

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

PLAN APPROVAL

Plan Approval No.:	<u>PA-53-0001</u>	Source &	<u>11 natural gas-fired reciprocating</u>
Owner:	<u>Tennessee Gas Pipeline Company</u>	Air	<u>engines, as described herein</u>
		Cleaning	<u></u>
Address:	<u>P. O. Box 2511</u>	Device:	<u></u>
	<u>Houston, Texas 77252-2511</u>		<u></u>
Attn:	<u>Mr. Nasir Ghani</u>	Location:	<u>Station 313</u>
	<u>Environmental Scientist</u>		<u>Hebron Township, Potter County</u>

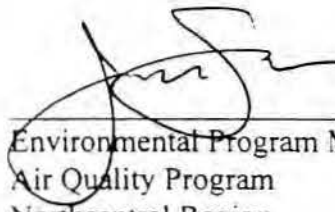
In accordance with provisions of the Air Pollution Control Act, the Act of January 8, 1960, P.L. 2119, as amended, and with Chapter 127 of the rules and regulations of the Department of Environmental Protection, the Department on NOV 24 1995 approved plans for the installation of air cleaning devices on, and the modification of, the above indicated air contamination source.

~~This PLAN APPROVAL expires May 24, 1996~~

The plan approval is subject to the following conditions:

- (1) The air cleaning devices are to be installed and the engines are to be modified in accordance with the plans submitted with the application (as approved herein).

See attached for additional conditions.


Environmental Program Manager
Air Quality Program
Northcentral Region

cc: Harrisburg
Mansfield
File

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2. This plan approval incorporates Reasonably Available Control Technology (RACT) determinations as required by the provisions of Title I of the Clean air Act Amendments and 25 Pa. Code Sections 129.91 through 129.95 for ten 1320 horsepower Ingersoll Rand KVG-412 natural gas-fired reciprocating engines and one 3000 horsepower Ingersoll Rand KVT-512 natural gas-fired reciprocating engine.
3. This plan approval is issued for the installation of nonselective catalytic reduction (NSCR) nitrogen oxides control systems on the 10 Ingersoll Rand KVG-412 engines identified in condition 2 herein. This plan approval is also issued for the modification of the respective engines, said modification consisting of an increase of up to 175.6 tons of carbon monoxide per year for each engine.
4. It is the Department's position that the installation of NSCR control systems on the Ingersoll Rand KVG-412 engines is environmentally beneficial and that the associated increase in carbon monoxide emissions from the engines is therefore exempt from the Federal Prevention of Significant Deterioration regulations (40 CFR 52.21).
5. This plan approval is also issued for the installation of parametric controls (air/fuel controls and an ignition timing controller) on the Ingersoll Rand KVT-512 engine identified in condition 2 herein.
6. Pursuant to the RACT provisions of Sections 129.91 through 129.95 of Chapter 129 of Article III of the Rules and Regulations of the Department of Environmental Protection, the nitrogen oxides (NO_x , expressed as NO_2) emissions from each of the 10 Ingersoll Rand KVG-412 engines shall not exceed 8.7 pounds per hour following the installation of NSCR (except as may be allowed pursuant to compliance permit CP-53-0001 and/or condition 8 herein).
- ~~Additionally, the carbon monoxide emissions from each of these 10 engines shall not exceed 41.86 pounds per hour following the installation of NSCR (except as may be allowed pursuant to compliance permit CP-53-0001 and/or condition 8 herein). Compliance with the carbon monoxide emission limitation specified herein shall be based upon the average of the results from 3 consecutive one hour stack test runs. The Department reserves the right to establish a more stringent carbon monoxide emission limit for these engines following the availability of additional test data.~~
7. Pursuant to the RACT provisions of Sections 129.91 through 129.95 of Chapter 129 of Article III of the Rules and Regulations of the Department of Environmental Protection, the nitrogen oxides (NO_x , expressed as NO_2) emissions from the Ingersoll Rand KVT-512 engine shall not exceed 99.0 pounds per hour following the installation of parametric controls (except as may be allowed pursuant to compliance permit CP-53-0001 and/or condition 8 herein).

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8. The 10 Ingersoll Rand KVG-412 engines and the Ingersoll Rand KVG-512 engine are not required to comply with the emission limits specified in conditions 6 and 7 herein during engine startup and shutdown provided that the duration of startup or shutdown does not exceed one hour per occurrence.
9. Only pipeline quality natural gas is to be used as fuel in the respective engines.
10. This plan approval supersedes the plan approval bearing the same number which was issued on 12/27/94.
11. Installation of NSCR on the 10 Ingersoll Rand KVG-412 engines and the implementation of RACT shall proceed as expeditiously as practicable but shall not extend beyond May 24, 1996. This extension beyond the May 31, 1995 RACT compliance date specified in Section 129.91 of Chapter 129 of Article III of the Rules and Regulations of the Department of Environmental Protection is contingent upon compliance with the terms and conditions of compliance permit CP-53-0001.
12. By no later than July 31, 1996, and at approximately 5 year intervals thereafter, the company shall perform stack testing upon the Ingersoll Rand KVT-512 engine and upon each of the 10 Ingersoll Rand KVG-412 engines for nitrogen oxides, carbon monoxide and volatile organic compounds using reference method test procedures acceptable to the Department.
13. At least 60 days prior to the performance of the testing required by condition 12 herein, a pretest plan shall be submitted to the Department for revaluation. This test plan shall contain the specific testing and analytical procedures to be used in performing the testing.
14. The Department shall be given at least 14 days advance notice of the specific dates and times for the performance of the testing required by condition 12 herein in order that Department personnel can arrange to be present. The Department is under no obligation to accept the results of any testing performed without adequate advance notice having been given to the Department.
15. Within 60 days of completion of the testing required by condition 12 herein, two copies of the test report shall be submitted to the Department. The report shall contain the results of the testing reported above in pounds per hour and grams per horsepower hour, a description of the testing and analytical procedures actually used, all engine operating data collected during the tests, a copy of all raw data and a copy of the calculations generated during data analysis.

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COMPANY: Tennessee Gas Pipeline Company

16. In addition to the testing required by condition 12 herein, the company shall perform semi-annual NO_x tests upon each of the respective engines identified in condition 2 herein using a portable exhaust gas analyzer which has been approved by the Department. The first such testing shall occur no more than six months after the testing required by condition 12 herein.
17. The company shall submit specifications to the Department for the portable exhaust gas analyzer it proposes to use to comply with condition 16 herein by no later than 90 days after the testing required by condition 12 herein.
18. The results of all testing performed pursuant to condition 16 herein shall be submitted to the Department within 30 days of test performance.
19. In addition to the testing required by conditions 12 and 16 herein, the Department reserves the right to require such additional testing upon the respective engines as it may deem necessary to determine compliance with any condition contained herein.
20. The company shall maintain comprehensive accurate records in accordance with 25 Pa. Code 129.95. These shall include:
 - The number of hour per calendar year that each of the engines identified in condition 2 herein is operated.
 - The amount of fuel used per calendar year in each of the engines identified in condition 2 herein.

These records are to be retained for a minimum of 2 years and shall be made available to the Department upon request. The Department reserves the right to expand the list contained in this condition.

21. Issuance of an operating permit for the engines identified in condition 2 herein is contingent upon satisfactory demonstration of compliance with all applicable conditions contained herein as well as with the requirements specified in, or established pursuant to, all applicable rules and regulations contained in Article III of the Rules and Regulations of the Department of Environmental Protection.

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COMPANY: Tennessee Gas Pipeline Company

22. This plan approval authorizes the temporary operation of the Ingersoll Rand KVT-512 engine for up to 180 days from the date of plan approval issuance.

This plan approval also authorizes the temporary operation of each of the 10 Ingersoll Rand KVG-412 engines for a period of up to 180 days once RACT has been implemented on that engine in accordance with the schedule contained in compliance permit CP-53-0001 (at which time any authorization to operate the respective engine which may have been granted by compliance permit CP-53-0001 will be null and void). In order to qualify for the authorization to operate provided by this condition, however, the Department must receive written notice of the completion of the RACT control installation on each of the respective 10 engines within 5 days of completion.

23. Any notification required as a result of any condition herein should be directed to: Richard L. Maxwell, Jr., Chief, Engineering Services, 208 West Third Street, Suite 101, Williamsport, PA 17701-6448, telephone (717) 327-3640.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

OPERATING PERMIT

In accordance with provisions of the Air Pollution Control Act, the Act of January 8, 1960, P.L. 2119, as amended, and after due consideration of an application received under Chapter 127 of the rules and regulations of the Department of Environmental Protection, the Department hereby issues this permit for the operation of the air contamination source(s) described below.

Permit No.:	<u>OP-53-0001</u>	Source &	<u>Cooper Bessemer GMVH-10C</u>
Owner:	<u>Tennessee Gas Pipeline Company</u>	Air	<u>engine and other sources as</u>
		Cleaning	<u>described herein</u>
Address:	<u>P. O. Box 2511</u>	Device:	<u></u>
	<u>Houston, TX 77252-2511</u>		<u></u>
Attn:	<u>Mr. Nasir Ghani</u>	Location:	<u>Station 313</u>
	<u>Environmental Scientist</u>		<u>Hebron Township, Potter County</u>

This permit is subject to the following conditions:

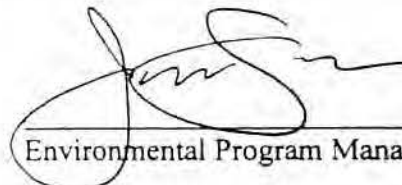
1. That the source(s) and any associated air cleaning device(s) are to be:
 - a. operated in such a manner as not to cause air pollution;
 - b. in compliance with the specifications and conditions of the applicable plan approval(s) issued;
 - c. operated and maintained in a manner consistent with good operating and maintenance practices.
2. This permit is valid only for the specific equipment, location and owner named above.

See attached for additional conditions.

Failure to comply with the conditions placed on this permit is a violation of Section 127.444. Violation of this or any other provision of Article III of the rules and regulations of the Department of Environmental Protection will result in suspension or revocation of this permit and/or prosecution under Section 9 of the Air Pollution Control Act.

Issued: NOV 27 1995

~~Expires: November 30, 2000~~



Environmental Program Manager

cc: Harrisburg
File
Mansfield

PERMIT CONDITIONS

PERMIT NO.: OP-53-0001

COMPANY: Tennessee Gas Pipeline Company

3. This operating permit includes Reasonably Available Control Technology (RACT) determinations as required by Title I provisions of the Clean Air Act Amendments and 25 Pa. Code Sections 129.91 through 129.95 for:
- 2000 horsepower Cooper Bessemer GMVH-10C reciprocating engine
 - 544 horsepower Ingersoll Rand PSVG-8 reciprocating engine (auxiliary generator)
 - 4.0 million BTU/hour jacket water heater
 - .105 million BTU/hour Measurement Building furnace
 - .03 million BTU/hour dehydration heater
 - 2.0 million BTU/hour dehydration boiler
 - .105 million BTU/hour office furnace
 - two .26 million BTU/hour Water Treatment Building heaters
 - fire water burner
 - 1.0 million BTU/hour Oakite tank burner

All of these sources are fired on natural gas.

4. This operating permit supersedes operating permit 53-399-001 with respect to the Cooper Bessemer GMVH-10C engine.
5. Pursuant to the RACT provisions of Sections 129.91 through 129.95 of Chapter 129 of Article III of the Rules and Regulations of the Department of Environmental Protection, the nitrogen oxides (NO_x , expressed as NO_2) emissions from the Cooper Bessemer GMVH-10C engine shall comply with the NO_x emission rate specified in condition 22 herein (except as may be allowed pursuant to condition 23 herein).
6. Pursuant to the presumptive RACT provisions of Section 129.93(c) of Chapter 129 of Article III of the Rules and Regulations of the Department of Environmental Protection, the Ingersoll Rand PSVG-8 engine (generator) shall be maintained and operated in accordance with manufacturers specifications as well as in accordance with good air pollution control practices. Additionally, this engine (generator) shall not be operated 500 or more hours in any consecutive 12 month period.

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COMPANY: Tennessee Gas Pipeline Company

7. Pursuant to the presumptive RACT requirements of Section 129.93(c) of Chapter 129 of Article III of the Rules and Regulations of the Department of Environmental Protection, the jacket water heater, Measurement Building furnace, dehydration heater, dehydration boiler, office furnace, Water Treatment Building heaters, fire water burner and Oakite Tank burner shall be maintained and operated in accordance with manufacturers specifications as well as in accordance with good air pollution control practices.
8. Within 120 days of the issuance of this operating permit, and at approximately 5 year intervals thereafter, the company shall perform stack testing upon the Cooper Bessemer GMVH-10C engine for nitrogen oxides, carbon monoxide, total hydrocarbons and volatile organic compounds using reference method test procedures acceptable to the Department.
9. At least 60 days prior to the performance of the testing required by condition 8 herein, a pretest plan shall be submitted to the Department for evaluation. This test plan shall contain the specific testing and analytical procedures to be used in performing the testing.
10. The Department shall be given at least 14 days advance notice of the specific dates and times for the performance of the testing required by condition 8 herein in order that Department personnel can arrange to be present. The Department is under no obligation to accept the results of any testing performed without adequate notice having been given to the Department.
11. Within 60 days of completion of the testing required by condition 8 herein, two copies of the test report shall be submitted to the Department. The report shall contain the results of the testing reported above in pounds per hour and grams per horsepower hour, a description of the testing and analytical procedures actually used, all engine operating data collected during the tests, a copy of all raw data and a copy of the calculations generated during data analysis.
12. In addition to the testing required by condition 8 herein, the company shall perform a semi-annual nitrogen oxides test upon the Cooper Bessemer GMVH-10C engine using a portable exhaust gas analyzer which has been approved by the Department. The first such testing shall occur no more than 6 months after the testing required by condition 8 herein.
13. The company shall submit specifications to the Department for the portable exhaust gas analyzer it proposes to use to comply with condition 12 herein by no later than 90 days after the testing required by condition 8 herein.
14. The results of all testing performed pursuant to condition 12 herein shall be submitted to the Department within 30 days of test performance.

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COMPANY: Tennessee Gas Pipeline Company

15. In addition to the testing required by conditions 8 and 12 herein, the Department reserves the right to require such additional testing upon any of the sources identified herein as it may deem necessary to determine compliance with any condition contained herein.
16. The company shall maintain comprehensive accurate records in accordance with 25 Pa. Code 129.95. These shall include:
 - The number of hours per calendar year that the Cooper Bessemer GMVH-10C engine is operated.
 - The amount of fuel used per calendar year in the Cooper Bessemer GMVH-10C engine.
 - The number of hours per calendar year that the Ingersoll Rand PSVG-8 engine (generator) is operated.

These records shall be retained for a minimum of 2 years and shall be made available to the Department upon request. The Department reserves the right to expand the list contained in this condition.

17. This operating permit supersedes the operating permit bearing the same number which was issued on 12/27/94.
18. The expiration date shown in this operating permit is for state purposes. For Federal enforcement purposes the RACT provisions of the operating permit shall remain in effect as part of the State Implementation Plan (SIP) until replaced pursuant to 40 CFR 51 and approved by the U.S. Environmental Protection Agency (EPA). The operating permit shall become enforceable by the U.S. EPA upon its approval of the above as a revision to the SIP.
19. If at any time the permittee causes, permits or allows any modification (as that term is defined in Chapter 121 of Title 25, the Rules and Regulations of the Department of Environmental Protection) of the aforementioned air contamination source(s), the operation and use of which is authorized by this permit, or causes, permits or allows any modifications, malfunction or removal of any air pollution control device required as a condition of this permit, then and in that event, this permit shall be suspended, and the permittee shall not thereafter continue to operate or use said air contamination source(s).
20. The aforementioned source(s) may be operated and used only so long as any associated air pollution control devices are operated and maintained in accordance with the specifications set forth in the respective plan approval(s), and the application(s) submitted for said plan approval(s) (as approved by the Department), and in accordance with any conditions set forth herein.

PERMIT CONDITIONS

PERMIT NO.: OP-53-0001

COMPANY: Tennessee Gas Pipeline Company

- ~~21. This operating permit also serves as a Prevention of Significant Deterioration (PSD) permit issued subsequent to the provisions of 40 CFR 52.21 with respect to the Cooper Bessemer GMVH-10C engine.~~
22. The nitrogen oxides emissions from the Cooper Bessemer GMVH-10C engine shall not exceed 13.22 pounds/hour, ~~the carbon monoxide emissions shall not exceed 7.49 pounds/hour~~ and the total hydrocarbon emissions shall not exceed 30.84 pounds/hour (except as may be allowed pursuant to condition 23 herein). Additionally, the operation of the Cooper Bessemer GMVH-10C engine shall not at any time result in the emission of any air contaminant in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection.
- The nitrogen oxides, ~~carbon monoxide~~ and total hydrocarbon emission rates specified herein are equivalent to the 3 grams/horsepower-hour, 1.7 grams/horsepower-hour, and 7.0 grams/horsepower-hour emission rates specified in the original PSD permit (#53-399-001) for this engine at a rating of 2000 horsepower.
23. The Cooper Bessemer GMVH-10C engine is not required to comply with the emission limits specified in conditions 5 and 22 herein during engine startup and shutdown provided that the duration of startup or shutdown does not exceed one hour per occurrence.
24. Only pipeline quality natural gas is to be used as fuel.
25. If ever requested by the Department to do so, the company shall implement a program to monitor, record and report pertinent operating parameters for the Cooper Bessemer GMVH-10C engine.
26. The company shall immediately notify the Department of any malfunction of the Cooper-Bessemer engine which results in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified herein or specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection.

PERMIT CONDITIONS

PERMIT NO.: OP-53-0001

COMPANY: Tennessee Gas Pipeline Company

27. This operating permit is valid for a limited period of time and may be renewed before its expiration. Requests for an operating permit renewal must be in writing and must be accompanied by the appropriate permit application processing and annual permit administration fees as specified in Section 127.703 of the Rules and Regulations of the Department of Environmental Resources. These fees shall be paid in the form of a check payable to the "Commonwealth of Pennsylvania - Clean Air Fund". The request should be made using the appropriate application form and must be received by the Department along with a completed Air Pollution Control Act Compliance Review form no later than November 1, 2000.

Additional annual operating permit administration fees may also be required pursuant to Section 127.703. If required, these fees are to be paid by no later than 11/30/96, 11/30/97, 11/30/98 and 11/30/99. The administration fee is to be submitted with an Annual Operating Permit Administration Fee Transmittal form.

28. Any notification required as a result of any condition herein should be directed to: Steven Schulte, Air Quality Specialist, 105 Sherwood Street, Mansfield, PA 16933, telephone (717) 662-4066.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

COMPLIANCE PERMIT

In accordance with Section 7.2 of the Air Pollution Control Act, the Act of January 8, 1960, P.L. 2119, as amended, 35 P.S. §4007.2, and Section 127.445 of Chapter 127 of the Rules and Regulations of the Department of Environmental Protection, the Department issues this permit for the operation of the Major NO_x Emitting Facility described below:

Permit No.:	<u>CP-53-0001</u>	Major NO _x	<u>Station 313</u>
Source:	<u>ten 1320 horsepower Ingersoll</u>	Emitting	<u></u>
	<u>Rand KVG-412 reciprocating</u>	Facility:	<u></u>
	<u>engines</u>		<u></u>
Owner:	<u>Tennessee Gas Pipeline Company</u>	Related Plan	<u>PA-53-0001</u>
	<u></u>	Approvals:	<u></u>
Address:	<u>P. O. Box 2511</u>		<u></u>
	<u>Houston, TX 77252-2511</u>	RACT	<u></u>
Attention:	<u>Mr. Nasir Ghani</u>	Proposal:	<u>Nonselective catalytic</u>
	<u>Environmental Scientist</u>		<u>reduction (NSCR)</u>
		Location:	<u>Hebron Township</u>
			<u>Potter County</u>

This permit is subject to the following conditions:

1. That the source(s) and any associated air cleaning device(s) are to be:
 - a. operated in such a manner as not to cause air pollution;
 - b. in compliance with the specifications and conditions of the applicable plan approval(s) and operating permit(s); and
 - c. operated and maintained in a manner consistent with good operating and maintenance practices.
2. This permit is valid only for the specific equipment, location and owner named above.
3. The permittee shall complete implementation of RACT on ten 1320 horsepower Ingersoll Rand KVG-412 natural gas-fired reciprocating engines according to the following schedule:

<u>TASK</u>	<u>START DATE</u>	<u>FINISH DATE</u>
Technical development (Unit 10A)	Completed	Completed
Order material (Units 1A-9A)	Completed	Completed
Construction		
Units 1A & 2A	Completed	Completed
Units 3A & 5A	September 18, 1995	November 17, 1995
Units 4A & 6A	November 18, 1995	January 17, 1996
Units 7A & 8A	January 18, 1996	March 11, 1996
Units 9A	March 12, 1996	March 18, 1996
Commissioning		
Unit 1A	March 18, 1996	March 22, 1996
Unit 2A	March 25, 1996	March 29, 1996
Unit 3A	April 1, 1996	April 5, 1996
Unit 4A	April 8, 1996	April 12, 1996
Unit 5A	April 15, 1996	April 19, 1996
Unit 6A	April 22, 1996	April 25, 1996
Unit 7A	April 29, 1996	May 3, 1996
Unit 8A	May 6, 1996	May 10, 1996
Unit 9A	May 13, 1996	May 17, 1996
Unit 10A	May 20, 1996	May 24, 1996

4. This permit is issued solely for the purpose of authorizing operation of the source(s) between May 31, 1995 and the date by which implementation of RACT shall be completed pursuant to the schedule contained in condition 3 herein.
5. This permit does not authorize the construction or modification of any source. Construction or modification of a source is subject to the plan approval requirements of 25 Pa. Chapter 127 Subchapter B. Except as provided below, this permit does not modify in any way the terms and conditions of any existing or subsequent plan approval or operating permit issued for source(s) that is (are) the subject of this permit.
6. In the event that the permittee is prevented from complying in a timely manner with any interim time limit imposed in this permit solely because of a strike, fire, flood, act of God, or other circumstances entirely beyond the permittee's control and which permittee, by the exercise of all reasonable diligence, is unable to prevent, or mitigate than the permittee may request an extension of time from the Department.

The permittee shall only be entitled to the benefits of this paragraph if it notifies the Department within five (5) days by telephone and within ten (10) days in writing of the


date it becomes aware or reasonably should have been aware of the event impeding performance. The written submission shall include all related documentation, as well as a notarized affidavit from a responsible corporate official specifying the reasons for the delay, the expected duration of the delay, and the efforts which have been made and are being made by the permittee to minimize the length of the delay. The permittee's failure to comply with the requirements of this paragraph specifically and in a timely fashion shall render this paragraph null and of no effect as to the particular incident involved.

7. If the permittee fails to achieve compliance by the final compliance date described in paragraph 3 above, this permit shall terminate.

Violation of the conditions of this permit or any other provision of Article III of the Rules and Regulations of the Department of Environmental Protection may result in suspension or revocation of this permit and/or enforcement action under the Air Pollution Control Act.

Issued: 1995 10.5

~~Expires: May 24, 1996~~



Environmental Program Manager
Air Quality Program
Northcentral Region