

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 Instructions for  
**ADEM Form 107**  
 Permit Application for  
 Stationary Internal Combustion Engines

Item	Description
1	Self explanatory
2	In addition to selecting the purpose of the application, you must provide (1) the date the facility plans to commence construction if the application is for the installation or modification of an engine, and/or (2) the date the engine was first installed at this location if the application is for an engine that is currently installed at the facility.
3A, 3B, & 3C	Self explanatory
3D	Provide the name or number used to identify this engine in facility records and by facility employees. Examples include: Generator No. 1; Mainline Unit No. 12; Compressor Engine No. 7, etc.
3E	Self explanatory. Please note, if the serial number is not known at the time the application is submitted, you should provide the serial number to the Air Division upon completion of installation of the engine.
4A	If the proposed engine is a new (unused) engine, you must provide the date the engine was ordered from the manufacturer. This date is needed to determine applicability under certain federal regulations. If the proposed engine is used, you may leave this field blank.
4B	Self explanatory. However, if the engine has been/will be ordered from a manufacturer, you may enter "Unknown" if the Date of Manufacture is not known or the engine has not been manufactured yet. You should provide the Date of Manufacture to the Air Division upon completion of installation of the engine.
4C	Provide the date the engine was modified or reconstructed as defined in Subpart A of either 40 CFR Part 60 or 63, as applicable.
4D	You must only provide this information if the application is for the installation of a used engine. Applicability under federal NSPS and NESHAP regulations is not affected by moving an engine from one location to another. To correctly determine applicability, it is important to know when an engine was first placed into service.
5	Self explanatory. For engines generating electricity, please also provide the maximum electrical output and specify the units, either in kilowatts (kWe) or megawatts (MWe).
6	Self explanatory
7A, 7B & 7C	For a reciprocating engine, please provide the engine power rating in both brake horsepower and mechanical kilowatts (1 bhp =0.746 kWm). If the engine drives an electrical generator do <u>not</u> use the electrical kilowatt rating for the generator as the rating for the engine. For a combustion turbine, you only need to provide the heat input (MMBtu/hr) unless the emission factors used to calculate the potential emission are based on brake horsepower (bhp). If so, you must also provide the brake horsepower of the turbine.
7D, 7E, 7F & 7G	Self explanatory
7H	Please note that the cylinder displacement is needed for an <u>individual</u> cylinder for applicability purposes. You should divide the total engine displacement by the number of cylinders. If the cylinder displacement (volume) is in units of cubic inches, it can be converted by dividing the number of cubic inches for one cylinder by 61.02 (i.e. 1 liter=61.02 cubic inches).
8	This section should only be completed if applicable.
9 and 10	Self explanatory
11	Mark all federal regulations under which the engine is an AFFECTED SOURCE, regardless of whether the engine has any applicable emission standards or work/management practice requirements.
12 thru 14	Self explanatory
15	Self explanatory, except UTM Coordinates, which means Universal Transverse Mercator Coordinates, for Alabama, N-S is between 3337.000km-3875.000km and E-W is between 362.000km-709.000km; Zone 16
16	This area is for you to provide any information that you wish to provide to supplement this application. If the information is providing clarification for a specific Item in the form, please indicate which Item the information is clarifying or supplementing.

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 PERMIT APPLICATION FOR  
 STATIONARY INTERNAL COMBUSTION ENGINES

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Permit Number (ADEM Use Only)

**1. Facility or Organization Name:** \_\_\_\_\_ **Location:** \_\_\_\_\_

**2. Purpose of Application:**

Initial installation of a new engine (i.e. engine that has never been in service at any location)  
 Initial installation of a used engine (i.e. an engine that has been in service at another location)  
 Modification/Reconstruction of an engine currently installed at the facility  
 Update information for an engine currently installed at the facility  
 Title V Application  
 Other, please describe: \_\_\_\_\_

If this application is for the installation, modification, or reconstruction of an engine, please provide the date construction is scheduled to begin: \_\_\_\_\_  
  
 If this application is for an engine currently installed at this facility, please provide the date that the engine was initially installed at this facility: \_\_\_\_\_

**3. Engine Identification:**

A. Manufacturer's Name: \_\_\_\_\_ B. Model Number: \_\_\_\_\_ C. Model Year: \_\_\_\_\_  
 D. Facility's Identification Number or Description: \_\_\_\_\_ E. Serial Number: \_\_\_\_\_

**4. Engine Applicability Dates:**

A. For a new engine, Date Ordered: \_\_\_\_\_ B. Date Manufactured: \_\_\_\_\_ C. Date Modified/Reconstructed: \_\_\_\_\_  
 D. For a used engine, approximate date engine was first placed into service at any location: \_\_\_\_\_

**5. Engine Function:**  Compression  Electrical Generation (Maximum Electrical Output: \_\_\_\_\_)  Fire/Other Pump Driver

NFPA Certified  Research & Development  Test Cell/Stand  Other, please describe: \_\_\_\_\_

**6. Engine Operation:**  Emergency Only  Non-emergency, please provide typical operating schedule in Items A-D below:

Limited Use (<100 hr/yr) A. Hours Per Day: \_\_\_\_\_ B. Days Per Week: \_\_\_\_\_ C. Weeks per Year: \_\_\_\_\_  
 D. Peak Season (if any): \_\_\_\_\_

**7. Engine Specifications:**

A. Maximum Brake Horsepower (bhp): \_\_\_\_\_ B. Maximum Engine Power (kW<sub>m</sub>): \_\_\_\_\_ C. Maximum Heat Input (MMBtu/hr): \_\_\_\_\_

D. Type:  Simple Cycle Turbine  Combined Cycle Turbine  Regenerative Cycle Turbine  Reciprocating Engine

E. Piston Movement:  2-Stroke RICE  4-Stroke RICE  N/A  Other: \_\_\_\_\_

F. Air/Fuel Mix:  Rich Burn RICE  Lean Burn RICE  Diffusion Flame Turbine  Lean Premix Turbine  Other: \_\_\_\_\_

G. Ignition Type:  Spark  Compression  N/A H. Cylinder Displacement (Liters per cylinder): \_\_\_\_\_

**8. Compressor Specifications:**

A. Compressor Type: \_\_\_\_\_ B. Compressor Mfg. Date: \_\_\_\_\_ C. Location on well? Yes  No   
 D. Compressor Installation Date: \_\_\_\_\_ E. Compressor Serial Number: \_\_\_\_\_ F. Compressor Brake Horsepower (bhp): \_\_\_\_\_

<b>9. Fuel Information:</b>	Fuel Type/Description	Heat Content	Sulfur Content (indicate % by weight or ppm)	Fuel-Bound Nitrogen Content (indicate % by weight or ppm)	Percent (%) of Gross Heat Input On annual basis	Max Ash %	Used Oil Supplier
Primary Fuel							
Secondary/Backup Fuel							

**10. Point Source Emissions (You must attach calculations and, if used as the basis for emission estimates, manufacturer specification sheets):**

Pollutant	Uncontrolled <sup>1</sup> Potential Emission Rate		Controlled <sup>1,2</sup> Potential Emission Rate		Basis for Potential Emissions Calculation/Estimate (e.g. AP-42, Manufacturer Data)	Comment (Optional)
	lb/hr	ton/yr	lb/hr	ton/yr		
NOx						
CO						
VOC						
PM						
SO <sub>2</sub>						
Formaldehyde						
Total HAP						

<sup>1</sup>Potential emissions should be calculated based on 8,760 hr/yr and maximum operation unless an enforceable limit will be applicable.

<sup>2</sup>If the pollutant is uncontrolled, leave blank.

**11. Applicable Regulations (Mark all that apply):**

- |   |  |
|---|--|
| <input type="checkbox"/> 40 CFR 63, Subpart YYYY, NESHAP for Stationary Combustion Turbines | <input type="checkbox"/> 40 CFR 63, Subpart ZZZZ, NESHAP for Stationary RICE                   |
| <input type="checkbox"/> 40 CFR 60, Subpart GG, NSPS for Stationary Gas Turbines            | <input type="checkbox"/> 40 CFR 60, Subpart IIII, NSPS for Stationary Compression Ignition ICE |
| <input type="checkbox"/> 40 CFR 60, Subpart KKKK, NSPS for Stationary Combustion Turbines   | <input type="checkbox"/> 40 CFR 60, Subpart JJJJ, NSPS for Stationary Spark Ignition ICE       |
| <input type="checkbox"/> 40 CFR 60, Subpart OOOO/OOOOa                                      | <input type="checkbox"/> Other: _____  |

**12. Regulatory Standards, Limitations, and Requirements:**

**A.**

Pollutant/Parameter	Rate/Value	Units of Standard	Regulatory Basis <sup>3</sup>	Engine Potential Emission Rate (in units of standard)
<i>Example: NOx + NMHC</i>	<i>6.4</i>	<i>g/kW-hr</i>	<i>NSPS, Subpart IIII</i>	<i>4.95 g/kW-hr</i>
<i>Example: Annual Operation</i>	<i>6,000</i>	<i>hr/yr</i>	<i>SMS-PSD</i>	<i>NA</i>

<sup>3</sup>For federal regulations, specify which NSPS or NESHAP is the basis. If a synthetic minor limit is being requested or is already applicable, specify either SMS-PSD or SMS-Title V

**B.** For engines subject to emission standards under NSPS, Subpart IIII or NSPS, Subpart JJJJ, is this engine certified by the manufacturer pursuant to the applicable regulation to meet the applicable emission standards?  N/A  No  Yes (If yes, attach a copy of the certification)

**C.** For emergency or limited use engines, is this engine equipped with a non-resettable hour meter?  N/A  No  Yes

**13. Pollution Control Information:**

**A. Device/Technology Type(s):**

- No Controls
- Air-to-Fuel Ratio Controller
- Water or Steam Injection
- Low NO<sub>x</sub> Burners
- Oxidation Catalyst
- Selective Non-catalytic Reduction (SNCR)
- Non-selective Catalytic Reduction (NSCR/3-way Catalyst)
- Selective Catalytic Reduction (SCR)
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_

**B. Control Efficiencies (Typical Operation)**

Pollutant	% Reduction
NO <sub>x</sub>	
CO	
VOC	
Formaldehyde	

**C. Operational Parameters (if any):**

**14. Compliance Status:**

Is this engine in compliance with all applicable air pollution rules and regulations?     Yes     No (If "No", must attach ADEM Form 437)

**15. Stack Parameters (if a control device is installed, the information should be for the control device's stack exit):**

- A. UTM Coordinate (E-W) (km): \_\_\_\_\_    B. UTM Coordinate (N-S) (km): \_\_\_\_\_    C. Height above grade (ft): \_\_\_\_\_
- D. Latitude: \_\_\_\_\_    E. Longitude: \_\_\_\_\_    G. Exhaust Gas Volume (ACFM): \_\_\_\_\_
- H. Inside Diameter at Exit (round) (ft): \_\_\_\_\_    I. Base Elevation (ft): \_\_\_\_\_    J. Exhaust Gas Temperature (°F): \_\_\_\_\_
- K. Inside Area at Exit (not round) (sq. ft.): \_\_\_\_\_    L. GEP Stack Height (ft): \_\_\_\_\_
- M. Are sampling ports available? Yes    No

**16. Clarifying/Supplemental Information (Optional):**

Please provide the following for the person preparing this application:

Name (Print or Type): \_\_\_\_\_ Company/Affiliation: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_