however, the permittee has the option to utilize an oil analysis program as described in **Condition E5-12** of this permit in order to extend the specified oil change requirement.
- (b) Inspect spark plugs every 1,000 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary
- (c) Inspect all hoses and belts every 500 hours of operation to within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary

TAPCR 1200-03-09-.03(8) and 40 CFR §63.6602 Table 2c, Item 6 and 63.6640(a) Table 6, Item 9

Compliance Method: Compliance with this emission standard may be demonstrated by the record keeping required by **Condition E5-18** of this permit and by operating and maintaining the engine in accordance with **Condition E5-14** of this permit.

E5-12. The permittee has the option of utilizing an oil analysis program in order to extend the specified oil and filter change requirement in **Condition E5-11** of this permit. The oil analysis must be performed at the same frequency specified for changing the oil and filter in **Condition E5-11** of this permit. The analysis program must at a minimum analyze the following three parameters: Total Acid Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Acid Number increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from Total Acid Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the permittee is not required to change the oil and filter. If any of the limits are exceeded, the permittee must change the oil and filter within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the permittee must change the oil and filter within 2 business days or before commencing operation, whichever is later. The permittee must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil and filter changes for the engine. The analysis program must be part of the maintenance plan for the engine.

TAPCR 1200-03-09-.03(8) and 40 CFR §63.6625(j)

E5-13. If the emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements as described in **Condition E5-11** of this permit, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under Federal, State, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under Federal, State, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, State, or local law has abated. The permittee must report any failure to perform the management practice on the schedule required and the Federal, State or local law under which the risk was deemed unacceptable.

TAPCR 1200-03-09-.03(8) and 40 CFR §63.6602 Table 2c, Footnote 1

E5-14. For engine T-Aux-01, the permittee must operate and maintain the stationary RICE and after-treatment control device (if any) 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.

40 CFR §§63.6625(e)(2); 63.6640(a) Table 6, Item 9

E5-15. For engine T-Aux-01, the permittee must install a non-resettable hour meter if one is not already installed.

TAPCR 1200-03-09-.03(8) and 40 CFR §63.6625(f)

E5-16. For engines A-Aux-6 and T-Aux-01, the permittee must minimize each engine's time spent at idle during startup and minimize each engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.

TAPCR 1200-03-09-.03(8) and 40 CFR §63.6625(h)

E5-17. For engine T-Aux-01, the permittee must report each instance in which you did not meet the requirements in Table 8 (Attachment #4) to this subpart that apply to you.

TAPCR 1200-03-09-.03(8) and 40 CFR §§63.6640(e); 63.6665

E5-18. The permittee shall maintain records as described below in this condition:

- (a) The permittee must keep records of the occurrence and duration (in hours) of each malfunction of operation (i.e., process equipment)
- (b) Records of actions taken during periods of malfunction to minimize emissions in accordance with **Condition E5-9** of this permit, including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation
- (c) The permittee must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that it was operated and maintained according to the permittee's maintenance plan
- (d) The permittee must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter (See Log 1 of **Condition E5-20** of this permit). The permittee 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.
- (e) The records must be in a form suitable and readily available for expeditious review according to 40 CFR §63.10(b)(1). As specified in 40 CFR §63.10(b)(1), the permittee must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. The permittee 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 40 CFR §63.10(b)(1)

TAPCR 1200-03-09-.03(8) and 40 CFR §§63.6655(a); 63.6655(e); 63.6655(f); 63.6660

E5-19. The permittee must report each instance in which the permittee did not meet each operating limitation included in **Condition E5-11** of this permit. These instances are deviations from the operating limitations in 40 CFR Part 63, Subpart ZZZZ, and must be reported according to the following:

- (a) In accordance with the provisions of §63.6650(f), the following report must be included with the Semi-Annual Compliance Report required by **Condition E2(a)** of this permit. The deviation must be reported in the next Semi-Annual Compliance Report following the deviation from the operating limitations specified in **Condition E5-11** of this permit. This report should only be submitted if deviations occur during the reporting period.
- (b) The report must contain the following information:
 1. Company name and address
 2. Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report
 3. Date of report and beginning and ending dates of the reporting period
 4. Engine site rating in brake HP, year construction of the engine commenced (as defined in § 63.2, where the exact year is not known, provide the best estimate), and type of engine (CI, SI 2SLB, SI 4SLB, or SI 4SRB).
 5. Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.
 6. The total operating time (in hours) of the stationary RICE at which the deviation occurred during the reporting period
 7. Information on the number, duration (in hours), and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

TAPCR 1200-03-09-.03(8) and 40 CFR §§63.6640(b); 63.6650(f)

E5-20. For engines A-Aux-6 and T-Aux-01, the permittee must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The permittee 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, in a form that readily shows compliance with **Condition E5-10** of this permit (see example below). The permittee shall retain this record at the source location for a period of not less than five (5) years and keep this record available for inspection by the Technical Secretary or a Division representative.

Log 1 (Operating Hours): Source 83-0008-02

Engine:

Year:

Year	Operating Hours				
	Non-emergency operation				
	Hours used to supply power as part of a financial arrangement with another entity	Maintenance checks & readiness testing	Total non-emergency operation		
Month				Emergency operation	Comments**
January					
February					
etc.					
Totals					
** The permittee 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.					

TAPCR 1200-03-09-.03(8), and 40 CFR §63.6655(f)

Compliance Method: Compliance with this condition shall be assured based on information available to the Technical Secretary which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

83-0008-03 Source Description Two natural gas-fired heaters and two natural gas-fired evaporators

NESHAPS 40 CFR Part 63 Subpart DDDDD for major source of HAPs apply

Conditions E6-1 through E6-14 apply to source 83-0008-03

- E6-1.** The unit #, model, type, and rated heat input rate of the two natural gas-fired jacket water heaters, and two natural gas-fired waste water evaporators are shown in the table below. This condition is a statement of the rated heat input rate for the heaters/evaporators. Should the permittee need to modify any heater or evaporator in a manner that increases its rated heat input rate, a construction permit or Title V modification shall first be applied for and received in accordance with TAPCR 1200-03-09-.01 or TAPCR 1200-03-09-.02(11)(d)1(i)(V) prior to making the change.

Unit #	Rated Heat Input (HHV) (MMBtu/hr)
Jacket Water Heater "A" – 87-Heater-01	4.0
Jacket Water Heater "C" & "D" – 87-Heater-03	4.5
Water Evaporator – 87-Heater-20	0.75
Water Evaporator – 87-Heater-21	0.395

TAPCR 1200-03-09-.01(1)(d); 1200-03-09-.03(8) and the applications dated August 1, 2023 and July 9, 2025

Compliance Method: The permittee shall maintain documentation to demonstrate the rated heat input rate, and power output capacity of each heater/evaporator. Documentation may include, but is not limited to, purchase records, operating manuals, or a tag affixed to the unit by the manufacturer. These documents shall be kept readily available/accessible and made available upon request by the Technical Secretary or a Division representative.

- E6-2.** Particulate matter emitted from this source shall not exceed 0.07 pounds per hour, daily average basis.

TAPCR 1200-03-06-.01(7) and the applications dated August 1, 2023 and July 9, 2025

Compliance Method: The potential particulate matter emissions from this source are less than 5 tons per year. By annual certification of compliance, the permittee shall be considered to meet the monitoring and related recordkeeping and reporting requirements of TAPCR 1200-03-09-.02(11)(e)1(iii) and 1200-03-10-.04(2)(b)(1), and the compliance requirements of TAPCR 1200-03-09-.02(11)(e)3(i).

- E6-3.** Sulfur dioxide emitted from this source shall not exceed 0.14 pounds per hour, on a daily average basis.

TAPCR 1200-03-14-.01(3) and the applications dated August 1, 2023 and July 9, 2025

Compliance Method: The potential sulfur dioxide emissions from this source are less than 5 tons per year. By annual certification of compliance, the permittee shall be considered to meet the monitoring and related recordkeeping and reporting requirements of TAPCR 1200-03-09-.02(11)(e)1(iii) and 1200-03-10-.04(2)(b)(1), and the compliance requirements of TAPCR 1200-03-09-.02(11)(e)3(i).

- E6-4.** For annual emission fee payment purposes only, Volatile Organic Compounds (VOC) emitted from this source will not exceed 0.18 tons during any period of 12 consecutive months.

TAPCR 1200-03-26-.02(9)

Compliance Method: None. This is a statement of the source potential to emit for annual emission fee payment purposes only.

- E6-5.** For annual emission fee payment purposes only, Nitrogen oxides (NO_x) emitted from this source will not exceed 4.12 tons during any period of 12 consecutive months.

TAPCR 1200-03-26-.02(9)

Compliance Method: None. This is a statement of the source potential to emit for annual emission fee payment purposes only.

- E6-6.** The permittee shall comply with the applicable provisions of the **National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers and Process Heaters**, as promulgated by the United States Environmental Protection Agency under **40 CFR Part 63, Subpart DDDDD**. The final rules found in 40 CFR Part 63, Subpart DDDDD establish national emission standards for hazardous air pollutants (NESHAP), operational limits, work practice standards, and compliance requirements for industrial, commercial, and institutional boilers located at a major source of hazardous air pollutants (HAP).

TAPCR 1200-03-09-.03(8) and 40 CFR §§63.6(b)(2), 63.7485, 63.7490, and 63.7495

Compliance Method: Compliance with this condition shall be assured based on information available to the Technical Secretary which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

- E6-7.** For the purposes of 40 CFR Part 63, Subpart DDDDD, each of the units in this source is an existing source in the units designed to only burn gas 1 fuels (subcategory) and therefore are not subject to the emission limits in Tables 1 and 2, or 11 through 13 of 40 CFR Part 63, Subpart DDDDD or the operating limits in Table 4 to 40 CFR Part 63, Subpart DDDDD. However, the units are subject to tune-ups requirements, conducted in accordance with **Condition E6-9** of this permit.

TAPCR 1200-03-09-.03(8) and 40 CFR §§63.7500(e) and 63.7540(a)(11) through (13)

Compliance Method: None. This is a statement of rule applicability only.

- E6-8.** The permittee must complete an initial tune-up and inspection on each of the units in this source no later than January 31, 2016; unless it is not in operation at this time, where a tune-up must be completed within 30 days after its restart. Following the initial tune-up, the permittee must have subsequent tune-ups and inspections conducted on each of the units in this source within the applicable 5-year schedule (no more than 61 months after the previous tune-up and inspection). The inspection includes measuring the concentration of CO in the effluent gas stream in ppmv and oxygen in volume percent, at high fire or typical operating load and both before and after the tune-up; and maintaining a record/report of the results of the inspection.

TAPCR 1200-03-09-.03(8) and 40 CFR §§63.7500(e), 63.7510(e) and (j), 63.7515(d) and (g), 63.7540(a)(11) through (13), and Item #1 of Table 3 to 40 CFR Part 63, Subpart DDDDD

Compliance Method: The permittee completed the Initial Compliance Demonstration including the required initial tune-up on December, 2015, meeting the January 31, 2016, compliance date. Compliance with the requirement to complete a tune-up every 5 years is demonstrated by conducting the required subsequent tune-ups every 5 years, beginning on October 13, 2015, and by the reports required by **Conditions E2(c)1 and E6-14** of this permit.

- E6-9.** Each tune-up conducted to demonstrate compliance with the requirements of 40 CFR Part 63 Subpart DDDDD shall include the following elements:

- (a) As applicable, inspection of the burner, and cleaning or replacing of any components of the burner as necessary (the permittee may perform the burner inspection any time prior to the tune-up or 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;
- (b) Inspection of the flame pattern, as applicable, and adjustment of the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;
- (c) Inspection of the system controlling the air-to-fuel ratio, as applicable, and verification that it is correctly calibrated and functioning properly (the permittee may delay the inspection until the next scheduled unit shutdown);
- (d) Optimization of total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO_x requirement to which the unit is subject;
- (e) Measurement of 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;
- (f) Maintaining on-site and submitting, if requested by the Technical Secretary, a report containing the information in paragraphs (1) through (3) below,
 1. 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;
 2. A description of any corrective actions taken as a part of the tune-up; and

3. 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.

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

TAPCR 1200-03-09-.03(8) and 40 CFR §§63.7500(e), 63.7510(e) and (j), 63.7515(d) 63.7540(a)(11) through (13), and Table 3 to 40 CFR Part 63, Subpart DDDDD

Compliance Method: Compliance with this condition shall be assured based on information available to the Technical Secretary which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

- E6-10.** The permittee shall meet the applicable requirements of the General Provision in 40 CFR Part 63, Subpart A as identified in Table 10 to 40 CFR Part 63, Subpart DDDDD.

TAPCR 1200-03-09-.03(8) and 40 CFR §63.7565

Compliance Method: Compliance with this condition shall be assured based on information available to the Technical Secretary which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

- E6-11.** Each of the units in this source must be operated and maintained in a manner consistent with safety and good air pollution control practices for minimizing emissions.

TAPCR 1200-03-09-.03(8) and 40 CFR §63.7500(a)(3)

Compliance Method: Compliance with this condition shall be assured based on information available to the Technical Secretary which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

- E6-12.** The permittee shall maintain records of the following information for each of the units in this source. These records shall be retained for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. The records must be kept on site, or they must be accessible from on site (for example, through a computer network), for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR §63.10(b)(1). The records may be kept off site for the remaining 3 years. Logs and records are not required to be submitted semiannually unless specified in **Conditions E2(a)1 or E2(c)** of this permit.

- (a) a copy of each notification and report that is submitted to comply with 40 CFR Part 63 Subpart DDDDD, including all documentation supporting the Initial Notification and all subsequent Notifications of Compliance Status and/or 5-year compliance reports
- (b) actions taken during periods of malfunction to minimize emissions, including corrective actions to restore the equipment to normal operations

TAPCR 1200-03-09-.03(8) and 40 CFR §§63.7555, 63.7560, 63.10(b) and (c)

Compliance Method: Compliance with this condition shall be assured based on information available to the Technical Secretary which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

E6-13. The permittee must submit all of the applicable notifications in §63.9(b) through (h), including the Notification of Compliance Status containing the results of the initial compliance demonstration. The Initial Notification of Compliance Status report must contain the following information:

- (a) A description of the affected unit(s) including identification of which subcategories the unit is in, the design heat input capacity of the unit, a description of the add-on controls used on the unit to comply with this subpart, description of the fuel(s) burned, including whether the fuel(s) were a secondary material determined by you or the EPA through a petition process to be a non-waste under §241.3 of this chapter, whether the fuel(s) were a secondary material processed from discarded nonhazardous secondary materials within the meaning of §241.3 of this chapter, and justification for the selection of fuel(s) burned during the compliance demonstration.
- (b) the following certification(s) of compliance, as applicable, and signed by a responsible official:
 - 1. “This facility completed the required initial tune-up for all of the boilers and process heaters covered by 40 CFR Part 63, Subpart DDDDD at this site according to the procedures in §63.7540(a)(10)(i) through (vi).”
 - 2. “This facility has had an energy assessment performed according to §63.7530(e).” 40 CFR §§63.7545, 63.7530(e) and (f), and 63.9(b) through (h)

Compliance Method: Compliance with this condition shall be assured based on information available to the Technical Secretary which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. The permittee submitted the Initial Notification of Compliance Status containing the results of the initial compliance demonstration on January 26, 2016.

E6-14. The permittee shall submit 5-year compliance reports. The first compliance report must cover the period beginning on the compliance date, January 31, 2016, and ending on December 31, 2020. Subsequent compliance reports after the initial report will cover the 5-year periods following the first report. Reports must be postmarked or delivered no later than the first January 31 after the report period ends. The reports shall include:

- (a) the company and facility name and address
- (b) process unit information, emissions limitations, and operating parameter limitations
- (c) the date of report and beginning and ending dates of the reporting period
- (d) Include the date of the most recent tune-up. Include the date of the most recent burner inspection if it was not done on a 5-year period and was delayed until the next scheduled or unscheduled unit shutdown.
- (e) Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report

These reports must be submitted as specified in **Condition E2(c)** of this permit.

TAPCR 1200-03-09-.03(8) and 40 CFR §§63.7550(a) through (c), 63.7540(b) and Table 9 to 40 CFR Part 63, Subpart DDDDD

Compliance Method: Compliance with this condition shall be assured based on information available to the Technical Secretary which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

END OF PERMIT 581660

ATTACHMENT #1

Title V Fee Selection Form APC 36 (CN-1583) (Rev. 4-19)

PROPOSED



TITLE V FEE SELECTION

Type or print and submit to the email address above.			
FACILITY INFORMATION			
1. Organization's legal name and SOS control number [as registered with the TN Secretary of State (SOS)]			
2. Site name (if different from legal name)			
3. Site address (St./Rd./Hwy.)			County name
City			Zip code
4. Emission source reference number		5. Title V permit number	
FEE SELECTION			
This fee selection is effective beginning January 1, _____. When approved, this selection will be effective until a new Fee Selection form is submitted. Fee Selection forms must be submitted on or before December 31 of the annual accounting period.			
6. Payment Schedule (choose one):			
Calendar Year Basis (January 1 – December 31) ☐		Fiscal Year Basis (July 1 – June 30) ☐	
7. Payment Basis (choose one):			
Actual Emissions Basis ☐ Allowable Emissions Basis ☐ Combination of Actual and Allowable Emissions Basis ☐			
8. If Payment Basis is "Actual Emissions" or "Combination of Actual and Allowable Emissions", complete the following table for each permitted source and each pollutant for which fees are due for that source. See instructions for further details.			
Source ID	Pollutant	Allowable or Actual Emissions	If allowable emissions: Specify condition number and limit. If actual emissions: Describe calculation method and provide example. Provide condition number that specifies method, if applicable.

8. (Continued)					
Source ID	Pollutant	Allowable or Actual Emissions	If allowable emissions: Specify condition number and limit. If actual emissions: Describe calculation method and provide example. Provide condition number that specifies method, if applicable.		
CONTACT INFORMATION (BILLING)					
9. Billing contact				Phone number with area code	
Mailing address (St./Rd./Hwy.)				Fax number with area code	
City		State	Zip code	Email address	
SIGNATURE BY RESPONSIBLE OFFICIAL					
Based upon information and belief formed after reasonable inquiry, I, as the responsible person of the above mentioned facility, certify that the information contained in the submittal is accurate and true to the best of my knowledge. As specified in TCA Section 39-16-702(a)(4), this declaration is made under penalty of perjury.					
10. Signature					Date
Signer's name (type or print)			Title	Phone number with area code	

ATTACHMENT #2

Notification of Changes

PROPOSED

Notification of Changes

Facility (Permittee) Tennessee Gas Pipeline, L.L.C. - Compressor Station 87

Facility ID 83-0008

Source No.

	Control Equipment	Stack Height (Feet)	Stack Diameter (Feet)	Exit Velocity (Feet/Second)	Exit Temperature (°F)
Current					
Proposed					
Current					
Proposed					
Current					
Proposed					

Comments:

As the Responsible Person of the above mentioned facility (permittee), I certify that the information contained in this Notification is accurate and true to the best of my knowledge. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Signature		Date
Signer's name (print)	Title	Phone (with area code)

ATTACHMENT #3

FERC NGA GAS TARIFF EXCERPT

PROPOSED

GENERAL TERMS AND CONDITIONS (continued)

II. QUALITY

1. Composition of gas: The gas delivered by Transporter or received by Transporter from Shipper(s) shall be a combustible gas consisting wholly or in part of:
 - (a) Natural gas of the quality and composition produced by nature in petroleum, oil, and gas fields.
 - (b) Gas from revaporized liquefied natural gas.
 - (c) Manufactured, synthesized or mixed gas consisting essentially of the hydrocarbons of the quality and character of natural gas such that when it is comingled with natural gas, the two become indistinguishable.
 - (d) Gas derived and recovered from biomass such as dairy-derived biomethane, methane recovered from a landfill, or methane recovered from a wastewater treatment facility, such that when it is comingled with natural gas, the two become indistinguishable.
2. Transporter, in its own right or in accord with the instructions of Shipper, may subject, or permit the subjection of, the natural gas to compression, cooling, cleaning and other processes and helium, natural gasoline, butane, propane, and any other hydrocarbons except methane may be removed prior to delivery to Shipper. Title to the products will remain with the party that has contracted for the processing rights and notified Transporter of such contract; otherwise, title to the products will remain with Transporter.
3. The provisions set forth in this Article II Section 3 shall apply to all gas delivered by Transporter under this FERC Gas Tariff.
 - (a) Heating value: The natural gas shall have a total heating value of not less than nine hundred and sixty-seven British thermal units per cubic foot nor more than eleven hundred and ten British thermal units. In the event that the total heating value of gas, per cubic foot, when determined by a chromatograph or chromatographic analysis of a sample of gas, falls below nine hundred and sixty-seven or above eleven hundred and ten British thermal units per cubic foot, Shipper shall have the option to refuse to accept said gas so long as said total heating value remains below nine hundred and sixty-seven or above eleven hundred and ten British thermal units per cubic foot.
 - (b) Wobbe Number: The gas shall have a Wobbe Number of at least 1314 but no more than 1400. The Wobbe Number shall be calculated by dividing the total heating value (dry) of the gas (at standard conditions of 14.73 psia and 60 degrees Fahrenheit) by the square root of the specific gravity of the gas.
 - (c) Non-Methane Hydrocarbons: The gas shall not contain more than 12% by volume of non-methane (C2+) hydrocarbons.
 - (d) Heavier Hydrocarbons: The gas shall not contain more than 1.5% by volume of heavier hydrocarbons (C4+).
 - (e) Carbon Dioxide: The gas shall not contain more than 2% by volume of carbon dioxide.
 - (f) Total Sulfur: The gas shall not contain more than five (5) grains of total sulfur (including mercaptans) per 100 cubic feet.
 - (g) Total Diluents: The gas shall not contain more than 4% by volume total diluents, which shall be the combined nitrogen, carbon dioxide, and oxygen by volume, provided however, that the carbon dioxide content does not exceed 2% and the combined nitrogen and oxygen content does not exceed 2.75%.

ATTACHMENT #4

General Provisions for sources subject to 40 CFR Part 63 Subpart ZZZZ

PROPOSED

General provisions citation	Subject of citation	Applies to subpart	Explanation
§63.1	General applicability of the General Provisions	Yes	
§63.2	Definitions	Yes	Additional terms defined in §63.6675.
§63.3	Units and abbreviations	Yes	
§63.4	Prohibited activities and circumvention	Yes	
§63.5	Construction and reconstruction	Yes	
§63.6(a)	Applicability	Yes	
§63.6(b)(1)–(4)	Compliance dates for new and reconstructed sources	Yes	
§63.6(b)(5)	Notification	Yes	
§63.6(b)(6)	[Reserved]		
§63.6(b)(7)	Compliance dates for new and reconstructed area sources that become major sources	Yes	
§63.6(c)(1)–(2)	Compliance dates for existing sources	Yes	
§63.6(c)(3)–(4)	[Reserved]		
§63.6(c)(5)	Compliance dates for existing area sources that become major sources	Yes	
§63.6(d)	[Reserved]		
§63.6(e)	Operation and maintenance	No	
§63.6(f)(1)	Applicability of standards	No	
§63.6(f)(2)	Methods for determining compliance	Yes	
§63.6(f)(3)	Finding of compliance	Yes	
§63.6(g)(1)–(3)	Use of alternate standard	Yes	
§63.6(h)	Opacity and visible emission standards	No	Subpart ZZZZ does not contain opacity or visible emission standards.
§63.6(i)	Compliance extension procedures and criteria	Yes	
§63.6(j)	Presidential compliance exemption	Yes	
§63.7(a)(1)–(2)	Performance test dates	Yes	Subpart ZZZZ contains performance test dates at §§63.6610, 63.6611, and 63.6612.
§63.7(a)(3)	CAA section 114 authority	Yes	
§63.7(b)(1)	Notification of performance test	Yes	Except that §63.7(b)(1) only applies as specified in §63.6645.
§63.7(b)(2)	Notification of rescheduling	Yes	Except that §63.7(b)(2) only applies as specified in §63.6645.
§63.7(c)	Quality assurance/test plan	Yes	Except that §63.7(c) only applies as specified in §63.6645.
§63.7(d)	Testing facilities	Yes	

General provisions citation	Subject of citation	Applies to subpart	Explanation
§63.7(e)(1)	Conditions for conducting performance tests	No	Subpart ZZZZ specifies conditions for conducting performance tests at §63.6620.
§63.7(e)(2)	Conduct of performance tests and reduction of data	Yes	Subpart ZZZZ specifies test methods at §63.6620.
§63.7(e)(3)	Test run duration	Yes	
§63.7(e)(4)	Administrator may require other testing under section 114 of the CAA	Yes	
§63.7(f)	Alternative test method provisions	Yes	
§63.7(g)	Performance test data analysis, recordkeeping, and reporting	Yes	
§63.7(h)	Waiver of tests	Yes	
§63.8(a)(1)	Applicability of monitoring requirements	Yes	Subpart ZZZZ contains specific requirements for monitoring at §63.6625.
§63.8(a)(2)	Performance specifications	Yes	
§63.8(a)(3)	[Reserved]		
§63.8(a)(4)	Monitoring for control devices	No	
§63.8(b)(1)	Monitoring	Yes	
§63.8(b)(2)–(3)	Multiple effluents and multiple monitoring systems	Yes	
§63.8(c)(1)	Monitoring system operation and maintenance	Yes	
§63.8(c)(1)(i)	Routine and predictable SSM	Yes	
§63.8(c)(1)(ii)	SSM not in Startup Shutdown Malfunction Plan	Yes	
§63.8(c)(1)(iii)	Compliance with operation and maintenance requirements	Yes	
§63.8(c)(2)–(3)	Monitoring system installation	Yes	
§63.8(c)(4)	Continuous monitoring system (CMS) requirements	Yes	Except that subpart ZZZZ does not require Continuous Opacity Monitoring System (COMS).
§63.8(c)(5)	COMS minimum procedures	No	Subpart ZZZZ does not require COMS.
§63.8(c)(6)–(8)	CMS requirements	Yes	Except that subpart ZZZZ does not require COMS.
§63.8(d)	CMS quality control	Yes	
§63.8(e)	CMS performance evaluation	Yes	Except for §63.8(e)(5)(ii), which applies to COMS.
			Except that §63.8(e) only applies as specified in §63.6645.
§63.8(f)(1)–(5)	Alternative monitoring method	Yes	Except that §63.8(f)(4) only applies as specified in §63.6645.
§63.8(f)(6)	Alternative to relative accuracy test	Yes	Except that §63.8(f)(6) only applies as specified in §63.6645.

General provisions citation	Subject of citation	Applies to subpart	Explanation
§63.8(g)	Data reduction	Yes	Except that provisions for COMS are not applicable. Averaging periods for demonstrating compliance are specified at §§63.6635 and 63.6640.
§63.9(a)	Applicability and State delegation of notification requirements	Yes	
§63.9(b)(1)–(5)	Initial notifications	Yes	Except that §63.9(b)(3) is reserved.
			Except that §63.9(b) only applies as specified in §63.6645.
§63.9(c)	Request for compliance extension	Yes	Except that §63.9(c) only applies as specified in §63.6645.
§63.9(d)	Notification of special compliance requirements for new sources	Yes	Except that §63.9(d) only applies as specified in §63.6645.
§63.9(e)	Notification of performance test	Yes	Except that §63.9(e) only applies as specified in §63.6645.
§63.9(f)	Notification of visible emission (VE)/opacity test	No	Subpart ZZZZ does not contain opacity or VE standards.
§63.9(g)(1)	Notification of performance evaluation	Yes	Except that §63.9(g) only applies as specified in §63.6645.
§63.9(g)(2)	Notification of use of COMS data	No	Subpart ZZZZ does not contain opacity or VE standards.
§63.9(g)(3)	Notification that criterion for alternative to RATA is exceeded	Yes	If alternative is in use.
			Except that §63.9(g) only applies as specified in §63.6645.
§63.9(h)(1)–(6)	Notification of compliance status	Yes	Except that notifications for sources using a CEMS are due 30 days after completion of performance evaluations. §63.9(h)(4) is reserved.
			Except that §63.9(h) only applies as specified in §63.6645.
§63.9(i)	Adjustment of submittal deadlines	Yes	
§63.9(j)	Change in previous information	Yes	
§63.10(a)	Administrative provisions for recordkeeping/reporting	Yes	
§63.10(b)(1)	Record retention	Yes	
§63.10(b)(2)(i)–(v)	Records related to SSM	No	
§63.10(b)(2)(vi)–(xi)	Records	Yes	
§63.10(b)(2)(xii)	Record when under waiver	Yes	
§63.10(b)(2)(xiii)	Records when using alternative to RATA	Yes	For CO standard if using RATA alternative.
§63.10(b)(2)(xiv)	Records of supporting documentation	Yes	

General provisions citation	Subject of citation	Applies to subpart	Explanation
§63.10(b)(3)	Records of applicability determination	Yes	
§63.10(c)	Additional records for sources using CEMS	Yes	Except that §63.10(c)(2)–(4) and (9) are reserved.
§63.10(d)(1)	General reporting requirements	Yes	
§63.10(d)(2)	Report of performance test results	Yes	
§63.10(d)(3)	Reporting opacity or VE observations	No	Subpart ZZZZ does not contain opacity or VE standards.
§63.10(d)(4)	Progress reports	Yes	
§63.10(d)(5)	Startup, shutdown, and malfunction reports	No	
§63.10(e)(1) and (2)(i)	Additional CMS Reports	Yes	
§63.10(e)(2)(ii)	COMS-related report	No	Subpart ZZZZ does not require COMS.
§63.10(e)(3)	Excess emission and parameter exceedances reports	Yes	Except that §63.10(e)(3)(i) (C) is reserved.
§63.10(e)(4)	Reporting COMS data	No	Subpart ZZZZ does not require COMS.
§63.10(f)	Waiver for recordkeeping/reporting	Yes	
§63.11	Flares	No	
§63.12	State authority and delegations	Yes	
§63.13	Addresses	Yes	
§63.14	Incorporation by reference	Yes	
§63.15	Availability of information	Yes	

ATTACHMENT #5

General Provisions for sources subject to 40 CFR Part 63 Subpart DDDDD

PROPOSED

General provisions citation	Subject of citation	Applies to subpart	Explanation
§63.1	Applicability	Yes	
§63.2	Definitions	Yes	Additional terms defined in §63.6675.
§63.3	Units and Abbreviations	Yes	
§63.4	Prohibited Activities and Circumvention	Yes	
§63.5	Preconstruction Review and Notification Requirements	Yes	
§63.6(a), (b)(1)-(b)(5), (b)(7), (c)	Compliance with Standards and Maintenance Requirements	Yes	
§63.6(e)(1)(i)	General duty to minimize emissions.	No	See § 63.7500(a)(3) for the general duty requirement.
§63.6(e)(1)(ii)	Requirement to correct malfunctions as soon as practicable.	No	
§63.6(e)(3)	Startup, shutdown, and malfunction plan requirements.	No	
§63.6(f)(1)	Startup, shutdown, and malfunction exemptions for compliance with non-opacity emission standards.	No	
§63.6(f)(2) and (3)	Compliance with non-opacity emission standards.	Yes	
§63.6(g)	Use of alternative standards	Yes	Except § 63.7555(d)(13) specifies the procedure for application and approval of an alternative timeframe with the PM controls requirement in the startup work practice (2).
§63.6(h)(1)	Startup, shutdown, and malfunction exemptions to opacity standards.	No	See § 63.7500(a).
§63.6(h)(2) to (h)(9)	Determining compliance with opacity emission standards	No	Subpart DDDDD specifies opacity as an operating limit not an emission standard.
§63.6(i)	Extension of compliance	Yes	Facilities may also request extensions of compliance for the installation of combined heat and power, waste heat recovery, or gas pipeline or fuel feeding infrastructure as a means of complying with this subpart.
§63.6(j)	Presidential exemption	Yes	
§63.7(a), (b), (c), and (d)	Performance Testing requirements	Yes	
§63.7(e)(1)	Conditions for conducting performance tests	No	Subpart DDDDD specifies conditions for conducting performance tests at § 63.7520(a) to (c).
§ 63.7(e)(2)-(e)(9), (f), (g), and (h)	Performance Testing Requirements	Yes	

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.8(a) and (b) Applicability and Conduct of Monitoring	§ 63.8(a) and (b) Applicability and Conduct of Monitoring	No	
§ 63.8(c)(1)	Operation and maintenance of CMS	Yes	
§ 63.8(c)(1)(i)	General duty to minimize emissions and CMS operation	No	See § 63.7500(a)(3).
§ 63.8(c)(1)(ii)	Operation and maintenance of CMS	Yes	
§ 63.8(c)(1)(iii)	Startup, shutdown, and malfunction plans for CMS	No	
§ 63.8(c)(2) to (c)(9)	Operation and maintenance of CMS	Yes	
§ 63.8(d)(1) and (2)	Monitoring Requirements, Quality Control Program	Yes	
§ 63.8(d)(3)	Written procedures for CMS	Yes	Except for the last sentence, which refers to a startup, shutdown, and malfunction plan. Startup, shutdown, and malfunction plans are not required.
§63.8(e)	Performance evaluation of a CMS	Yes	
§63.8(f)	Use of an alternative monitoring method	Yes	
§63.8(g)	Reduction of monitoring data	Yes	
§63.9	Notification requirements	Yes	
§ 63.10(a), (b)(1)	Recordkeeping and reporting requirements	Yes	
§63.10(b)(2)(i)	Recordkeeping of occurrence and duration of startups or shutdowns	Yes	
§63.10(b)(2)(ii)	Recordkeeping of malfunctions	No	See § 63.7555(d)(7) for recordkeeping of occurrence and duration and § 63.7555(d)(8) for actions taken during malfunctions.
§63.10(b)(2)(iii)	Maintenance records	Yes	
§ 63.10(b)(2)(iv) and (v)	Actions taken to minimize emissions during startup, shutdown, or malfunction	No	
§63.10(b)(2)(vi)	Recordkeeping for CMS malfunctions	Yes	
§ 63.10(b)(2)(vii) to (xiv)	Other CMS requirements	Yes	
§63.10(b)(3)	Recordkeeping requirements for applicability determinations	No	
§63.10(c)(1) to (9)	Recordkeeping for sources with CMS	Yes	
§63.10(c)(10) and (11)	Recording nature and cause of malfunctions, and corrective actions	No	See § 63.7555(d)(7) for recordkeeping of occurrence and duration and § 63.7555(d)(8) for actions taken during malfunctions.

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.10(c)(12) and (13)	Recordkeeping for sources with CMS	Yes	
§63.10(c)(15)	Use of startup, shutdown, and malfunction plan	No	
§63.10(d)(1) and (2)	General reporting requirements	Yes	
§63.10(d)(3)	Reporting opacity or visible emission observation results	No	
§63.10(d)(4)	Progress reports under an extension of compliance	Yes	
§63.10(d)(5)	Startup, shutdown, and malfunction reports	No	See § 63.7550(c)(11) for malfunction reporting requirements.
§ 63.10(e)	Additional reporting requirements for sources with CMS	Yes	
§63.10(f)	Waiver of recordkeeping or reporting requirements	Yes	
§63.11	Control Device Requirement	No	
§63.12	State Authority and Delegation	Yes	
§63.13-63.16	Addresses, Incorporation by Reference, Availability of Information, Performance Track Provisions	Yes	
§ 63.1(a)(5),(a)(7)-(a)(9), (b)(2), (c)(3)-(4), (d), 63.6(b)(6), (c)(3), (c)(4), (d), (e)(2), (e)(3)(ii), (h)(3), (h)(5)(iv), 63.8(a)(3), 63.9(b)(3), (h)(4), 63.10(c)(2)-(4), (c)(9).	Reserved	No	

ATTACHMENT #6

**OPACITY MATRIX DECISION TREE for
VISIBLE EMISSION EVALUATION METHOD 9
Dated June 18, 1996 and amended September 11, 2013**

PROPOSED

Decision Tree PM for Opacity for Sources Utilizing EPA Method 9*

Notes:

PM = Periodic Monitoring required by 1200-03-09-.02(11)(e)(iii).

This Decision Tree outlines the criteria by which major sources can meet the periodic monitoring and testing requirements of Title V for demonstrating compliance with the visible emission standards set forth in the permit. It is not intended to determine compliance requirements for EPA's Compliance Assurance Monitoring (CAM) Rule (formerly referred to as Enhanced Monitoring – Proposed 40 CFR 64).

Examine each emission unit using this Decision Tree to determine the PM required.*

Use of continuous emission monitoring systems eliminates the need to do any additional periodic monitoring.

Visible Emission Evaluations (VEEs) are to be conducted utilizing EPA Method 9. The observer must be properly certified to conduct valid evaluations.

Typical Pollutants

Particulates, VOC, CO, SO₂, NO_x, HCl, HF, HBr, Ammonia, and Methane.

Initial observations are to be repeated within 90 days of startup of a modified source, if a new construction permit is issued for modification of the source.

A VEE conducted by TAPCD personnel after the Title V permit is issued will also constitute an initial reading.

Reader Error

EPA Method 9, Non-NSPS or NESHAPS stipulated opacity standards: The TAPCD guidance is to declare non-compliance when the highest six-minute average** exceeds the standard plus 6.8% opacity (e.g. 26.8% for a 20% standard).

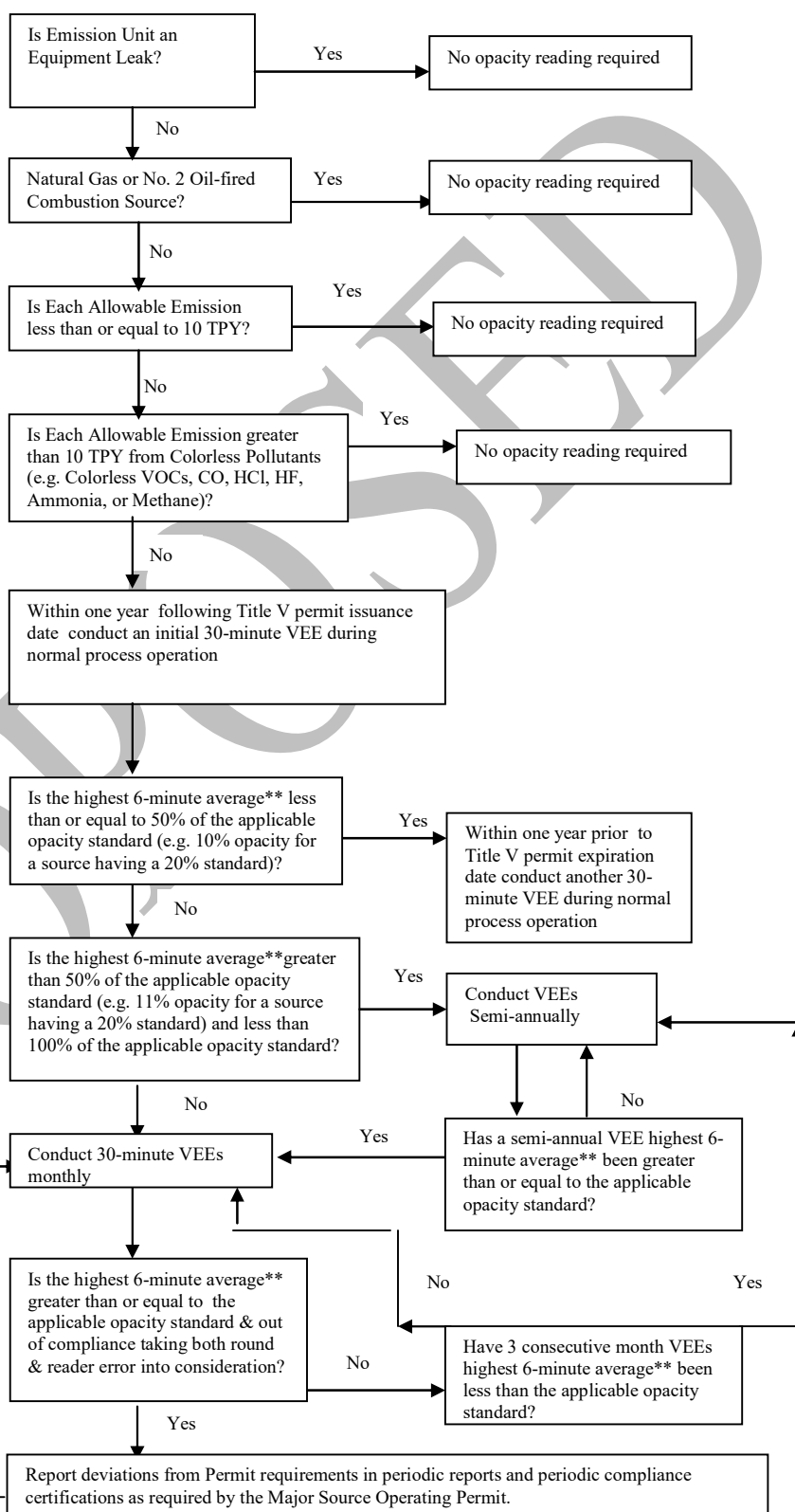
EPA Method 9, NSPS or NESHAPS stipulate opacity standards:

EPA guidance is to allow only engineering round. No allowance for reader error is given.

*Not applicable to Asbestos manufacturing subject to 40 CFR 61.142

**Or second highest six-minute average, if the source has an exemption period stipulated in either the regulations or in the permit.

Dated June 18, 1996
Amended September 11, 2013



ATTACHMENT #7

**EPA AP-42 FIFTH EDITION, VOLUME I
CHAPTER 3, STATIONARY INTERNAL COMBUSTION SOURCES
UNCONTROLLED EMISSION FACTORS FOR
2-STROKE LEAN-BURN ENGINES, 4-STROKE LEAN-BURN ENGINES,
& 4-STROKE RICH-BURN ENGINES
Dated October 2024**

PROPOSED

TABLE 3.2-1 UNCONTROLLED EMISSION FACTORS FOR 2-STROKE LEAN-BURN ENGINES ^a

(SCC 2-02-002-52)

Pollutant	Emission Factor (lb/MMBtu) ^b (fuel input)	Emission Factor Rating
Criteria Pollutants and Greenhouse Gases		
NOx ^c 90 - 105% Load	3.17 E+00	A
NOx ^c <90% Load	1.94 E+00	A
CO ^c 90 - 105% Load	3.86 E-01	A
CO ^c <90% Load	3.53 E-01	A
CO ₂ ^d	1.10 E+02	A
SO ₂ ^e	5.88 E-04	A
TOC ^f	1.64 E+00	A
Methane ^g	1.45 E+00	C
VOC ^h	1.20 E-01	C
PM10 (filterable) ⁱ	3.84 E-02	C
PM2.5 (filterable) ⁱ	3.84 E-02	C
PM Condensable ^j	9.91 E-03	E
Trace Organic Compounds		
1,1,2,2-Tetrachloroethane ^k	6.63 E-05	C
1,1,2-Trichloroethane ^k	5.27 E-05	C
1,1-Dichloroethane	3.91 E-05	C
1,2,3-Trimethylbenzene	3.54 E-05	D
1,2,4-Trimethylbenzene	1.11 E-04	C
1,2-Dichloroethane	4.22 E-05	D
1,2-Dichloropropane	4.46 E-05	C
1,3,5-Trimethylbenzene	1.80 E-05	D
1,3-Butadiene ^k	8.20 E-04	D
1,3-Dichloropropene ^k	4.38 E-05	C
2,2,4-Trimethylpentane ^k	8.46 E-04	B
2-Methylnaphthalene ^k	2.14 E-05	C
Acenaphthene ^k	1.33 E-06	C

Table 3.2-1. UNCONTROLLED EMISSION FACTORS FOR 2-STROKE LEAN-BURN ENGINES
(Continued)

Pollutant	Emission Factor (lb/MMBtu) ^b (fuel input)	Emission Factor Rating
Acenaphthylene ^k	3.17 E-06	C
Acetaldehyde ^{k, l}	7.76 E-03	A
Acrolein ^{k, l}	7.78 E-03	A
Anthracene ^k	7.18 E-07	C
Benz(a)anthracene ^k	3.36 E-07	C
Benzene ^k	1.94 E-03	A
Benzo(a)pyrene ^k	5.68 E-09	D
Benzo(b)fluoranthene ^k	8.51 E-09	D
Benzo(e)pyrene ^k	2.34 E-08	D
Benzo(g,h,i)perylene ^k	2.48 E-08	D
Benzo(k)fluoranthene ^k	4.26 E-09	D
Biphenyl ^k	3.95 E-06	C
Butane	4.75 E-03	C
Butyr/Isobutyraldehyde	4.37 E-04	C
Carbon Tetrachloride ^k	6.07 E-05	C
Chlorobenzene ^k	4.44 E-05	C
Chloroform ^k	4.71 E-05	C
Chrysene ^k	6.72 E-07	C
Cyclohexane	3.08 E-04	C
Cyclopentane	9.47 E-05	C
Ethane	7.09 E-02	A
Ethylbenzene ^k	1.08 E-04	B
Ethylene Dibromide ^k	7.34 E-05	C
Fluoranthene ^k	3.61 E-07	C
Fluorene ^k	1.69 E-06	C
Formaldehyde ^{k, l}	5.52 E-02	A

Table 3.2-1. UNCONTROLLED EMISSION FACTORS FOR 2-STROKE LEAN-BURN ENGINES
(Continued)

Pollutant	Emission Factor (lb/MMBtu) ^b (fuel input)	Emission Factor Rating
Indeno(1,2,3-c,d)pyrene ^k	9.93 E-09	D
Isobutane	3.75 E-03	C
Methanol ^k	2.48 E-03	A
Methylcyclohexane	3.38 E-04	C
Methylene Chloride ^k	1.47 E-04	C
n-Hexane ^k	4.45 E-04	C
n-Nonane	3.08 E-05	C
n-Octane	7.44 E-05	C
n-Pentane	1.53 E-03	C
Naphthalene ^k	9.63 E-05	C
PAH ^k	1.34 E-04	D
Perylene ^k	4.97 E-09	D
Phenanthrene ^k	3.53 E-06	C
Phenol ^k	4.21 E-05	C
Propane	2.87 E-02	C
Pyrene ^k	5.84 E-07	C
Styrene ^k	5.48 E-05	A
Toluene ^k	9.63 E-04	A
Vinyl Chloride ^k	2.47 E-05	C
Xylene ^k	2.68 E-04	A

^a Reference 7. Factors represent uncontrolled levels. For NO_x, CO, and PM₁₀, "uncontrolled" means no combustion or add-on controls; however, the factor may include turbocharged units. For all other pollutants, "uncontrolled" means no oxidation control; the data set may include units with control techniques used for NO_x control, such as PCC and SCR for lean burn engines, and PSC for rich burn engines. Factors are based on large population of engines. Factors are for engines at all loads, except as indicated. SCC = Source Classification Code. TOC = Total Organic Compounds. PM₁₀ = Particulate Matter ≤10 microns (Fm) aerodynamic diameter. A "<" sign in front of a factor means that the corresponding emission factor is based on one-half of the method detection limit.

^b Emission factors were calculated in units of (lb/MMBtu) based on procedures in EPA

Method 19. To convert from (lb/MMBtu) to (lb/10⁶ scf), multiply by the heat content of the fuel. If the heat content is not available, use 1020 Btu/scf. To convert from (lb/MMBtu) to (lb/hp-hr) use the following equation:

$$\text{lb/hp-hr} = (\text{lb/MMBtu}) (\text{heat input, MMBtu/hr}) (1/\text{operating HP, 1/hp})$$

^c Emission tests with unreported load conditions were not included in the data set.

^d Based on 99.5% conversion of the fuel carbon to CO₂. CO₂ [lb/MMBtu] = (3.67)(%CON)(C)(D)(1/h), where %CON = percent conversion of fuel carbon to CO₂, C = carbon content of fuel by weight (0.75), D = density of fuel, 4.1 E+04 lb/10⁶ scf, and h = heating value of natural gas (assume 1020 Btu/scf at 60°F).

^e Based on 100% conversion of fuel sulfur to SO₂. Assumes sulfur content in natural gas of 2,000 gr/10⁶ scf.

^f Emission factor for TOC is based on measured emission levels of 43 tests.

^g Emission factor for methane is determined by subtracting the VOC and ethane emission factors from the TOC emission factor. Measured emission factor for methane compares well with the calculated emission factor, 1.48 lb/MMBtu vs. 1.45 lb/MMBtu, respectively.

^h VOC emission factor is based on the sum of the emission factors for all speciated organic compounds less ethane and methane.

ⁱ Considered ≤ 1 μm in aerodynamic diameter. Therefore, for filterable PM emissions, PM10(filterable) = PM2.5(filterable).

^j No data were available for condensable PM emissions. The presented emission factor reflects emissions from 4SLB engines.

^k Hazardous Air Pollutant as defined by Section 112(b) of the Clean Air Act.

^l For lean burn engines, aldehyde emissions quantification using CARB 430 may reflect interference with the sampling compounds due to the nitrogen concentration in the stack. The presented emission factor is based on FTIR measurements. Emissions data based on CARB 430 are available in the background report.

Table 3.2-2. UNCONTROLLED EMISSION FACTORS FOR 4-STROKE LEAN-BURN ENGINES^a
(SCC 2-02-002-54)

Pollutant	Emission Factor (lb/MMBtu) ^b (fuel input)	Emission Factor Rating
Criteria Pollutants and Greenhouse Gases		
NO _x ^c 90 - 105% Load	4.08 E+00	B
NO _x ^c <90% Load	8.47 E-01	B
CO ^c 90 - 105% Load	3.17 E-01	C
CO ^c <90% Load	5.57 E-01	B
CO ₂ ^d	1.10 E+02	A
SO ₂ ^e	5.88 E-04	A
TOC ^f	1.47 E+00	A
Methane ^g	1.25 E+00	C
VOC ^h	1.18 E-01	C
PM10 (filterable) ⁱ	7.71 E-05	D
PM2.5 (filterable) ⁱ	7.71 E-05	D
PM Condensable ⁱ	9.91 E-03	D
Trace Organic Compounds		
1,1,2,2-Tetrachloroethane ^k	<4.00 E-05	E
1,1,2-Trichloroethane ^k	<3.18 E-05	E
1,1-Dichloroethane	<2.36 E-05	E
1,2,3-Trimethylbenzene	2.30 E-05	D
1,2,4-Trimethylbenzene	1.43 E-05	C
1,2-Dichloroethane	<2.36 E-05	E
1,2-Dichloropropane	<2.69 E-05	E
1,3,5-Trimethylbenzene	3.38 E-05	D
1,3-Butadiene ^k	2.67E-04	D
1,3-Dichloropropene ^k	<2.64 E-05	E
2-Methylnaphthalene ^k	3.32 E-05	C
2,2,4-Trimethylpentane ^k	2.50 E-04	C
Acenaphthene ^k	1.25 E-06	C

Table 3.2-2. UNCONTROLLED EMISSION FACTORS FOR 4-STROKE LEAN-BURN ENGINES (Continued)

Pollutant	Emission Factor (lb/MMBtu) ^b (fuel input)	Emission Factor Rating
Acenaphthylene ^k	5.53 E-06	C
Acetaldehyde ^{k,l}	8.36 E-03	A
Acrolein ^{k,l}	5.14 E-03	A
Benzene ^k	4.40 E-04	A
Benzo(b)fluoranthene ^k	1.66 E-07	D
Benzo(e)pyrene ^k	4.15 E-07	D
Benzo(g,h,i)perylene ^k	4.14 E-07	D
Biphenyl ^k	2.12 E-04	D
Butane	5.41 E-04	D
Butyr/Isobutyraldehyde	1.01 E-04	C
Carbon Tetrachloride ^k	<3.67 E-05	E
Chlorobenzene ^k	<3.04 E-05	E
Chloroethane	1.87 E-06	D
Chloroform ^k	<2.85 E-05	E
Chrysene ^k	6.93 E-07	C
Cyclopentane	2.27 E-04	C
Ethane	1.05 E-01	C
Ethylbenzene ^k	3.97 E-05	B
Ethylene Dibromide ^k	<4.43 E-05	E
Fluoranthene ^k	1.11 E-06	C
Fluorene ^k	5.67 E-06	C
Formaldehyde ^{k,l}	5.28 E-02	A
Methanol ^k	2.50 E-03	B
Methylcyclohexane	1.23 E-03	C
Methylene Chloride ^k	2.00 E-05	C
n-Hexane ^k	1.11 E-03	C
n-Nonane	1.10 E-04	C

Table 3.2-2. UNCONTROLLED EMISSION FACTORS FOR 4-STROKE LEAN-BURN ENGINES (Continued)

Pollutant	Emission Factor (lb/MMBtu) ^b (fuel input)	Emission Factor Rating
n-Octane	3.51 E-04	C
n-Pentane	2.60 E-03	C
Naphthalene ^k	7.44 E-05	C
PAH ^k	2.69 E-05	D
Phenanthrene ^k	1.04 E-05	D
Phenol ^k	2.40 E-05	D
Propane	4.19 E-02	C
Pyrene ^k	1.36 E-06	C
Styrene ^k	<2.36 E-05	E
Perchloroethylene ^{k, m}	2.48 E-06	D
Toluene ^k	4.08 E-04	B
Vinyl Chloride ^k	1.49 E-05	C
Xylene ^k	1.84 E-04	B

^a Reference 7. Factors represent uncontrolled levels. For NO_x, CO, and PM₁₀, "uncontrolled" means no combustion or add-on controls; however, the factor may include turbocharged units. For all other pollutants, "uncontrolled" means no oxidation control; the data set may include units with control techniques used for NO_x control, such as PCC and SCR for lean burn engines, and PSC for rich burn engines. Factors are based on large population of engines. Factors are for engines at all loads, except as indicated. SCC = Source Classification Code. TOC = Total Organic Compounds. PM-10 ≤ Particulate Matter 10 microns (μm) aerodynamic diameter. A "<" sign in front of a factor means that the corresponding emission factor is based on one-half of the method detection limit.

^b Emission factors were calculated in units of (lb/MMBtu) based on procedures in EPA Method 19. To convert from (lb/MMBtu) to (lb/10⁶ scf), multiply by the heat content of the fuel. If the heat content is not available, use 1020 Btu/scf. To convert from (lb/MMBtu) to (lb/hp-hr) use the following equation:

$$\text{lb/hp-hr} = (\text{lb/MMBtu}) (\text{heat input, MMBtu/hr}) (1/\text{operating HP, 1/hp})$$

^c Emission tests with unreported load conditions were not included in the data set.

^d Based on 99.5% conversion of the fuel carbon to CO₂. CO₂ [lb/MMBtu] = (3.67)(%CON)(C)(D)(1/h), where %CON = percent conversion of fuel carbon to CO₂, C = carbon content of fuel by weight (0.75), D = density of fuel, 4.1 E+04 lb/10⁶ scf, and

Table 3.2-2. UNCONTROLLED EMISSION FACTORS FOR 4-STROKE LEAN-BURN ENGINES (Continued)

h = heating value of natural gas (assume 1020 Btu/scf at 60°F).

^a Based on 100% conversion of fuel sulfur to SO₂. Assumes sulfur content in natural gas of 2,000 gr/10⁶ scf.

^f Emission factor for TOC is based on measured emission levels from 22 source tests.

^g Emission factor for methane is determined by subtracting the VOC and ethane emission factors from the TOC emission factor. Measured emission factor for methane compares well with the calculated emission factor, 1.31 lb/MMBtu vs. 1.25 lb/MMBtu, respectively.

^h VOC emission factor is based on the sum of the emission factors for all speciated organic compounds less ethane and methane.

ⁱ Considered ≤ 1 μm in aerodynamic diameter. Therefore, for filterable PM emissions, PM10(filterable) = PM2.5(filterable).

^j PM Condensable = PM Condensable Inorganic + PM-Condensable Organic

^k Hazardous Air Pollutant as defined by Section 112(b) of the Clean Air Act.

^l For lean burn engines, aldehyde emissions quantification using CARB 430 may reflect interference with the sampling compounds due to the nitrogen concentration in the stack. The presented emission factor is based on FTIR measurements. Emissions data based on CARB 430 are available in the background report.

^m Error identified in pollutant name – October 2024. Pollutant name changed from tetrachloroethane to perchloroethylene.

Table 3.2-3. UNCONTROLLED EMISSION FACTORS FOR 4-STROKE RICH-BURN ENGINES^a (SCC 2-02-002-53)

Pollutant	Emission Factor (lb/MMBtu) ^b (fuel input)	Emission Factor Rating
Criteria Pollutants and Greenhouse Gases		
NO _x ^c 90 - 105% Load	2.21 E+00	A
NO _x ^c <90% Load	2.27 E+00	C
CO ^c 90 - 105% Load	3.72 E+00	A
CO ^c <90% Load	3.51 E+00	C
CO ₂ ^d	1.10 E+02	A
SO ₂ ^e	5.88 E-04	A
TOC ^f	3.58 E-01	C
Methane ^g	2.30 E-01	C
VOC ^h	2.96 E-02	C
PM10 (filterable) ^{i,j}	9.50 E-03	E
PM2.5 (filterable) ^j	9.50 E-03	E
PM Condensable ^k	9.91 E-03	E
Trace Organic Compounds		
1,1,2,2-Tetrachloroethane ^l	2.53 E-05	C
1,1,2-Trichloroethane ^l	<1.53 E-05	E
1,1-Dichloroethane	<1.13 E-05	E
1,2-Dichloroethane	<1.13 E-05	E
1,2-Dichloropropane	<1.30 E-05	E
1,3-Butadiene ^l	6.63 E-04	D
1,3-Dichloropropene ^l	<1.27 E-05	E
Acetaldehyde ^{l,m}	2.79 E-03	C
Acrolein ^{l,m}	2.63 E-03	C
Benzene ^l	1.58 E-03	B
Butyr/isobutyraldehyde	4.86 E-05	D
Carbon Tetrachloride ^l	<1.77 E-05	E

Table 3.2-3. UNCONTROLLED EMISSION FACTORS FOR 4-STROKE RICH-BURN ENGINES
(Concluded)

Pollutant	Emission Factor (lb/MMBtu) ^b (fuel input)	Emission Factor Rating
Chlorobenzene ¹	<1.29 E-05	E
Chloroform ¹	<1.37 E-05	E
Ethane ^a	7.04 E-02	C
Ethylbenzene ¹	<2.48 E-05	E
Ethylene Dibromide ¹	<2.13 E-05	E
Formaldehyde ^{1,m}	2.05 E-02	A
Methanol	3.06 E-03	D
Methylene Chloride ¹	4.12 E-05	C
Naphthalene ¹	<9.71 E-05	E
PAH ¹	1.41 E-04	D
Styrene ¹	<1.19 E-05	E
Toluene ¹	5.58 E-04	A
Vinyl Chloride ¹	<7.18 E-06	E
Xylene ¹	1.95 E-04	A

^a Reference 7. Factors represent uncontrolled levels. For NO_x, CO, and PM-10, "uncontrolled" means no combustion or add-on controls; however, the factor may include turbocharged units. For all other pollutants, "uncontrolled" means no oxidation control; the data set may include units with control techniques used for NO_x control, such as PCC and SCR for lean burn engines, and PSC for rich burn engines. Factors are based on large population of engines. Factors are for engines at all loads, except as indicated. SCC = Source Classification Code. TOC = Total Organic Compounds. PM10 = Particulate Matter ≤ 10 microns (μm) aerodynamic diameter. A "<" sign in front of a factor means that the corresponding emission factor is based on one-half of the method detection limit.

^b Emission factors were calculated in units of (lb/MMBtu) based on procedures in EPA Method 19. To convert from (lb/MMBtu) to (lb/106 scf), multiply by the heat content of the fuel. If the heat content is not available, use 1020 Btu/scf. To convert from (lb/MMBtu) to (lb/hp-hr) use the following equation:

$$\text{lb/hp-hr} = (\text{lb/MMBtu}) (\text{heat input, MMBtu/hr}) (1/\text{operating HP, 1/hp})$$

^c Emission tests with unreported load conditions were not included in the data set.

^d Based on 99.5% conversion of the fuel carbon to CO₂. CO₂ [lb/MMBtu] = (3.67)(%CON)(C)(D)(1/h), where %CON = percent conversion of fuel carbon to CO₂,

C = carbon content of fuel by weight (0.75), D = density of fuel, 4.1 E+04 lb/10⁶ scf, and h = heating value of natural gas (assume 1020 Btu/scf at 60°F).

^e Based on 100% conversion of fuel sulfur to SO₂. Assumes sulfur content in natural gas of 2,000 gr/10⁶scf.

^f Emission factor for TOC is based on measured emission levels from 6 source tests.

^g Emission factor for methane is determined by subtracting the VOC and ethane emission factors from the TOC emission factor.

^h VOC emission factor is based on the sum of the emission factors for all speciated organic compounds. Methane and ethane emissions were not measured for this engine category.

ⁱ No data were available for uncontrolled engines. PM10 emissions are for engines equipped with a PCC.

^j Considered # 1 Fm in aerodynamic diameter. Therefore, for filterable PM emissions, PM10 (filterable) = PM2.5 (filterable).

^k No data were available for condensable emissions. The presented emission factor reflects emissions from 4SLB engines.

^l Hazardous Air Pollutant as defined by Section 112(b) of the Clean Air Act.

^m For rich-burn engines, no interference is suspected in quantifying aldehyde emissions. The presented emission factors are based on FTIR and CARB 430 emissions data measurements.

ⁿ Ethane emission factor is determined by subtracting the VOC emission factor from the NMHC emission factor.

ATTACHMENT #8

**EPA AP-42 FIFTH EDITION, VOLUME I
CHAPTER 1, EXTERNAL COMBUSTION SOURCES
NATURAL GAS COMBUSTION**

Dated April 2026

PROPOSED

Table 1.4-1. EMISSION FACTORS FOR NITROGEN OXIDES (NO_x) AND CARBON MONOXIDE (CO)
FROM NATURAL GAS COMBUSTION^a

Combustor Type (MMBtu/hr Heat Input)	Controls	NO _x ^b Emission Factor (lb/10 ⁶ scf)	NO _x ^b Emission Factor Rating	CO Emission Factor (lb/10 ⁶ scf)	CO Emission Factor Rating
Large Wall-Fired Boilers (>100) [10100601, 10200601, 10300601]	Uncontrolled (Pre-NSPS) ^c	280	A	84	B
Large Wall-Fired Boilers (>100) [10100601, 10200601, 10300601]	Uncontrolled (Post-NSPS) ^c	190	A	84	B
Large Wall-Fired Boilers (>100) [10100601, 10200601, 10300601]	Low NO _x burners	140	A	84	B
Large Wall-Fired Boilers (>100) [10100601, 10200601, 10300601]	Flue gas recirculation	100	D	84	B
Small Boilers (<100) [10100602, 10200602, 10200603, 10300602, 10300603]	Uncontrolled	100	B	84	B
Small Boilers (<100) [10100602, 10200602, 10200603, 10300602, 10300603]	Low NO _x burners	50	D	84	B
Small Boilers (<100) [10100602, 10200602, 10200603, 10300602, 10300603]	Low NO _x burners/Flue gas recirculation	32	C	84	B
Tangential-Fired Boilers (All Sizes) [10100604]	Uncontrolled	170	A	24	C
Tangential-Fired Boilers (All Sizes) [10100604]	Flue gas recirculation	76	D	98	D
Residential Furnaces (<0.3) [2104006000]	Uncontrolled	94	B	40	B

^a Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. To convert from lb/10⁶ scf to kg/10⁶ m³, multiply by 16. Emission factors are based on an average natural gas higher heating value of 1,020 Btu/scf. To convert from lb/10⁶ scf to lb/MMBtu, divide by 1,020. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. SCC = Source Classification Code. ND = no data. NA = not applicable.

^b Expressed as NO₂. For large and small wall fired boilers with SNCR control, apply a 24 percent reduction to the appropriate NO_x emission factor. For tangential-fired boilers with SNCR control, apply a 13 percent reduction to the appropriate NO_x emission factor.

^c NSPS=New Source Performance Standard as defined in 40 CFR 60 Subparts D and Db. Post-NSPS units are boilers with greater than 250 MMBtu/hr of heat input that commenced construction modification, or reconstruction after August 17, 1971, and units with heat input capacities between 100 and 250 MMBtu/hr that commenced construction modification, or reconstruction after June 19, 1984.

TABLE 1.4-2. EMISSION FACTORS FOR CRITERIA POLLUTANTS AND GREENHOUSE GASES FROM NATURAL GAS COMBUSTION^a

Pollutant	Emission Factor (lb/10 ⁶ scf)	Emission Factor Rating
CO ₂ ^b	120,000	A
Lead	0.0005	D
N ₂ O (Uncontrolled)	2.2	E
N ₂ O (Controlled-low-NO _x burner)	0.64	E
PM (Total) ^c	7.6	D
PM (Condensable) ^c	5.7	D
PM (Filterable) ^c	1.9	B
SO ₂ ^d	0.6	A
TOC	11	B
Methane	2.3	B
VOC	5.5	C

^a Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. Data are for all natural gas combustion sources. Applicable SCCs: 10100601, 10100602, 10100604, 10200601, 10200602, 10200603, 10200604, 10300601, 10300602, 10300603, 2104006000. To convert from lb/10⁶ scf to kg/10⁶ m³, multiply by 16. To convert from lb/10⁶ scf to 1b/MMBtu, divide by 1,020. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. TOC = Total Organic Compounds. VOC = Volatile Organic Compounds.

^b Based on approximately 100% conversion of fuel carbon to CO₂. CO₂[lb/10⁶ scf] = (3.67) (CON) (C)(D), where CON = fractional conversion of fuel carbon to CO₂, C = carbon content of fuel by weight (0.76), and D = density of fuel, 4.2x10⁴ lb/10⁶ scf.

^c All PM (total, condensable, and filterable) is assumed to be less than 1.0 micrometer in diameter. Therefore, the PM emission factors presented here may be used to estimate PM₁₀, PM_{2.5} or PM₁ emissions. Total PM is the sum of the filterable PM and condensable PM. Condensable PM is the particulate matter collected using EPA Method 202 (or equivalent). Filterable PM is the particulate matter collected on, or prior to, the filter of an EPA Method 5 (or equivalent) sampling train.

^d Based on 100% conversion of fuel sulfur to SO₂. Assumes sulfur content is natural gas of 2,000 grains/10⁶ scf. The SO₂ emission factor in this table can be converted to other natural gas sulfur contents by multiplying the SO₂ emission factor by the ratio of the site-specific sulfur content (grains/10⁶ scf) to 2,000 grains/10⁶ scf.

TABLE 1.4-3. EMISSION FACTORS FOR SPECIATED ORGANIC COMPOUNDS FROM NATURAL GAS COMBUSTION^a

CAS No.	Pollutant	Emission Factor (lb/10 ⁶ scf)	Emission Factor Rating
91-57-6	2-Methylnaphthalene ^{b, c}	2.4E-05	D
56-49-5	3-Methylchloranthrene ^{b, c}	<1.8E-06	E
57-97-6	7,12-Dimethylbenz(a)anthracene ^{b, c}	<1.6E-05	E
83-32-9	Acenaphthene ^{b, c}	<1.8E-06	E
203-96-8	Acenaphthylene ^{b, c}	<1.8E-06	E
120-12-7	Anthracene ^{b, c}	<2.4E-06	E
56-55-3	Benzo(a)anthracene ^{b, c}	<1.8E-06	E
71-43-2	Benzene ^b	2.1E-03	B
50-32-8	Benzo(a)pyrene ^{b, c}	<1.2E-06	E
205-99-2	Benzo(b)fluoranthene ^{b, c}	<1.8E-06	E
191-24-2	Benzo(g,h,i)perylene ^{b, c}	<1.2E-06	E
205-82-3	Benzo(k)fluoranthene ^{b, c}	<1.8E-06	E
106-97-8	Butane	2.1E+00	E
218-01-9	Chrysene ^{b, c}	<1.8E-06	E
53-70-3	Dibenzo(a,h)anthracene ^{b, c}	<1.2E-06	E
25321-22-6	Dichlorobenzene ^b	1.2E-03	E
74-84-0	Ethane	3.1E+00	E
206-44-0	Fluoranthene ^{b, c}	3.0E-06	E
86-73-7	Fluorene ^{b, c}	2.8E-06	E
50-00-0	Formaldehyde ^b	7.5E-02	B
110-54-3	Hexane ^b	1.8E+00	E
193-39-5	Indeno(1,2,3-cd)pyrene ^{b, c}	<1.8E-06	E
91-20-3	Naphthalene ^b	6.1E-04	E
109-66-0	Pentane	2.6E+00	E
85-01-8	Phenanthrene ^{b, c}	1.7E-05	D

TABLE 1.4-3. Continued

CAS No.	Pollutant	Emission Factor (lb/10 ⁶ scf)	Emission Factor Rating
74-98-6	Propane	1.6E+00	E
129-00-0	Pyrene ^{b, c}	5.0E-06	E
108-88-3	Toluene ^b	3.4E-03	C

^a Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. Data are for all natural gas combustion sources. Applicable SCCs: 10100601, 10100602, 10100604, 10200601, 10200602, 10200603, 10200604, 10300601, 10300602, 10300603, 2104006000. To convert from lb/10⁶ scf to kg/10⁶ m³, multiply by 16. To convert from lb/10⁶ scf to lb/MMBtu, divide by 1,020. Emission Factors preceded with a less-than symbol are based on method detection limits.

^b Hazardous Air Pollutant (HAP) as defined by Section 112(b) of the Clean Air Act.

^c HAP because it is Polycyclic Organic Matter (POM). POM is a HAP as defined by Section 112(b) of the Clean Air Act.

^d The sum of individual organic compounds may exceed the VOC and TOC emission factors due to differences in test methods and the availability of test data for each pollutant.

TABLE 1.4-4. EMISSION FACTORS FOR METALS FROM NATURAL GAS COMBUSTION^a

CAS No.	Pollutant	Emission Factor (lb/10 ⁶ scf)	Emission Factor Rating
7440-38-2	Arsenic ^b	2.0E-04	E
7440-39-3	Barium	4.4E-03	D
7440-41-7	Beryllium ^b	<1.2E-05	E
7440-43-9	Cadmium ^b	1.1E-03	D
7440-47-3	Chromium ^b	1.4E-03	D
7440-48-4	Cobalt ^b	8.4E-05	D
7440-50-8	Copper	8.5E-04	C
7439-96-5	Manganese ^b	3.8E-04	D
7439-97-6	Mercury ^b	2.6E-04	D
7439-98-7	Molybdenum	1.1E-03	D
7440-02-0	Nickel ^b	2.1E-03	C
7782-49-2	Selenium ^b	<2.4E-05	E
7440-62-2	Vanadium	2.3E-03	D
7440-66-6	Zinc	2.9E-02	E

^a Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. Data are for all natural gas combustion sources. Applicable SCCs: 10100601, 10100602, 10100604, 10200601, 10200602, 10200603, 10200604, 10300601, 10300602, 10300603, 2104006000. Emission factors preceded by a less-than symbol are based on method detection limits. To convert from lb/10⁶ scf to kg/10⁶ m³, multiply by 16. To convert from lb/10⁶ scf to 1b/MMBtu, divide by 1,020.

^b Hazardous Air Pollutant as defined by Section 112(b) of the Clean Air Act.

ATTACHMENT #9

Specific Engine Test Data for Engines 1D and 2D

PROPOSED



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF AIR POLLUTION

9th Floor, L & C Annex
401 Church Street
Nashville, Tennessee 37243-1531

February 18, 2005

Mr. Jon K. Tice
Engineer – Plant Services
Tennessee Gas Pipeline Company
Mechanical Testing Group
Nine Greenway Plaza
Houston, Texas 77046

Reference Number: 83-0008-01-S4

Dear Mr. Tice:

The Tennessee Division of Air Pollution Control in receipt of the nitrogen oxides (NO_x) emissions source test report for (2) Cooper-Bessemer natural gas fired engines operating at the Tennessee Gas Pipeline Company, Compressor Station 87, located in Portland, Tennessee. Southwestern Laboratories, Inc. conducted the source testing on February 26, 2004. The tests were conducted to determine compliance with the NO_x emission limits listed in the Title V Operating Permit #546586 Minor Modification #1, February 25, 2003, to fulfill the testing requirement set forth in Condition E-14 (M1) of this same permit, and to show a reduction of NO_x after the combustion modification on each engine.

The Division's Compliance Validation Program has reviewed the source test report and sampling data. Based on this review, the agency considers the report technically correct and acceptable to the agency for a determination of compliance.

During the testing of Engine 1D, the average NO_x emission rate was 43.7 lbs/hr. The engine loading during this testing period averaged 99% at 3,366 horsepower with a fuel flow rate of 24,920 scfh, and an average oxygen rate of 14.5%. During the testing of Engine 2D, the average NO_x emission rate was 33.9 lbs/hr. The engine loading during this testing period averaged 97.5% at 3,316 horsepower with a fuel flow rate of 25,003 scfh, and an average oxygen rate of 14.7%.

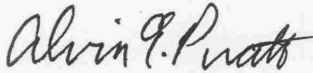
Mr. Jon K. Tice
Engineer – Plant Services
Tennessee Gas Pipeline Company
page 2

The NO_x emission rate demonstrated compliance with both the permit stipulated NO_x emission rate of 60 lb/hr for each engine (condition E13, M1) and the proposed NO_x emission rate of 54.6 lb/hr for each engine (proposed in the company letter dated April 19, 2004).

With the acceptance of this source emissions test report, the Division agrees that Tennessee Gas Pipeline Company has demonstrated compliance with the NO_x emission limitation set forth in Condition E13 (M1) of the above listed Title V permit and has fulfilled the emissions testing requirements set forth in Condition E14 (M1) of the same Title V permit.

Should you have any questions concerning the matters addressed by this letter, please contact either Mr. Alvin Pratt or Mr. Bryan Parker at (615) 532-0554.

Sincerely,



Alvin E. Pratt
Compliance Validation Program
Tennessee Division of Air Pollution Control

c: Nashville - EAC

INTRODUCTION

Compliance NOx emissions sampling of two (2) lean burn, two-stroke cycle reciprocating compressor engines (Cooper-Bessemer GMWC-10) of Tennessee Gas Pipeline Company (TGP) Compressor Station 87, Portland, Tennessee was performed by personnel of Southwestern Laboratories, Inc. (SwL) Air Emissions Services (AES) Division. The engines fire natural gas and were site rated at 3,400 horsepower (hp) each. Present during the sample program were: Mr. Bryan Parker of the Air Pollution Control Division of the Tennessee Department of Environment and Conservation, Messrs. Jon Tice and Mike Chandler of Tennessee Gas Pipeline Company (TGP) and Mr. Wes Bear of SwL. Testing for NOx and O₂ was performed on Engine Nos. 1D and 2D on February 26, 2004.

Sampling was conducted to determine the concentrations and emission rates of nitrogen oxides (NOx) from each engine to determine compliance with TDEC Title V Operating Permit No. 546586 and to confirm NOx reduction resulting from combustion modification (see Discussion and TGP Emissions Test Protocol located in Appendix). A total of three (3) sixty (60) minute sample runs were performed while each engine operated at greater than 90% of rated peak load. In general, Environmental Protection Agency (EPA) protocols were utilized during the sampling and analytical program.

RESULTS

Results of the individual runs, calculated in accordance with EPA procedures, are contained in the Tables section of this report. The average emissions are shown below.

Source	Average Concentration (ppmvd)	Average Emission Rate (lb/hr)	Average Emission Rate (tons/yr)*	Average Emission Rate (g/hp-hr)
<i>Engine No. 1D</i>				
NOx	514.11	43.69	191.38	5.89
<i>Engine No. 2D</i>				
NOx	387.23	33.94	148.66	4.65
* Calculation based on 8,760 operating hours per year.				

Test Summary

A maximum load test, consisting of three test runs, was conducted the Clark TCV-10 reciprocating engine at the Tennessee Gas Pipeline Station 860 Facility. The Clark TCV-10 (Unit 1B) tested below it's applicable emission limit. Summaries of results from the unit are depicted below in Table 2. Detailed summaries of the units' results are included in the APPENDICES.

Results

Table 2. Average emissions summary, Unit 1B, Clark TCV-10.

Parameter	Run 1	Run 2	Run 3	Avg.
Time Tested	9:08	10:28	11:40	
Percent Load	99.74	99.94	100.50	
NO _x (ppm)	583.04	597.54	599.86	
NO _x (lb/hr)	43.32	43.98	44.24	
Oxygen (%)	13.20	13.16	13.17	
Fuel Flow (scfm)	424.78	424.50	425.86	

ATTACHMENT #10

Compliance Assurance Monitoring (CAM) Plan, Units 1E and 2E
Revision 2, May 2006

PROPOSED



COMPLIANCE ASSURING MONITORING (CAM)

PLAN

UNITS 1E AND 2E

STATION 87, SRN 83-0008

Revision 2

May 2006

INTRODUCTION

Pursuant to requirements concerning enhanced monitoring and compliance certification under the Clean Air Act (CAA), the EPA promulgated the Compliance Assurance Monitoring (CAM) regulations in 40 CFR §64 on October 22, 1997. Subject to certain exemptions, the CAM regulations require owners or operators of major title V sources to conduct monitoring to provide reasonable assurance of compliance with applicable requirements under the CAA. The CAM rule targets emission units that rely on pollution control devices to achieve compliance with applicable standards. The CAM rule requires owners and operators to maintain their control devices at levels that assure compliance, to design CAM plans around current requirements and operating practices, and to select representative parameters upon which compliance can be assured.

This report provides a brief summary of the CAM rule, the results of a CAM applicability study performed for Tennessee Gas Pipeline Company (TGP) Compressor Station 87 (SRN 83-008) located in Portland, in Sumner County, Tennessee, and a CAM plan submittal for the affected sources.

1.1 CAM RULE SUMMARY

The CAM requirements apply only to a pollutant specific emissions unit (PSEU) located at a major source that is required to obtain a part 70 or 71 permit if the unit satisfies all of the following criteria¹:

- The unit is subject to an emission limitation or standard for the applicable regulated pollutant (or surrogate thereof);
- The unit uses a control device to achieve compliance with any such emission limitation or standard; and
- The unit has potential pre-control emissions of the applicable regulated pollutant that are equal or greater than the corresponding major source threshold.

Exemptions to CAM requirements are as follows:²

- ▲ Any PSEU that is subject to a New Source Performance Standard (NSPS) or a National Emission Standard for Hazardous Air Pollutants (NESHAP) that was promulgated after November 15, 1990. These standards are designed with monitoring that provides a reasonable assurance of compliance.
- ▲ Any PSEU that is subject to the stratospheric ozone protection requirements, acid rain program requirements, or other emissions limitations or standards that apply solely under an emission trading program or an emission cap.
- ▲ Any PSEU whose emission limitations or standards specify a continuous compliance determination method unless this applicable emission reduction factor includes an assumed

¹ 40 CFR 64.1(a)

² 40 CFR §64.2(b).

control device emission reduction factor that could be affected by the actual operation and maintenance of the control device.

- ▲ Certain municipally-owned utility units that
 - Are exempt from all monitoring requirements;
 - Produce electricity during periods of peak electrical demand or emergency situations since these periods or situations are infrequent; and
 - Have actual emissions from the utility unit based on the average annual emissions over the last three years of operation that are less than 50 percent of the amount in tpy required for a source to be classified as a major source.

Under the CAM regulations, the owners or operators are required to prepare and submit monitoring plans providing an on-going and reasonable assurance of compliance with emission limits. A CAM plan must include the following information:

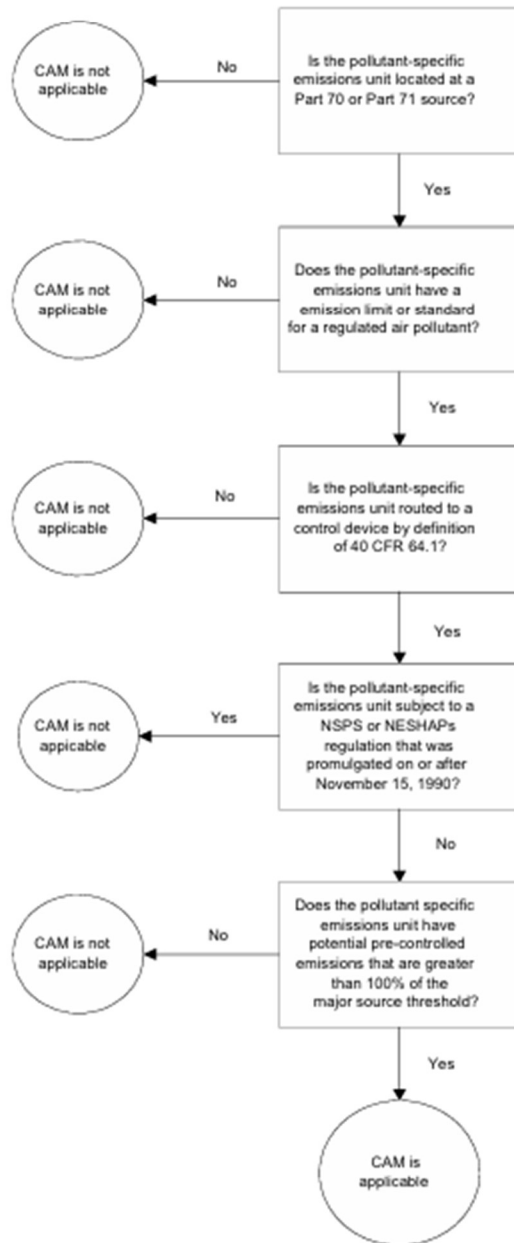
- Selection of indicator(s) to be monitored to assess performance of the control device,
- The range(s) or designated conditions for the selected indicators, or the process by which such indicator ranges or designated conditions will be established; and
- The performance criteria for the monitoring including:
 - Specifications for obtaining representative data;
 - Verification of procedures to confirm the monitoring device's operational status;
 - Monitoring frequency;
 - Data averaging period;
- Provide justification for use of parameters, ranges, and monitoring approach;
- Provide emission test data; and if necessary
- Provide an implementation plan for installing, testing, and operating the monitoring device.

For all affected units with the potential to emit, calculated including the effect of control devices, the applicable regulated pollutant in an amount equal or greater than a major source threshold, the owner or operator is required to collect four or more data values for each monitoring parameter equally spaced over each hour and average these values as applicable. For other PSEU, the data must be collected at least once per 24-hour period.

For a subject unit whose post-controlled emissions exceed the major source threshold, a CAM plan is required to be submitted with the initial Title V Operating Permit application. For a subject unit whose post-control emissions are less than the major source threshold, a CAM plan does not have to be submitted until the first renewal application.

A flow chart that can be used to determine applicability to CAM is provided in Figure 1.

FIGURE 1. CAM APPLICABILITY FLOWCHART



1.2 CAM APPLICABILITY TO EMISSION UNITS AT TGP STATION 87

This section describes the applicability of CAM requirements for emission units at TGP Compressor Station 87. The facility currently operates under Title V Operating Permit No. 546586 issued on December 9, 1998. The facility consists of twenty two (22) compressor engines and two (2) emergency generator engines. However, only two engines at the facility, identified as emission points 1E and 2E, are equipped with active control devices. Emission Points 1E and 2E are identical Wartsila W18V-34SG-C model, 4-stroke, lean-burn engines that employ the use of an oxidation catalyst as an active control device to abate emissions of carbon monoxide (CO). Table 1 identifies applicable emission limits for Emission Points 1E and 2E. Both units are also subject to a nitrogen oxides (NO_x) emission standard. However, an oxidation catalyst is not designed to control NO_x emissions and therefore, the units are not considered PSEUs for NO_x and CAM is presumptively determined not to apply.

TABLE 1. APPLICABLE EMISSION LIMITS OR STANDARDS

Emission Point ID	Facility Reference Number	Pollutant	Emission Limit or Standard	Permit Condition
1E	87-E-01	CO	10 lb/hr*	M2-4
2E	87-E-02	CO	10 lb/hr*	M2-4

*Based on the CO limit of 20 lb/hr for both engines combined.

The pre-controlled CO emissions for each engine presented in Table 2 are based upon manufacturer's test data and the controlled CO emissions are based on the CO permit limit of 10 lb/hr for each engine (20 lb/hr of CO for engines 1E and 2E combined).

TABLE 2. COMPRESSOR ENGINE PSEU EMISSIONS CONTROL ANALYSIS

Emission Point ID	Pollutant	Major Source Threshold (tons per year)	Pre-Control Emissions (tons per year)	Post-Control Emissions (tons per year)
1E	CO	100	143.66	43.8
2E	CO	100	143.66	43.8

As shown in Table 2, the pre-controlled CO emissions exceed the major source thresholds. Because the post-control emissions of CO are below the major source thresholds, each compressor engine is determined to be an affected small-PSEU for CO subject to CAM requirements. Accordingly, TGP is required to submit its CAM plan for both engines with the first Title V renewal application. Further,

continuous monitoring of an indicative parameter will not be required but the frequency of the data collection is required to be at least once per 24-hour period.

**COMPLIANCE ASSURANCE MONITORING PLAN FOR ENGINES 1E AND 2E
TGP PIPELINE COMPANY - COMPRESSOR STATION 87**

I. BACKGROUND

1. Emission Units 1E and 2E

Description: Two (2) 7,700 hp Wartsila W18V-34SG-C Compressor Engines

Identification: Facility Reference Number 83-0008, Emission Points 1E and 2E

Facility: TGP Compressor Station 87, Sumner County, Tennessee,

2. Applicable Regulations, Emissions Limits, and Monitoring Requirements

Applicable Requirement Tennessee Title V Operating Permit No. 546586 Condition M2-4

Emission Limit: 10.0 lb/hr of CO for each engine (Based on the CO limit of 20 lb/hr for engines 1E and 2E combined)

Current Monitoring Requirements: None

3. Control Technology

Oxidation catalyst on each engine.

II. MONITORING APPROACH

The key elements of the monitoring approach, including the indicators to be monitored, indicator ranges, and performance criteria are presented in the following table.

**TABLE 3. COMPRESSOR ENGINES 1E AND 2E
CAM SUMMARY – OXIDATION CATALYST INLET TEMPERATURE**

Indicator	
Parameter	Oxidation Catalyst Inlet Temperature (° F).
Measurement Approach	The inlet temperature to the oxidation catalyst will be monitored on a daily basis using a Resistance Temperature Detector ³ (RTD), thermocouple, or equivalent device each day the engine is operating.
Indicator Range	
Parameter Range	Oxidation Catalyst Inlet Temperature Range of 450 °F – 1,350 °F at all loads.
Performance Criteria	
Data Representativeness	The pre-catalyst temperature monitoring device will have a temperature range sufficient to provide accurate temperature measurement throughout the operating range (450 °F – 1350 °F) and accuracy of +/- 1% of measured temperature.
	The pre-catalyst temperature measuring device will be installed within 2 feet upstream of the catalyst. TGP is confident that this placement will provide catalyst inlet temperature readings that are representative of actual exhaust temperature entering the catalyst element.
	TGP will calibrate and/or replace the pre-catalyst temperature measuring device annually. The calibration acceptance criteria will be +/- 0.5% of measured temperature.
QA/QC Practices and Criteria	Concerning device accuracy in relation to the proposed catalyst inlet temperature range, TGP will establish alarm and shutdown limits that prevent the engine from operating below 450 °F and above 1350 °F as follows: • Lower limit alarm set-point: 475 °F • Lower limit shutdown set-point: 455 °F • Upper limit alarm set-point: 1315 °F • Upper limit shut-down set-point: 1335 °F

³ Resistance Temperature Detector (RTD) is a sensor used to measure temperature by correlating the resistance of the RTD element with temperature. Typically, an RTD element consists of a length of fine coiled wire wrapped around a ceramic or glass core.

Monitoring Frequency and Data Collection Procedures	Record the catalyst inlet temperature once a day each day the engine is operating;
Recordkeeping	Records will be kept of the daily catalyst inlet temperature readings;

III. JUSTIFICATION

1. BACKGROUND

Emission Points 1E and 2E are 7,700 hp, 4-stroke, lean burn, reciprocating internal combustion engines that fire only pipeline-quality natural gas. The engines are considered "existing sources" and are not subject to any NESHAP⁴ or NSPS standards promulgated after November 15, 1990. The units operate throughout the year at or near full capacity. These units are not "large" CAM source as the post-controlled CO emissions do not exceed the Title V major source threshold of 100 tpy for each engine. Thus, continuous monitoring is not required.

2. RATIONALE FOR PERFORMANCE INDICATORS SELECTION

Inlet Temperature to Oxidation Catalyst

An oxidation catalyst facilitates the breakdown of excess oxygen (O₂) molecules in the exhaust stream. The resulting oxygen atoms are subsequently available to bond with the CO molecules in the exhaust stream to form CO₂, thereby reducing the CO levels in the exhaust.

The two most important variables to consider when examining catalyst performance are the catalyst inlet temperature and O₂ concentration. Due to the design characteristic of the Wartsila W18V-34SG engine, significant excess air is required for proper operation and the engine will always operate well above of the 4% O₂ required by the catalyst for the oxidation process. Therefore, the oxidation catalyst inlet temperature is the only key parameter that needs to be monitored to ensure the proper operation and reduction efficiency of the oxidation catalyst. By meeting the proposed indicator range levels for the oxidation catalyst inlet temperature, reasonable assurances can be provided that the control device is working properly and the emission unit will not exceed the relevant limits.

3. RATIONALE FOR INDICATOR RANGE SELECTION

Oxidation Catalyst Inlet Temperature

TGP is proposing an oxidation catalyst inlet temperature range of 450°F – 1350°F, to be monitored and recorded daily each day the engines are operating. The lower end of this range, 450°F, was set to ensure destruction efficiency of CO. The upper end of this range, 1350°F, is set only to ensure the safety of the oxidation catalyst element. At temperatures above 1350°F, the catalyst begins to lose efficiency due to thermal damage to the element. The proposed ranges for the inlet catalyst temperature are consistent with the corresponding requirements for 4-stroke lean burn engines promulgated under 40 CFR 63 Subpart ZZZZ, *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*.

⁴ With respect to the RICE NESHAP, engines 1E and 2E are considered existing units as the construction of each unit was completed prior to the regulatory deadline of December 19, 2002.

Please note that since the Emission Points 1E and 2E are not "large" CAM source (as post-controlled CO emissions are less than the Title V major source threshold for each engine), continuous monitoring of temperature is not required for CAM purposes.

IV. IMPLEMENTATION PLAN

1. IMPLEMENTATION PLAN

The infrastructure to monitor the inlet temperature to the oxidation catalysts will be installed within 60 days from the issuance of the Title V Permit incorporating provisions of this plan. At the same time TGP will establish a data collection and recording scheme which facilitates the measurement and recording of this parameter. A routine maintenance schedule will be also in place.

The catalyst inlet temperature alarms and shutdowns will be set as follows for the proposed temperature range (450°F – 1350°F):

- Lower limit alarm set-point: 475 °F
- Lower limit shutdown set-point: 455 °F
- Upper limit alarm set-point: 1315 °F
- Upper limit shut-down set-point: 1335 °F

TGP is confident these measures will prevent the operation of the unit outside of the specified range. By implementing a unit alarm prior to exceeding the temperature range, time is provided to make changes to the operating scenario. If, however, these changes are not successful in reducing/increasing the catalyst inlet temperature, the unit will be shutdown prior to exceeding the range.

ATTACHMENT #11

**Compliance Plan for NO_x Emissions from Stationary Internal Combustion Engines
Pursuant to TAPCR 1200-03-27-.09**

PROPOSED



Tennessee Gas Pipeline
Company, L.L.C.
a Kinder Morgan company

Tennessee Gas Pipeline Company, L.L.C.

COMPRESSOR STATIONS IN TENNESSEE

Compliance Plan for NO_x Emissions from Stationary Internal Combustion Engines

Pursuant to TAPCR 1200-3-27-.09

**Submitted to:
Tennessee Department for Environment and Conservation
Division of Air Pollution Control
312 Rosa L. Parks Avenue
William R. Snodgrass Tennessee Tower
Nashville, TN 37243-1531**

May 2015

Document History

Date	Description of Changes
April 2006	Initial Compliance Plan
May 2015	Revision 1 to make changes to periodic monitoring methods used for Engines 1D and 2D at Compressor Station 87 Portland and Engine 1B at Compressor Station 860 Nunnelly, update name of the company and company logo on the cover page, other minor edits. In addition, section 5.0 was divided into three subsections to separately discuss initial compliance demonstration, parametric monitoring and recordkeeping and reporting requirements.

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Appendix A	Excerpts from EPA NOx SIP Call Engine Inventory
Appendix B	Supporting Documentation for Past NOx Emission Rates
Appendix C	Results of Initial Performance Tests

1.0 Introduction

On November 14, 2005 Tennessee Department of Environment and Conservation (TDEC) promulgated rules under Tennessee Air Pollution Control Rules (TAPCR) 1200-3-27-.09, *Compliance Plans for NOx Emissions from Stationary Internal Combustion (IC) Engines*, that call for NOx emission reductions from Large NOx SIP Call engines (large engines)¹ in order to comply with the requirements under the NOx SIP Call Phase II rules².

Pursuant to rule TAPCR 1200-3-27-.09(3), after May 1, 2007, an owner or operator of a large engine shall not operate the engine during the ozone season³ unless the owner/operator complies with the requirements of a compliance plan to achieve NOx emission reductions that will satisfy the owner/operator's NOx emission reduction obligations in the state of Tennessee.

A compliance plan must include all affected engines⁴ at facilities located in Tennessee under the control of the same owner or operator and provide for NOx emission reductions that are equivalent or greater than the owner/operator's NOx emission reduction obligations. NOx emission decreases may include decreases in NOx emissions from large and other affected engines due to NOx control equipment that are not reflected in the 2007 Ozone Season Base NOx Emissions⁵ in the NOx SIP Call Engine Inventory⁶, [TAPCR 1200-3-27-.09(3)(a)5]. Compliance plans must be submitted to the Technical Secretary for approval by May 1, 2006, [TAPCR 1200-3-27-.09(3)(a)4].

¹ "Large NOx SIP Call Engine" (large engine) means a stationary internal combustion (IC) engine identified and designated in the NOx SIP Call Engine Inventory as emitting more than 1 ton of NOx per average ozone season day in 1995, [TAPCR 1200-3-27-.09(1)(d)].

² Federal Register / Vol. 69, No. 77 / Wednesday, April 21, 2004

³ "Ozone season" means the period from May 1 through September 30, [TAPCR 1200-3-27-.09(1)(j)].

⁴ "Affected engine" means any Large NOx SIP Call Engine or other stationary internal combustion engine that is subject to NOx control under a compliance plan pursuant to TAPCR 1200-3-27-.09(3), [TAPCR 1200-3-27-.09(1)(a)].

⁵ "2007 Ozone Season Base NOx Emissions" or "2007 Base NOx Emissions" means the projected uncontrolled NOx emissions, in tons, for the 2007 ozone season as published in the NOx SIP Call Inventory.

⁶ "NOx SIP Call Engine Inventory" means the NOx emission inventory compiled by the U.S. EPA as part of the NOx SIP Call Rule including Technical Amendments published in Federal Register Vol. 65, No. 42, March 2, 2000; Technical Amendment to the Finding of Significant Contribution and Rulemaking for Certain States for Purposes of Reducing Regional transport of Ozone and the adjustment of the 2007 budget NOx control efficiency to eighty-two (82) percent for large gas-fired engines published in Federal Register Vol. 69, No. 77, April 21, 2004, Interstate Ozone Transport: Response to Court Decisions on the NOx SIP Call, NOx SIP Call Technical Amendments, and Section 126 Rules.

Accordingly, this document represents a Compliance Plan for Tennessee Gas Pipeline Company, L.L.C. (TGP), previously Tennessee Gas Pipeline Company, pursuant to TAPCR 1200-3-27-.09.

2.0 TGP's NOx Emission Reduction Obligations in the State of Tennessee

NOx emission reduction obligations of an owner or operator of a large engine, referred to in TAPCR 1200-3-27-.09 as "Facility Seasonal NOx 2007 Tonnage Reductions" mean the total of Engine Seasonal NOx 2007 Tonnage Reductions attributable to all large NOx SIP Call engines of an owner or operator, [TAPCR 1200-3-27-.09(1)(c)]. The Seasonal NOx 2007 Tonnage Reduction for each large engine is calculated as the difference between the 2007 Base NOx Emissions and the 2007 Budget NOx Emissions as documented in the NOx SIP Call Engine Inventory, [TAPCR 1200-3-27-.09(1)(b)].

TGP owned and operated six (6) facilities in the state of Tennessee in 2007. Three (3) engines at two (2) facilities were identified as large engines in the NOx SIP Call Engine Inventory. Table 1 name these three engines and includes calculation of the Facility Seasonal 2007 NOx Tonnage Reduction, in tons per ozone season (tps), that is required from TGP in order to comply with the requirements of TAPCR 1200-3-27-.09. Relevant printouts from the NOx SIP Call Engine Inventory are provided in Appendix A in support of calculations in Table 1.

Table 1 Calculation of TGP's Facility Seasonal NOx 2007 Tonnage Reduction

Facility / County	Facility SRN	POINTID ¹	Engine ID	DNOx95 ²	SNOx95 ³	GF9507 ⁴	SNOx07 ⁵	NOxCE07 ⁶	SBNOx ⁷	Engine Seasonal NOx 2007 Tonnage Reduction ⁸
				(tpd)	(tps)		(tps)	(%)	(tps)	(tps)
TGP Station 87 Sumner County	83-0008	031	Engine 1D	2.280	348.84	1.06	369.77	82%	66.56	303.21
		032	Engine 2D	2.251	344.4	1.06	365.07	82%	65.71	299.36
TGP Station 860 Hickman County	41-0002	013	Engine 1B	1.287	196.91	1.06	208.73	82%	37.57	171.16
TGP's Facility Seasonal NOx 2007 Tonnage Reduction⁸ (Required Reductions) (tps)										773.72

1. POINTID – as denoted in the NOx SIP Call Engine Inventory.
2. DNOx95 – NOx emissions per average ozone season day in 1995, in tons per day (tpd,) as documented in the NOx SIP Call Engine Inventory.
3. SNOx95 – NOx emissions during the 1995 ozone season, in tons per ozone season (tps); SNOx95 is calculated by multiplying DNOx95 by 153 days in ozone season.
4. GF9507 – Growth factor representing the expected area growth as documented in the NOx SIP Call Engine Inventory.
5. SNOx07 – 2007 base NOx emissions – projected uncontrolled NOx emissions in 2007, in tons per ozone season. SNOx07 is calculated by multiplying SNOx95 by the growth factor.
6. NOxCE07 – Projected control efficiency of eighty-two (82) percent for large gas-fired engines pursuant to 69 FR 21603, April 21, 2004.
7. SBNOx – 2007 NOx Emissions Budget, in tons per ozone season, calculated using following formula: $SNOx07 \times (1 - NOxCE07)$.
8. Engine Seasonal NOx 2007 Tonnage Reduction – NOx emissions reductions in tons per ozone season required from each large engine.
9. TGP's Facility Seasonal NOx 2007 Tonnage Reduction – NOx reductions required from TGP equal to the total of the Seasonal NOx 2007 Tonnage Reductions attributable to all large NOx SIP Call engines owned and operated by TGP.

3.0 TGP's Compliance Plan

TGP installed NOx controls on three engines designated as large NOx SIP Call engines in order to meet its NOx reduction obligations in the state of Tennessee. Table 2 lists the controlled engines and provides descriptions of the installed controls.

Table 2 NOx Controls Installed by TGP

Facility	Engine	Installation Date	NOx Control Description
TGP Station 87	Engine 1D	2003	Low Emissions Combustion (LEC).
	Engine 2D	2003	Low Emissions Combustion (LEC).
TGP Station 860	Engine 1B	2003	Low Emissions Combustion (LEC).

The combustion modifications installed by TGP on the above listed engines are generally known as Low Emission Combustion (LEC) technology. LEC is a combustion modification approach that reduces NOx formation during the combustion process. LEC can include, but is not limited to, enhanced fuel mixing, turbocharger modifications, and high energy ignition. Unlike Selective Catalytic Reduction (SCR) which is designed to remove NOx after formation, LEC reduces formation of NOx during the combustion process by eliminating air/fuel stratification and obtaining uniformly lean mixture of air and fuel. This reduces the rich, in-cylinder "hot spots", which contribute disproportionately to overall NOx production.

Appropriate permitting process was followed to authorize the installation of the controls and operation of the above referenced engines. The following permits were issued in association with the projects:

1. Engines 1D and 2D at TGP Station 87 – Minor Modification #1 to Permit 546586 issued on February 25, 2003; and
2. Engine 1B at TGP Station 860 – Minor Modification #1 to Permit 546582 issued on February 25, 2003.

Rule TAPCR 1200-3-27-.09(3)(b) requires that the Project NOx Emission Rates in g/bhp-hr or lb/hr for each affected engine be included in a federally enforceable permit. As stated previously, the installation of the NOx controls on all engines included in this plan

was properly permitted. Appropriate NOx permit limits in lb/hr corresponding to Projected NOx Emission Rates in g/hp-hr at 100% load were incorporated into the Title V Permits for each facility. Table 3 lists Projected NOx Emission Rates, permit limits and permit numbers for each affected engine.

Table 3 Projected NOx Emission Rates and NOx Permit Limits for Affected Engines

Facility	Title V Permit Number	Engine	Projected NOx Emission Rate	Permit Limit
			(g/hp-hr)	(lb/hr)
TGP Station 87	546586	Engine 1D	8.00	60.00*
		Engine 2D	8.00	60.00*
TGP Station 860	555660	Engine 1B	7.00	52.50**

* Based on NOx permit limits in the facility's current Title V Permit.

**The current NOx permit limit for Engine 1B at Station 860 is represented in the current Title V permit at 45.00 lb/hr which corresponds to 6.00 g/hp-hr. Since TGP's NOx emission reduction obligations will be met at NOx emission rate higher than 6.00 g/hp-hr, TGP will request a permit modification to increase the permit limit for this engine to 52.50 lb/hr (corresponding to 7 g/hp-hr) to increase the margin of compliance. Calculations of NOx emission reductions in this compliance plan are based on the anticipated revised NOx emission rate for this engine.

Rule TAPCR 1200-3-27-.09(3)(a)6(v) requires that the compliance plan contain a numerical demonstration that the emission reductions obtained from all engines included under the plan are equivalent to or greater than the owner/operator's Facility Seasonal NOx 2007 Tonnage Reduction, based on the difference between the Past NOx Emission Rate and the Projected NOx Emission Rate multiplied by the Projected Operating Hours for each Affected Engine.

The NOx emission reductions from the installation of controls on engines included in this compliance plan are calculated in Table 4.

Table 4 NOx Emission Reductions from Affected Engines

Facility	Engine ID	Engine Designation	Horsepower	Past NOx Emission Rate ¹	Projected NOx Emission Rate ²	Projected Ozone Season Operating Hours ³	Projected Ozone Season Brake Horsepower Hours ⁴	NOx Emission Reductions Due to NOx Control Installation ⁵
			(hp)	(g/bhp-hr)	(g/bhp-hr)	(hr)	(bhp-hr)	(tps)
TGP Sta 87	Engine 1D	Large	3,400	36.73	8.00	3,672	12,484,000	395.40
	Engine 2D	Large	3,400	36.80	8.00	3,672	12,484,000	396.37
TGP Sta 860	Engine 1B	Large	3,400	16.21	7.00	3,672	12,484,000	126.69
NOx Emissions Reductions Due to NOx Control Installation, tps								918.47
TGP's Facility Seasonal 2007 NOx Tonnage Reduction (Required Reductions), tps⁶								773.72

1. The Past NOx Emission Rates used in these calculations are the uncontrolled NOx emission rates determined based on the data from the NOx SIP Call Engine Inventory. Supporting documentation is provided in Appendix B.
2. The projected NOx Emission Rates are based on permit limits for each engine. The Projected NOx Emission Rates were achieved as demonstrated by the initial performance tests. Please refer to Appendix C for copies of the test results.
3. As these engines operate under Federal Energy Regulatory Commission (FERC) certificate of public necessity, the projected hours are assumed to be equal to the potential hours.
4. Projected Ozone Season Brake Horsepower Hours are calculated by multiplying the horsepower by the projected ozone season operating hours.
5. NOx Emissions Reductions Due to NOx Control Installation (tps) = (Past NOx Emission Rate, g/bhp-hr – Projected NOx Emission Rate, g/bhp-hr) x Projected Ozone Season Brake Horsepower Hours, bhp-hr / 453.59 (g/lb) / 2,000 (lb/ton).
6. From Table 1.

As demonstrated in Table 4, the NOx emission reductions resulting from the installation of NOx controls on the affected engines exceed TGP's NOx emission reduction obligations. As the installation of controls is already completed and the projected NOx emission rates were achieved as demonstrated by the initial performance tests, TGP is in compliance with the NOx emission reduction requirements in TAPCR 1200-3-27-.09.

4.0 Additional Requirements Related to Compliance Plan Content

Rule TAPCR 1200-3-27-.09(3)(a)6 requires that the following information be provided in a compliance plan:

- i. A list of engines subject to the compliance plan including the engine manufacturer, model, facility location address and facility identification number.**

The information required in item 1 is provided in Table 5.

- ii. The projected ozone season hours of operation and supporting documentation.**

The gas transmission industry is regulated by Federal Energy Regulatory Commission (FERC). FERC mandates that the engines be available to operate at all times since they operate under a certificate of public necessity. Hence, TGP typically assumes continuous operation when calculating projected operating hours. Therefore, the projected ozone season hours of operation are based on continuous operation of 3,672 hours in 153 days⁷ during the ozone season.

- iii. A description of the NOx emission control installed, or to be installed, and documentation to support the Projected NOx emission rates.**

Description of controls installed or to be installed on the affected engines is provided in Section 3.0 of this plan. As stated previously, the installation of controls on the affected engines was properly permitted. Vendor's guarantees for the projected NOx emission

⁷ FERC allows units to be off-line for maintenance. However, TGP is projecting that the engines will operate and be controlled for a period of 3,672 hours/ ozone season other than the time they are offline for maintenance.

rates were submitted with the permit applications. Performance tests were conducted upon completion of the control installation to confirm that the Projected NOx emission rates were achieved. Copies of the test results are provided in Appendix C.

iv. The Past and Projected NOx emission rates in grams per brake horsepower-hour.

The Past and Projected NOx Emission Rates for each affected engine are provided in Table 4. The documentation for the Past NOx Emission Rates is provided in Appendix B.

v. A numerical demonstration that the emission reductions obtained from all engines included under the plan will be equivalent to or greater than the owner/operator's Facility Seasonal NOx 2007 Tonnage Reduction, based on the difference between the Past NOx Emission Rate and the Projected NOx Emission Rate, multiplied by the Projected Operating Hours for each Affected Engine, and considering credit under Part (3)(a)5. of this paragraph.

The calculation of the TGP's Facility Seasonal NOx 2007 Tonnage Reduction (Required Reductions) is provided in Table 1. Table 4 includes the calculation of the achieved NOx emissions reductions and demonstrates that the achieved reductions are greater than the TGP's Facility Seasonal NOx 2007 Tonnage Reduction.

vi. Provisions for monitoring, reporting and recordkeeping for each Affected Engine

Provisions for monitoring, reporting and recordkeeping for each Affected Engine are discussed in Section 5.0.

5.0 Provisions for Monitoring, Recordkeeping and Reporting.

5.1 Initial Compliance Demonstration

Pursuant to TAPCR 1200-3-27-.09(4)(a)1, an initial performance testing consistent with the requirements of 40 CFR part 60, Appendix A, must be conducted on each affected engine following the installation of the NOx emission controls. As stated previously, the

installation of emission controls on engines included in this plan is already completed and the initial performance tests were conducted to demonstrate that the Projected NOx Emission Rates were achieved.

The initial performance tests were conducted as follows:

1. Engines 1D and 2D at TGP Station 87 – on February 26, 2004; and
2. Engine 1B at TGP Station 860 – on June 18, 2003.

5.2 Periodic Monitoring

Rule TAPCR 1200-03-27-.09(4)(a)2 provides the following options for periodic monitoring to ensure continuous compliance with the Projected NOx Emission Rate during ozone season for the affected engines:

- (i) Performance tests consistent with the requirements of 40 CFR part 60, Appendix A, or portable monitors using ASTM D6522-00;
- (ii) A parametric monitoring program that specifies operating parameters, and their ranges, that will provide reasonable assurance that each engine's emissions are consistent with the requirements of 1200-03-27-.09(3);
- (iii) A predictive emissions measurement system that relies on automated data collection from instruments; or
- (iv) A continuous emission monitoring system that complies with 40 CFR parts 60 or 75.

TGP proposes to employ either parametric monitoring or portable analyzers using method ASTM D6522-00 as described below in more detail.

5.2.1 Engines 1D and 2D at Station 87

TGP will employ portable monitors using ASTM D6522-00 method once per ozone season on each engine which operates 300 hours or more than during that period.

5.2.2 Engine 1B at Station 860

A parametric monitoring plan was developed for Engine 1B in 2011. The parametric monitoring plan was approved by TDEC on February 4, 2014. TGP will employ either the approved parametric monitoring plan or use portable monitors during each ozone season. If using portable monitors during an ozone season, the monitoring will be conducted if the engine operates 300 hours or more during the ozone season. A

monitoring method will be selected by TGP before each ozone season. The following rules will be employed to govern switching between monitoring methods during each ozone season:

1. If the parametric monitoring plan option is selected, TGP may switch to using portable monitors at any time during the ozone season. Engine 1B will be tested using portable analyzers if it operated 300 hours or more during the ozone season counting operating hours during the time period when the parametric monitoring plan was utilized.
2. If a portable monitor method was selected to be used initially or switched to after the beginning of the ozone season, TGP cannot switch to parametric monitoring plan.

TGP will document monitoring methods used during each ozone season in the Annual Compliance Certification reports.

5.1 Recordkeeping and Reporting

TGP will maintain copies of this plan and all records necessary to demonstrate compliance with the requirements of TAPCR 1200-3-27-.09 for a period of five (5) calendar years at TGP Stations 87 and 860 where the affected engines are located. Pursuant to TAPCR 1200-3-27-.09(4)(b)2(i)-(v) the necessary records will include:

- a. Identification and location of each affected engine;
- b. Calendar date of record;
- c. The number of hours the unit operated during each ozone season compared to the Projected Operating Hours,
- d. Type and quantity of fuel used; and
- e. The results of all compliance tests.

The records will be made available to the Technical Secretary and EPA upon request as required in TAPCR 1200-3-27-.09(4)(b)1.

Results of the initial compliance tests were submitted and any future compliance test results will be submitted to the Technical Secretary as required in TAPCR 1200-3-27-.09(4)(c).

Table 5 TGP's Affected Engines in the State of Tennessee

Facility	Facility SRN Number	Facility Location Address	Facility Engine Identification	Engine Manufacturer	Engine Model	Comments
TGP Station 87	83-0008	208 TGT Road Portland TN 37148	Engine 1D	Cooper Bessemer	GMWC-10	Large NOx SIP Call Engine, LEC Installed in 2003
			Engine 2D	Cooper Bessemer	GMWC-10	Large NOx SIP Call Engine, LEC installed in 2003.
TGP Station 860	41-0002	2775 Highway 48 North Nunnelly TN 37137	Engine 1B	Clark	TCV-10	Large NOx SIP Call Engine, LEC installed in 2003.

Appendix A

Excerpts from EPA NOx SIP Call Engine Inventory

flpsst	flpscnty	plantid	plant	pointid	stackid	segment	sec	size	latc	lonc	noxce95	noxre95	dnox95	snox95	q9507	noxce07	noxre07	dnox07	snox07	noxce07b	dbnox	sdbnox
47	081	0002	TENNESSEE GAS PIPELINE STATION #860	001	1	1	20200202	S	35.8456	87.444	0	100	0.313	47.889	1.06	0	100	0.3318	50.7623	0	0.3318	50.7623
47	081	0002	TENNESSEE GAS PIPELINE STATION #860	002	2	1	20200202	S	35.8456	87.444	0	100	0.445	68.085	1.06	0	100	0.4717	72.1701	0	0.4717	72.1701
47	081	0002	TENNESSEE GAS PIPELINE STATION #860	003	3	1	20200202	S	35.8456	87.444	0	100	0.383	58.599	1.06	0	100	0.406	62.1149	0	0.406	62.1149
47	081	0002	TENNESSEE GAS PIPELINE STATION #860	004	4	1	20200202	S	35.8456	87.444	0	100	0.342	52.326	1.06	0	100	0.3625	55.4656	0	0.3625	55.4656
47	081	0002	TENNESSEE GAS PIPELINE STATION #860	005	5	1	20200202	S	35.8456	87.444	0	100	0.901	137.853	1.06	0	100	0.9551	146.1242	0	0.9551	146.1242
47	081	0002	TENNESSEE GAS PIPELINE STATION #860	006	6	1	20200202	S	35.8456	87.444	0	100	0.828	126.684	1.06	0	100	0.8773	134.285	0	0.8773	134.285
47	081	0002	TENNESSEE GAS PIPELINE STATION #860	007	7	1	20200202	S	35.8456	87.444	0	100	0.939	143.667	1.06	0	100	0.9953	152.287	0	0.9953	152.287
47	081	0002	TENNESSEE GAS PIPELINE STATION #860	008	8	1	20200202	S	35.8456	87.444	0	100	0.938	143.514	1.06	0	100	0.9943	152.1248	0	0.9943	152.1248
47	081	0002	TENNESSEE GAS PIPELINE STATION #860	009	9	1	20200202	S	35.8456	87.444	0	100	0.774	118.422	1.06	0	100	0.8204	125.5273	0	0.8204	125.5273
47	081	0002	TENNESSEE GAS PIPELINE STATION #860	010	10	1	20200202	S	35.8456	87.444	0	100	0.925	141.525	1.06	0	100	0.9805	150.0165	0	0.9805	150.0165
47	081	0002	TENNESSEE GAS PIPELINE STATION #860	011	11	1	20200202	S	35.8456	87.444	0	100	0.937	143.361	1.06	0	100	0.9932	151.9627	0	0.9932	151.9627
47	081	0002	TENNESSEE GAS PIPELINE STATION #860	012	12	1	20200202	S	35.8456	87.444	0	100	0.717	109.701	1.06	0	100	0.76	116.2831	0	0.76	116.2831
47	081	0002	TENNESSEE GAS PIPELINE STATION #860	013	13	1	20200202	L	35.8456	87.444	0	100	1.287	196.911	1.06	0	100	1.3642	208.7257	90	0.1364	20.8726
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	001	1	1	20200202	S	36.6156	86.559	0	100	0.169	25.857	1.06	0	100	0.1791	27.4084	0	0.1791	27.4084
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	002	2	1	20200202	S	36.6156	86.559	0	100	0.231	35.343	1.06	0	100	0.2449	37.4636	0	0.2449	37.4636
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	003	3	1	20200202	S	36.6156	86.559	0	100	0.157	24.021	1.06	0	100	0.1664	25.4623	0	0.1664	25.4623
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	004	4	1	20200202	S	36.6156	86.559	0	100	0.139	21.267	1.06	0	100	0.1473	22.543	0	0.1473	22.543
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	005	5	1	20200202	S	36.6156	86.559	0	100	0.137	20.961	1.06	0	100	0.1452	22.2187	0	0.1452	22.2187
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	006	6	1	20200202	S	36.6156	86.559	0	100	0.149	22.797	1.06	0	100	0.1579	24.1648	0	0.1579	24.1648
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	007	7	1	20200202	S	36.6156	86.559	0	100	0.116	17.748	1.06	0	100	0.123	18.8129	0	0.123	18.8129
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	008	8	1	20200202	S	36.6156	86.559	0	100	0.111	16.983	1.06	0	100	0.1177	18.002	0	0.1177	18.002
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	009	9	1	20200202	S	36.6156	86.559	0	100	0.15	22.95	1.06	0	100	0.159	24.327	0	0.159	24.327
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	010	10	1	20200202	S	36.6156	86.559	0	100	0.074	11.322	1.06	0	100	0.0784	12.0013	0	0.0784	12.0013
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	011	11	1	20200202	S	36.6156	86.559	0	100	0	0	1.06	0	100	0	0	0	0	0
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	012	12	1	20200202	S	36.6156	86.559	0	100	0	0	1.06	0	100	0	0	0	0	0
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	013	13	1	20200202	S	36.6156	86.559	0	100	0	0	1.06	0	100	0	0	0	0	0
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	014	14	1	20200202	S	36.6156	86.559	0	100	0	0	1.06	0	100	0	0	0	0	0
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	015	15	1	20200202	S	36.6156	86.559	0	100	0	0	1.06	0	100	0	0	0	0	0

flpsst	flpscty	plantid	plant	pointid	stackid	segment	scc	size	latc	lonc	noxce95	noxre95	dnoc95	snox95	q9507	noxce07	noxre07	dnoc07	snox07	noxce07b	dnoc07b	snox07b
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	016	16	1	20200202	S	36.6156	86.559	0	100	0	0	1.06	0	100	0	0	0	0	0
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	017	17	1	20200202	S	36.6156	86.559	0	100	0	0	1.06	0	100	0	0	0	0	0
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	018	18	1	20200202	S	36.6156	86.559	0	100	0	0	1.06	0	100	0	0	0	0	0
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	019	19	1	20200202	S	36.6156	86.559	0	100	0	0	1.06	0	100	0	0	0	0	0
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	020	20	1	20200202	S	36.6156	86.559	0	100	0	0	1.06	0	100	0	0	0	0	0
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	021	21	1	20200202	S	36.6156	86.559	0	100	0	0	1.06	0	100	0	0	0	0	0
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	022	22	1	20200202	S	36.6156	86.559	0	100	0.417	63.801	1.06	0	100	0.442	67.6291	0	0.442	67.6291
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	023	23	1	20200202	S	36.6156	86.559	0	100	0.423	64.719	1.06	0	100	0.448	68.6021	0	0.448	68.6021
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	024	24	1	20200202	S	36.6156	86.559	0	100	0.349	53.397	1.06	0	100	0.369	56.6008	0	0.369	56.6008
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	025	25	1	20200202	S	36.6156	86.559	0	100	0.333	50.949	1.06	0	100	0.353	54.0059	0	0.353	54.0059
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	026	26	1	20200202	S	36.6156	86.559	0	100	0.209	31.977	1.06	0	100	0.221	33.8956	0	0.221	33.8956
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	027	27	1	20200202	S	36.6156	86.559	0	100	0.221	33.813	1.06	0	100	0.234	35.8418	0	0.234	35.8418
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	028	28	1	20200202	S	36.6156	86.559	0	100	0.332	50.796	1.06	0	100	0.351	53.8438	0	0.351	53.8438
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	029	29	1	20200202	S	36.6156	86.559	0	100	0.332	50.796	1.06	0	100	0.351	53.8438	0	0.351	53.8438
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	030	30	1	20200202	S	36.6156	86.559	0	100	0.482	73.746	1.06	0	100	0.510	78.1708	0	0.510	78.1708
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	031	31	1	20200202	L	36.6156	86.559	0	100	2.28	348.84	1.06	0	100	2.416	369.7704	90	0.2417	36.977
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	032	32	1	20200202	L	36.6156	86.559	0	100	2.251	344.403	1.06	0	100	2.386	365.0672	90	0.2386	36.5067
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	033	33	1	20200202	S	36.6156	86.559	0	100	0	0	1.06	0	100	0	0	0	0	0
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	034	34	1	20200202	S	36.6156	86.559	0	100	0.197	30.141	1.06	0	100	0.208	31.9495	0	0.208	31.9495
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	035	35	1	20200202	S	36.6156	86.559	0	100	0.115	17.595	1.06	0	100	0.121	18.6507	0	0.121	18.6507
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	036	36	1	20200202	S	36.6156	86.559	0	100	0.064	9.792	1.06	0	100	0.067	10.3795	0	0.067	10.3795
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	037	37	1	20200202	S	36.6156	86.559	0	100	0.24	36.72	1.06	0	100	0.254	38.9232	0	0.254	38.9232
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	038	38	1	20200202	S	36.6156	86.559	0	100	0.287	43.911	1.06	0	100	0.304	46.5457	0	0.304	46.5457
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	039	39	1	20200202	S	36.6156	86.559	0	100	0.02	3.06	1.06	0	100	0.021	3.2436	0	0.021	3.2436
47	165	0008	TENNESSEE GAS PIPELINE STATION #87	040	40	1	20200202	S	36.6156	86.559	0	100	0.018	2.754	1.06	0	100	0.019	2.9192	0	0.019	2.9192

Notes:

Large NOx SIP Call engines are denoted by bold border and shading.

The required NOx emission reduction efficiency for large engines was changed from 90% to 82%, Fed. Reg. Vol. 69, No. 77, April 21, 2004

Appendix B

Supporting Documentation for Past NO_x Emission Rates

TGP Company
Compliance Plan Pursuant to TAPCR 1200-3-27-.09

1995 Ozone Season Emissions Inventory
TGP's Affected Engines in Tennessee

Facility	Engine ID	HP	Operating hours ¹						NOx Emissions ²		NOx Emission Factor ³
			May	June	July	August	September	Total			
		(hp)	(hr)	(hr)	(hr)	(hr)	(hr)	(hr)	(tpd)	(tons)	(g/hp-hr)
Station 87	Engine 1D	3,400	726	397	579	546	286	2,534	2.280	348.84	36.73
	Engine 2D	3,400	389	717	470	566	355	2,497	2.251	344.40	36.80
Station 860	Engine 1B	3,400	646	547	720	712	617	3,242	1.287	196.91	16.21

¹ From the 1995 operating records for Stations 87 and 860

² NOx Emissions in tpd as represented in the NOx SIP Call Engine Inventory. NOx emissions in tons calculated by multiplying NOx Emissions in tpd by 153 days in ozone season

³ NOx emission factor calculated as follows: NOx emissions (tons) x 2000 lb/ton x 453.59 g/lb / Total Operating Hours (hr) / Horsepower

Appendix C

Results of Initial Performance Tests

INTRODUCTION

Compliance NOx emissions sampling of two (2) lean burn, two-stroke cycle reciprocating compressor engines (Cooper-Bessemer GMWC-10) of Tennessee Gas Pipeline Company (TGP) Compressor Station 87, Portland, Tennessee was performed by personnel of Southwestern Laboratories, Inc. (SwL) Air Emissions Services (AES) Division. The engines fire natural gas and were site rated at 3,400 horsepower (hp) each. Present during the sample program were: Mr. Bryan Parker of the Air Pollution Control Division of the Tennessee Department of Environment and Conservation, Messrs. Jon Tice and Mike Chandler of Tennessee Gas Pipeline Company (TGP) and Mr. Wes Bear of SwL. Testing for NOx and O₂ was performed on Engine Nos. 1D and 2D on February 26, 2004.

Sampling was conducted to determine the concentrations and emission rates of nitrogen oxides (NOx) from each engine to determine compliance with TDEC Title V Operating Permit No. 546586 and to confirm NOx reduction resulting from combustion modification (see Discussion and TGP Emissions Test Protocol located in Appendix). A total of three (3) sixty (60) minute sample runs were performed while each engine operated at greater than 90% of rated peak load. In general, Environmental Protection Agency (EPA) protocols were utilized during the sampling and analytical program.

RESULTS

Results of the individual runs, calculated in accordance with EPA procedures, are contained in the Tables section of this report. The average emissions are shown below.

Source	Average Concentration (ppmvd)	Average Emission Rate (lb/hr)	Average Emission Rate (tons/yr)*	Average Emission Rate (g/hp-hr)
<i>Engine No. 1D</i>				
NOx	514.11	43.69	191.38	5.89
<i>Engine No. 2D</i>				
NOx	387.23	33.94	148.66	4.65
* Calculation based on 8,760 operating hours per year.				

Test Summary

A maximum load test, consisting of three test runs, was conducted the Clark TCV-10 reciprocating engine at the Tennessee Gas Pipeline Station 860 Facility. The Clark TCV-10 (Unit 1B) tested below its applicable emission limit. Summaries of results from the unit are depicted below in Table 2. Detailed summaries of the units' results are included in the APPENDICES.

Results

Table 2. Average emissions summary, Unit 1B, Clark TCV-10.

Parameter	Run 1	Run 2	Run 3	Avg.
Time Tested	9:08	10:28	11:40	
Percent Load	99.74	99.94	100.50	
NO _x (ppm)	583.04	597.54	599.86	
NO _x (lb/hr)	43.32	43.98	44.24	
Oxygen (%)	13.20	13.16	13.17	
Fuel Flow (scfm)	424.78	424.50	425.86	



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Facility Name: Tennessee Gas Pipeline Company, L.L.C.-Compressor Station 87
Permit Number: 581660
Permit Writer: MAL (615) 571-2817

Facility ID Number: 83-0008
Date Application Received: August 1, 2023 and
July 9, 2025
Date Application Completed: August 1, 2023

FACILITY CATEGORY

This facility is a major source of emissions. The facility-wide Potential to Emit (PTE) of one or more regulated air pollutants (Carbon Monoxide (CO), Volatile Organic Compounds (VOCs), Nitrogen Oxide (NOx), a single Hazardous Air Pollutant (HAP), and a combination of Hazardous Air Pollutants (HAPs)) is at or above the Prevention of Significant Deterioration (PSD) and Title V major source thresholds. The PSD applicability threshold for this facility is 250 TPY because it is not one of the 28 listed source categories in the PSD regulations.

FACILITY DESCRIPTION

Natural gas compressor station

PROJECT DESCRIPTION

Tennessee Gas Pipeline Company, L.L.C.-Compressor Station 87 is requesting a Title V Operating Permit renewal. As a part of this renewal, sulfur dioxide emissions are being adjusted to account for the true sulfur content in the natural gas received and consumed by the facility (5 gr S/100 dscf). This sulfur content information is based upon tariff information supplied by the permittee.

COMPLIANCE STATUS

This facility is located in an attainment area for all criteria pollutants according to the NAAQS.

COLLOCATION DETERMINATION

Collocation is not applicable to this facility.

PERMIT REGISTRY

A permit registry notification is not required for this permit.

PUBLIC NOTICE

This Title V Permit Renewal will undergo a 30-day public notice period and a 45-day EPA comment period in accordance with TAPCR 1200-03-09-.02(11). The notice was published on the TDEC website on August 13, 2026. The affected states were notified on August 13, 2026.

ADDITIONAL PUBLIC PARTICIPATION

DRAFT-PROPOSED August 13, 2026



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Table 1A: FACILITY EMISSION SOURCES

Source Number	Source Description	Permitted	Exempt/Insignificant	PBR
01	Twenty-two natural gas-fired reciprocating engines	X		
02	Two natural gas-fired emergency generator engines	X		
03	Two natural gas-fired heaters and two natural gas-fired evaporators	X		
Insignificant Activities	Please refer to permit condition E3-11 for a full list of Insignificant Activities		X	

Table 1B: CHANGES SINCE LAST PERMIT ISSUANCE

Description	Date
Revised Delegated Authority	July 31, 2024

REGULATORY APPLICABILITY REVIEW

Regulations	Comments/ Requirements (Monitoring/Recordkeeping/Reporting/Testing)
<u>Chapter 6</u> TAPCR 1200-03-06-.01(7) TAPCR 1200-03-06-.03(2)	Applicable This facility has fuel burning sources. Compliance is assured by the following: Emission Source 83-0008-01: <u>Twenty-Two natural gas-fired reciprocating engines</u> Heat input rate of 478.75 MMBtu/hr (combined); the burning of natural gas as the only fuel; AP-42 Emission Factors (Tables 3.2-1 and 3.2-2 (10/24)); calculations, and recordkeeping. Note: TAPCR 1200-03-06-.03(2) is cited for NOx emissions from Engines 1D and 2D (operating requirements), as well as for NOx and CO for Engines 1E And 2E (PSD avoidance limits). Emission Source 83-0008-02: <u>Two natural gas-fired emergency generator engines</u> Heat input rate of 9.52 MMBtu/hr (combined), the burning of natural gas as the only fuel, and annual certification of compliance. Emission Source 83-0008-03: <u>Two natural gas-fired heaters and two natural gas-fired evaporators</u> Heat input rate of 9.645 MMBtu/hr (combined), the burning of natural gas as the only fuel, and annual certification of compliance.
<u>Chapter 7</u>	<i>Not Applicable:</i> This project does not have any process emission sources.



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REGULATORY APPLICABILITY REVIEW

Regulations	Comments/ Requirements (Monitoring/Recordkeeping/Reporting/Testing)
<u>Chapter 10</u>	<i>Not Applicable:</i> This project is not subject to any source testing requirements outlined in this chapter.
<u>Chapter 14</u>	Applicable This Facility has sources that emit SO₂. Compliance is assured by the following: Emission Source 83-0008-01: <u>Twenty-Two natural gas-fired reciprocating engines</u> Heat input rate of 478.75 MMBtu/hr (combined), the burning of natural gas as the only fuel, Natural Gas sulfur limit of 5 gr/100 dscf as stated in TGP FERC NGA Gas Tariff Excerpt, calculations, and recordkeeping. Emission Source 83-0008-02: <u>Two natural gas-fired emergency generator engines</u> Heat input rate of 9.52 MMBtu/hr (combined), the burning of natural gas as the only fuel, Natural Gas sulfur limit of 5 gr/100 dscf as stated in TGP FERC NGA Gas Tariff Excerpt, calculations, and recordkeeping. Emission Source 83-0008-03: <u>Two natural gas-fired heaters and two natural gas-fired evaporators</u> Heat input rate of 9.645 MMBtu/hr (combined), the burning of natural gas as the only fuel, Natural Gas sulfur limit of 5 gr/100 dscf as stated in TGP FERC NGA Gas Tariff Excerpt, calculations, and recordkeeping.
<u>Other state regulations:</u> <u>Chapter(s) 16, 18, 22, 25, 27,</u> <u>etc.</u>	Applicable: <u>TAPCR 1200-03-18-.02(8)/1200-03-27-.02(6):</u> The facility is located in Sumner County and has potential emissions from stationary sources of 25 tons or more of volatile organic compounds (VOCs) and/or nitrogen oxides (NOx) during a calendar year. See below (special conditions) for further discussion regarding TAPCR 1200-03-27
<u>40 CFR 60</u>	<i>Not Applicable:</i> This facility does not contain sources subject to this regulation.
<u>40 CFR 61</u>	<i>Not Applicable:</i> This facility emits minimal HAP emissions from fuel combustion.
<u>40 CFR 62</u>	<i>Not Applicable:</i> This facility is not subject to any Federal Plans specified in 40 CFR 62.13



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REGULATORY APPLICABILITY REVIEW

Regulations	Comments/ Requirements (Monitoring/Recordkeeping/Reporting/Testing)
<u>40 CFR 63</u>	Applicable: The facility is a major source of HAP emissions. HAP emissions are equal to and/or exceed the major threshold of 10 TPY for a single HAP and 25 TPY for total HAPs. <u>Subpart ZZZZ</u> Emission Source 83-0008-02: <u>Two natural gas-fired emergency generator engines:</u> <u>Engine A-Aux-6</u>, a 4-cycle (stroke) lean-burn reciprocating natural gas-fired emergency generator is subject to limited requirements. However, it is exempt from the emission and operating limitations of the regulation as outlined in 40 CFR §63.6600(c), because it operates as an emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions. <u>Engine T-Aux-01</u>, a 4-cycle (stroke) rich-burn reciprocating natural gas-fired emergency generator is subject to the requirements for existing emergency stationary RICE with a site rating of less than 500 horsepower located at a major source of HAP emissions. <u>Subpart DDDDD</u> Emission Source 83-0008-03: <u>One natural gas-fired jacket water heater, and One natural gas-fired waste water evaporator</u> The facility's natural gas-fired jacket water heaters and evaporators are subject to the requirements of this subpart, including natural gas fuels, recordkeeping, reporting, and tune-up requirements.
<u>40 CFR 68</u>	<i>Not Applicable:</i> The facility does not use or store the subject chemicals above threshold quantities.
<u>40 CFR 64</u>	Applicable: CAM is applicable to <u>Engines 1E and 2E</u> of Emission Source 83-0008-01 <u>Engines 1E and 2E</u> are subject to an emission limitation or standard, use a control device to achieve compliance, and have potential pre-control emissions that exceed or are equivalent to the major source threshold.



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REGULATORY APPLICABILITY REVIEW

Regulations	Comments/ Requirements (Monitoring/Recordkeeping/Reporting/Testing)
<u>Special Conditions, Monitoring, Limits</u>	Applicable: This permit renewal contains requirements for the following special conditions: Emission Source 83-0008-01: <u>Twenty-Two natural gas-fired reciprocating engines</u> • The operation of an electronic fuel injection system on <u>Engines 1D and 2D</u> for the control of NOx emissions • The utilization of catalytic converters on <u>Engines 1E and 2D</u> for the control of NOx emissions • The utilization of clean-burn retrofit modification on <u>Engine 3D</u> for the control of NOx emissions • PSD Avoidance Limits ○ 50 lb NOx/hr for <u>Engines 1E and 2E</u> combined ○ 20 lb CO/hr for <u>Engines 1E and 2E</u> combined • NOx SIP Requirements ○ Operating requirements for <u>Engines 1D and 2D</u> during the period May 1 through September 30 of each year ○ 791.77 tons of NOx reduction during ozone season resulting from combustion modifications of <u>Engines 1D and 2D</u> shall be credited towards the permittee's NOx SIP compliance obligations
Modeling Review	<i>Not Applicable:</i> This <project/facility > does not emit Pb, HCl or HF.
Previous Permit Number(s)	573045

EMISSION SUMMARY

Table 2: FACILITY WIDE EMISSION LIMIT

Not Applicable



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Table 3: FACILITY WIDE EMISSIONS

FACILITY WIDE EMISSIONS			
Pollutant	Actual/Controlled Emissions	Uncontrolled Emissions	Potential to Emit (PTE)
	TPY	TPY	TPY
PM	81.71	81.71	81.71
SO ₂	30.16	30.16	30.16
NO _x	4425.19	4425.19	4425.19
CO	356.90	356.90	356.90
VOC	258.00	258.00	258.00
Total HAPs	161.75	161.75	161.75

Notes: Facility allowable emissions under permit 573045 for PM and SO₂ were based on TAPCR allowable emissions as provided in 1200-03-06 and 1200-03-14. The renewed permit contains PM and SO₂ allowable emissions limits that are based on the maximum actual emissions as related in the permit application dated August 1, 2023. For VOC and NO_x, previously permitted emissions are maintained; however, they have been converted to a single ton/yr emission limit for each emission source as a whole.

Table 4: SOURCE SPECIFIC EMISSIONS

PERMIT EMISSIONS						
Source	Pollutant	Actual /Controlled Emissions	Regulatory Allowable Emissions	Uncontrolled Emissions	Potential to Emit (PTE)	Permitted Allowable
		lb/hr	gr/dscf/lb/hr/lb/MMBTU	lb/hr	lb/hr	gr/dscf/lb/hr/lb/MMBTU
01	PM	18.57	Engines 1A – 9A (each): 0.54 lb/MMBtu Engines 1C – 6C (each): 0.55 lb/MMBtu Engines 7C – 8C (each): 0.51 lb/MMBtu Engines 1D – 2D (each): 0.46 lb/MMBtu Engine 3D: 0.40 lb/MMBtu Engines 1E – 2E (each): 0.22 lb/MMBtu	18.57	18.57	18.57 lb/hr
02	PM	0.10	0.60 lb/MMBtu	0.07	0.10	
03	PM	0.07	0.60 lb/MMBtu	0.07	0.07	0.07 lb/hr
01	SO ₂	6.68	5.00 lb/MMBtu	6.68	6.68	6.68 lb/hr
02	SO ₂	0.14	5.00 lb/MMBtu	0.14	0.14	0.14 lb/hr
03	SO ₂	0.14	5.00 lb/MMBtu	0.14	0.14	0.14 lb/hr

PERMIT EMISSIONS				
SOURCE 01				
Pollutant	Actual/Controlled Emissions	Uncontrolled Emissions	Potential to Emit (PTE)	Permitted Allowable
	TPY	TPY	TPY	TPY
PM/PM ₁₀ /PM _{2.5}	81.34	81.34	81.34	81.34
SO ₂	29.26	29.26	29.26	29.26
NO _x	4409.78	4409.78	4409.78	4409.78



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PERMIT EMISSIONS

SOURCE 01

Pollutant	Actual/Controlled Emissions	Uncontrolled Emissions	Potential to Emit (PTE)	Permitted Allowable
	TPY	TPY	TPY	TPY
CO	349.70	349.70	349.70	--
VOC	250.62	250.62	250.62	250.62
Total HAPs	161.45	161.45	161.45	--

PERMIT EMISSIONS

SOURCE 02

Pollutant	Actual/Controlled Emissions	Uncontrolled Emissions	Potential to Emit (PTE)	Permitted Allowable
	TPY	TPY	TPY	TPY
PM/PM ₁₀ /PM _{2.5}	0.03	0.03	0.03	0.03
SO ₂	0.04	0.04	0.04	0.04
NO _x	9.39	9.39	9.39	9.39
CO	2.14	2.14	2.14	--
VOC	0.42	0.42	0.42	0.42
Total HAPs	0.17	0.17	0.17	--

Notes:

PERMIT EMISSIONS

SOURCE 03

Pollutant	Actual/Controlled Emissions	Uncontrolled Emissions	Potential to Emit (PTE)	Permitted Allowable
	TPY	TPY	TPY	TPY
PM/PM ₁₀ /PM _{2.5}	0.31	0.31	0.31	0.31
SO ₂	0.61	0.61	0.61	0.61
NO _x	4.12	4.12	4.12	4.12
CO	3.46	3.46	3.46	--
VOC	0.18	0.18	0.18	0.18
Total HAPs	0.09	0.09	0.09	--

SUMMARY AND CONCLUSIONS

It has been determined that this facility, if operated in accordance with the submitted application, will meet all applicable requirements and emission standards.