

**Stationary Engines and Turbines  
Air Permits by Rule (PBR) Checklist  
Title 30 Texas Administrative Code § 106.512  
Texas Commission on Environmental Quality**

Check the most appropriate answer and include any additional information in the spaces provided. If additional Space is needed, please include an extra page and reference the question number. The permit by rule (PBR) forms, tables, checklists, and guidance documents are available from the Texas Commission on Environmental Quality (TCEQ), [Air Permits by Rule](#) webpage.

This PBR (§ 106.512) requires registration with the commission's Office of Air before construction if the horsepower (hp) of the facility is greater than 240 hp. Registration of the facility can be performed by completing a [Form PI-7](#), "Registration for Permits by Rule," or [Form PI-7-CERT](#), "Registration and Certification for Permits by Rule." This checklist should accompany the registration form.

For additional assistance with your application, including resources to help calculate your emissions, please visit the [Small Business and Local Government Assistance \(SBLGA\)](#) webpage.

**Definitions:**

The following words and terms, when used in this section, shall have the following meanings, unless the context clearly indicates otherwise.

- A. **Rich-burn Engine:** A rich-burn engine is a gas-fired, spark-ignited engine that is operated with an exhaust oxygen content less than four percent by volume.
- B. **Lean-burn Engine:** A lean-burn engine is a gas-fired, spark-ignited engine that is operated with an exhaust oxygen content of four percent by volume, or greater.
- C. **Rated Engine Horsepower:** Engine rated horsepower shall be based on the engine manufacturer's maximum continuous load rating at the lesser of the engine or driven equipment's maximum published continuous speed.
- D. **Turbine Horsepower:** Turbine rated horsepower shall be based on turbine base load, fuel power heating value, and International Standards Organization Standard Day Conditions of 59 degrees Fahrenheit, 1.0 atmosphere pressure, and 60 percent relative humidity

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Air Permits by Rule (PBR) Checklist  
Title 30 Texas Administrative Code § 106.512  
Texas Commission on Environmental Quality**

<b>Questions/Description and Response</b>	
<p>Will the engine or turbine be used as a replacement at an oil and gas site and does it meet all the requirements of the policy memo entitled,  <a href="#">"Replacement of All Engine and Turbine Components for Oil and Gas Production?"</a></p> <p><input type="checkbox"/> Yes    <input type="checkbox"/> No</p>	
<p><i>If "Yes," registration is not required for like-kind replacements of engine or turbine components</i></p> <p><i>If "No," please continue</i></p>	
<b>Rule</b>	<b>Introduction</b>
<p>(1)</p> <p><input type="checkbox"/> Yes    <input type="checkbox"/> No</p>	<p>Is the engine or turbine rated less than 240 hp?</p>
<p>If "Yes," then registration is not required, but the facility must comply with conditions (5) and (6) of this rule.</p> <p>If "No," then registration is required and the facility must be registered by submitting a completed <a href="#">Form PI-7</a> and <a href="#">Table 29</a> or <a href="#">Table 31</a>, as applicable, within 10 days after construction begins.</p>	
<p>Indicate the type of equipment (pick one):</p> <p><input type="checkbox"/> Engine        <input type="checkbox"/> Turbine</p>	
<p><i>If an engine, continue to the questions regarding "Engines."</i></p> <p><i>If a turbine, skip to the questions regarding "Gas Turbines."</i></p>	

**Stationary Engines and Turbines  
Air Permits by Rule (PBR) Checklist  
Title 30 Texas Administrative Code § 106.512  
Texas Commission on Environmental Quality**

Rule	Engines
(2)	Is the engine rated at 500 hp or greater?  <input type="checkbox"/> Yes <input type="checkbox"/> No
	<p>If "No," the engine is between 240 hp and 500 hp. The engine must be registered by submitting a completed <a href="#">Form PI-7</a> and a <a href="#">Table 29</a> within 10 days after construction begins and must comply with the conditions in §§ 106.512(5) and (6). Skip to the questions regarding § 106.512(4).</p> <p>If "Yes," in addition to registration, the engine must operate in compliance with the following nitrogen (NO<sub>x</sub>) emission limit(s). Check the limit(s) applicable to this engine by answering the following:</p>
(2)(A)(i)	<p>The engine is a gas-fired, rich-burn engine and will not exceed 2.0 grams per horsepower hour (g/hp-hr) under all operating conditions.</p> <p><input type="checkbox"/> Yes    <input type="checkbox"/> No</p> <p>Indicate grams per horsepower hour NO<sub>x</sub>: _____ (g/hp-hr)</p>
(2)(A)(ii)	<p>The engine is a spark-ignited, gas-fired, lean-burn engine or any compression-ignited, dual fuel-fired engine manufactured new after June 18, 1992, and will not exceed 2.0 g/hp-hr NO<sub>x</sub> at manufacturer's rated full load and speed at all times; except, the engine will not exceed 5.0 g/hp-hr NO<sub>x</sub> under reduced speed and 80% and 100% of full torque conditions</p> <p><input type="checkbox"/> Yes    <input type="checkbox"/> No</p> <p>Indicate grams per horsepower hour NO<sub>x</sub>: _____ (g/hp-hr)</p>
(2)(A)(iii)	<p>The engine is any spark-ignited, lean-burn two-cycle or four-cycle engine or any compression-ignited, dual fuel-fired engine rated 825 hp or greater and manufactured between September 23, 1982 and June 18, 1992, and will not exceed 5.0 g/hp-hr NO<sub>x</sub> under all operating conditions.</p> <p><input type="checkbox"/> Yes    <input type="checkbox"/> No</p> <p>Indicate grams per horsepower hour NO<sub>x</sub>: _____ (g/hp-hr)</p>

**Stationary Engines and Turbines  
Air Permits by Rule (PBR) Checklist  
Title 30 Texas Administrative Code § 106.512  
Texas Commission on Environmental Quality**

Rule	Engines (continued)
(2)(A)(iv)	<p>The engine is any spark-ignited, gas-fired, lean-burn, four-cycle engine or compression-ignited, dual-fuel-fired engine that was manufactured before June 18, 1992, and is rated less than 825 hp, or was manufactured before September 23, 1982, and will not exceed 5.0 g/hp-hr NO<sub>x</sub> at manufacturer's rated full load and speed at all times; except, the engine will not exceed 8.0 g/hp-hr NO<sub>x</sub> under reduced speed and 80% and 100% of full torque conditions.</p> <p><input type="checkbox"/> Yes    <input type="checkbox"/> No</p> <p>Indicate grams per horsepower hour NO<sub>x</sub>: _____ (g/hp-hr)</p>
(2)(A)(v)	<p>The engine is any spark-ignited, gas-fired, two-cycle, lean-burn engine that was manufactured before June 18, 1992, and is rated less than 825 hp, or was manufactured before September 23, 1982, and will not exceed 8.0 g/hp-hr NO<sub>x</sub> under all operating conditions.</p> <p><input type="checkbox"/> Yes    <input type="checkbox"/> No</p> <p>Indicate grams per horsepower hour NO<sub>x</sub>: _____ (g/hp-hr)</p>
(2)(A)(vi)	<p>The engine is any compression-ignited, liquid-fired engine and will not exceed 11.0 g/hp-hr NO<sub>x</sub> under all operating conditions</p> <p><input type="checkbox"/> Yes    <input type="checkbox"/> No</p> <p>Indicate grams per horsepower hour NO<sub>x</sub>: _____ (g/hp-hr)</p>
(2)(B)	<p>Does the engine require an automatic air-fuel ratio controller to meet the NO<sub>x</sub> limit(s) above?</p> <p><input type="checkbox"/> Yes    <input type="checkbox"/> No</p>
(2)(B)	<p>For spark-ignited gas-fired or compression-ignited dual fuel-fired engines, is the engine required to have an automatic air-fuel ratio controller under condition (2)(B) of the PBR?</p> <p><input type="checkbox"/> Yes    <input type="checkbox"/> No</p>
(2)(C)	<p>Are you aware of and accept responsibility for the record and testing requirements as specified in (2)(C) of the PBR?</p> <p><input type="checkbox"/> Yes    <input type="checkbox"/> No</p>

**Stationary Engines and Turbines  
Air Permits by Rule (PBR) Checklist  
Title 30 Texas Administrative Code § 106.512  
Texas Commission on Environmental Quality**

Rule	Gas Turbines
(3)	<p>Is the turbine rated 500 hp or more?</p> <p><input type="checkbox"/> Yes    <input type="checkbox"/> No</p> <p><i>If "No," the turbine is between 240 hp and 500 hp. The engine only needs to be registered by submitting a completed <a href="#">Form PI-7</a> and a <a href="#">Table 31</a> within 10 days after construction begins.</i></p> <p><i>If "Yes," in addition to registration, the turbine must operate in compliance with the following emission limit(s) and must comply with the conditions in §§ 106.512(5)(6). Skip to questions regarding "Additional Requirements."</i></p>
(3)(A)	<p>Will the emissions of NO<sub>x</sub> exceed 3.0 g/hp-hr for gas firing?</p> <p><input type="checkbox"/> Yes    <input type="checkbox"/> No</p>
(3)(B)	<p>Will the turbine meet all applicable NO<sub>x</sub> and sulfur dioxide (or fuel sulfur) emission limitations, monitoring requirements, and reporting requirements of <a href="#">40 CFR Part 60, NSPS Subpart GG</a>?</p> <p><input type="checkbox"/> Yes    <input type="checkbox"/> No</p>
Rule	Additional Requirements
(4)	<p>Is the engine or turbine rated less than 500 hp or used for temporary replacement purposes?</p> <p><input type="checkbox"/> Yes    <input type="checkbox"/> No</p> <p><i>If "No," continue to next question.</i></p> <p><i>If "Yes," the equipment does not have to meet the emission limits of §§ 106.512(2) and (3). However, the temporary replacement equipment can only remain in service for a maximum of 90 days</i></p>
(5)	<p>What type of fuel will be used and will the fuel meet the requirements of the PBR?</p> <p>Indicate the fuel(s) used.</p> <p><input type="checkbox"/> Natural gas    <input type="checkbox"/> Liquid Petroleum gas    <input type="checkbox"/> Field gas    <input type="checkbox"/> Liquid fuel</p>
(6)	<p>Does the installation comply with the National Ambient Air Quality Standards (NAAQS)?</p> <p><input type="checkbox"/> Yes    <input type="checkbox"/> No</p> <p>Indicate which method is used and attach the modeling report and/or calculations and diagrams to support the selected method.</p> <p><input type="checkbox"/> Modeling    <input type="checkbox"/> Stack height    <input type="checkbox"/> Facility emissions and property line distance</p>
(6)	<p>Have you included a modeling report and/or calculations and diagrams to support the selected NAAQS compliance determination method?</p> <p><input type="checkbox"/> Yes    <input type="checkbox"/> No</p>

**Stationary Engines and Turbines  
Air Permits by Rule (PBR) Checklist  
Title 30 Texas Administrative Code § 106.512  
Texas Commission on Environmental Quality**

<b>Rule</b>	<b>Other Applicable Rules and Regulations</b>
For the following four questions, please refer to the <a href="#">Electric Generators under Permit by Rule</a> policy memo from October 2006.	
Is the engine or turbine used to generate electricity?  <input type="checkbox"/> Yes <input type="checkbox"/> No	
<i>If No, the following three questions do not apply.</i>	
Will the engine or turbine be used to generate electricity to operate facilities authorized by a New Source Review Permit?  <input type="checkbox"/> Yes <input type="checkbox"/> No	
<i>If "Yes," the engine or turbine does not qualify for this PBR and authorization must be obtained through a permit amendment.</i>	
Will the engine or turbine be used to generate electricity exclusively for on-site use at locations where the electric grid is not readily available or where it is not economically feasible to connect to the electric grid?  <input type="checkbox"/> Yes <input type="checkbox"/> No	
<i>If "Yes," describe why access to the electric grid is not available or is not economically feasible. If "No," continue to next question.</i>	
Will the engine or turbine be used to generate electricity for one of the following activities?  <input type="checkbox"/> Yes <input type="checkbox"/> No	
Indicate the applicable activity.  <div style="margin-left: 20px;"> <input type="checkbox"/> Engines or turbines used to provide power for the operation of facilities registered under the Air Quality Standard Permit for Concrete Batch Plants.   <input type="checkbox"/> Engines or turbines satisfying the conditions for facilities permitted by rule under <a href="#">30 TAC Chapter 106, Subchapter E</a> (relating to Aggregate and Pavement).   <input type="checkbox"/> Engines or turbines used exclusively to provide power to electric pumps used for irrigating crops. </div>	
<i>If "No," the engine or turbine does not qualify for this PBR.</i>	

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Air Permits by Rule (PBR) Checklist  
Title 30 Texas Administrative Code § 106.512  
Texas Commission on Environmental Quality**

<b>Rule</b>	<b>Other Applicable Rules and Regulations (Continued)</b>
If the engine or turbine is located in the Houston/Galveston/Brazoria nonattainment area, is the site subject to the Mass Emissions Cap and Trade Program?	<div style="margin-bottom: 10px;"><input type="checkbox"/> Yes   <input type="checkbox"/> No   <input type="checkbox"/> N/A</div> <div>Why or Why Not:  _____</div>
Is the facility subject to <a href="#">30 TAC Chapter 115</a> ?	<div style="margin-bottom: 10px;"><input type="checkbox"/> Yes   <input type="checkbox"/> No</div> <div>Why or Why Not:  _____</div>
Is the facility subject to <a href="#">30 TAC Chapter 117</a> ?	<div style="margin-bottom: 10px;"><input type="checkbox"/> Yes   <input type="checkbox"/> No</div> <div>Why or Why Not:  _____</div>
Is the facility subject to <a href="#">40 CFR Part 60, NSPS Subpart D</a> ?	<div style="margin-bottom: 10px;"><input type="checkbox"/> Yes   <input type="checkbox"/> No</div> <div>Why or Why Not:  _____</div>
Is the facility subject to <a href="#">40 CFR Part 60, NSPS Subpart Da</a> ?	<div style="margin-bottom: 10px;"><input type="checkbox"/> Yes   <input type="checkbox"/> No</div> <div>Why or Why Not:  _____</div>

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Air Permits by Rule (PBR) Checklist  
Title 30 Texas Administrative Code § 106.512  
Texas Commission on Environmental Quality**

<b>Rule</b>	<b>Other Applicable Rules and Regulations (Continued)</b>
Is the facility subject to <a href="#">40 CFR Part 60, NSPS Subpart Db?</a>  <input type="checkbox"/> Yes <input type="checkbox"/> No  Why or Why Not:  _____	
Is the facility subject to <a href="#">40 CFR Part 60, NSPS Subpart Dc?</a>  <input type="checkbox"/> Yes <input type="checkbox"/> No  Why or Why Not:  _____	
Is the facility subject to <a href="#">40 CFR Part 60, NSPS Subpart GG?</a>  <input type="checkbox"/> Yes <input type="checkbox"/> No  Why or Why Not:  _____	
Is the facility subject to <a href="#">40 CFR Part 63, MACT Subpart YYYY?</a>  <input type="checkbox"/> Yes <input type="checkbox"/> No  Why or Why Not:  _____	
Is the facility subject to <a href="#">40 CFR Part 63, MACT Subpart ZZZZ?</a>  <input type="checkbox"/> Yes <input type="checkbox"/> No  Why or Why Not:  _____	
Is the facility subject to <a href="#">40 CFR Part 63, MACT Subpart PPPPP?</a>  <input type="checkbox"/> Yes <input type="checkbox"/> No  Why or Why Not:  _____	



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Texas Commission on Environmental Quality**

**Record Keeping:** In order to demonstrate compliance with the general and specific requirements of this PBR, Sufficient records must be maintained to demonstrate that all requirements are met at all times. If the engine or turbine is rated greater than 500 horsepower, all records must be maintained as required by [30 TAC § 106.512\(2\)\(C\)](#). The registrant should also become familiar with the additional record keeping requirements in [30 TAC § 106.8](#). The records must be made available immediately upon request to the commission or any air pollution control program having jurisdiction. If you have any questions about the type of records that should be maintained or testing requirements, contact the Air Program in the [TCEQ Regional Office](#) for the region in which the site is located.

**Recommended Calculation Method:** In order to demonstrate compliance with this PBR, emission factors for each air contaminant from the [EPA Compilation of Air Pollutant Emission Factors \(AP-42\), Fifth Edition](#), Volume 1, Section 3.1: Stationary Gas Turbines for Electricity Generation should be used, including, the specific air contaminant's emissions limit listed on the table below.

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Title 30 Texas Administrative Code § 106.512  
Texas Commission on Environmental Quality**

**TCEQ Exemption 30 TAC §106.512 General Guidelines**

NO <sub>x</sub> g/hp-hr Emission Limits										
Date Original Manufacture	N/A	N/A	Before 09/23/82		09/23/82 to 06/18/92			After 06/18/92		
Mfg. Rated Horsepower	X < 240	240 < X < 500	X > 500*		500 ≤ X ≤ 824*		X > 825	X > 500*		
Operating Speed	N/A	N/A	Full	Reduced	Full	Reduced	N/A	Full	Reduced	
Operating Torque	N/A	N/A	N/A		N/A		N/A	N/A		
Ignition Type	<i>Engine Combustion Design</i>									
Spark Rich Burn ††	N/A	N/A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Spark Lean Burn**	N/A	N/A	5.0	8.0	5.0	8.0	5.0	2.0	5.0	
Spark 2-Cycle	N/A	N/A	8.0	8.0	8.0	8.0	5.0	2.0	5.0	
Compression Dual Fuel	N/A	N/A	5.0	8.0	5.0	8.0	5.0	8.0	5.0	
Compression Liquid Fuel	N/A	N/A	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Turbines†	N/A	N/A	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
PI-7 Registration	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Emission Testing	No	No	Biennial	Biennial	Biennial	Biennial	Biennial	Biennial	Biennial	

**Notes:**

\* Lower emission rates apply to lean-burn engine operating: Full Speed & Any Torque or Any Speed & <80% or >100% Torque

† Turbine emissions are also regulated by EPA NSPS Standards for NO<sub>x</sub> and SO<sub>2</sub>

\*\* Lean Burn > 4% exhaust O<sub>2</sub>

†† Rich Burn = ≤ 4% exhaust O<sub>2</sub>