

This is a new permit condition titled, "2D .1111 Subpart ZZZZ, Part 63 (Existing Non-Emergency non-black start CI greater than 300 brake HP and less than or equal to 500 brake HP)"

*Note to Permit Writer: This condition is for existing engines (commenced construction prior to June 12, 2006) at an Area Source.*

15A NCAC 2D .1111 "National Emissions Standards for Hazardous Air Pollutants", for the (selected equipment and ID No.), which is considered an existing, non-emergency, non-black start, compression ignition (CI) reciprocating internal combustion engine (RICE) greater than 300 brake horsepower and less than or equal to 500 brake horsepower, the Permittee shall comply with all applicable provisions, including the notification, testing, recordkeeping, reporting and monitoring requirements contained in Environmental Management Commission Standard 15A NCAC 2D .1111, as promulgated in 40 CFR 63, Subpart ZZZZ, "National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines", including Subpart A "General Provisions."

- a. **Compliance Date** - Pursuant to 40 CFR 63.6595(a)(1), the source(s) shall be in compliance with 40 CFR 63, Subpart ZZZZ by May 3, 2013.
- b. **Emission Limits** - Pursuant to 40 CFR 63.6603(a); the affected source shall comply with the following emission limits, except during periods of startup:
  - i. Concentration of carbon monoxide (CO) in the exhaust cannot exceed 49 ppmvd at 15 percent oxygen; or
  - ii. Reduce CO emissions by 70 percent or more; or
  - iii. If the engine is certified to the Tier 3 (Tier 2 for engines above 560 kW) emission standards in Table 1 of 40 CFR 89.112, the Permittee may comply with the requirements under NESHAP Subpart ZZZZ by meeting the requirements for Tier 3 engines (Tier 2 for engines above 560 kW) in 40 CFR part 60 Subpart IIII instead of the emission limitations and other requirements that would otherwise apply under NESHAP Subpart ZZZZ for existing non-emergency CI RICE with a site rating of more than 300 brake HP located at an area source of HAP emissions.
- c. **Testing** – To demonstrate initial compliance with the selected CO emission limit or emission reduction and pursuant to 40 CFR 63.6612(a), 63.6620, 63.6630, 63.6640, and 63.6645 the Permittee shall:
  - i. Conduct an emission test per 40 CFR 63.6620 and Table 4 of 40 CFR 63 Subpart ZZZZ within 180 days after the compliance date. Per 40 CFR 63.6620(f), if complying with the emission limitation to reduce CO in the exhaust without using an oxidation catalyst, the Permittee shall petition the Division of Air Quality (DAQ) Regional Supervisor for operating limitations to be established during the initial performance test and continuously monitored thereafter, or for approval of no operating limitation. The Permittee shall not conduct the initial performance test until after the petition has been approved by the Regional Supervisor. The petition must include the information described in 40 CFR 63.6620(g) or (h).

- ii. Per 40 CFR 63.6620(i), the engine percent load during a performance test must be determined by documenting the calculations, assumptions, and measurement devices used to measure or estimate the percent load in a specific application. A written report of the average percent load determination must be included in the notification of compliance status. The following information must be included in the written report: the engine model number, the engine manufacturer, the year of purchase, the manufacturer's site-rated brake horsepower, the ambient temperature, pressure, and humidity during the performance test, and all assumptions that were made to estimate or calculate percent load during the performance test must be clearly explained. If measurement devices such as flow meters, kilowatt meters, beta analyzers, stain gauges, etc. are used, the model number of the measurement device, and an estimate of its accuracy in percentage of true value must be provided.
- iii. The Permittee shall perform such testing in accordance with 40 CFR 63.6645 and 15A NCAC 2D .2600 (see GENERAL EMISSIONS TESTING AND REPORTING REQUIREMENTS in Section B. of this Air Permit). The procedures are outlined below:
  - A. The Permittee shall notify DAQ in writing of their intent to conduct the performance test and submit a completed Protocol Submittal Form to the DAQ Regional Supervisor at least 60 days before the scheduled performance test in accordance with 40 CFR 63.6645(g) and 40 CFR 63.7(b)(1). A copy of the Protocol Submittal Form may be obtained from the Regional Supervisor.
  - B. The Permittee shall notify the Regional Supervisor of the specific test dates at least 15 days prior to testing in order to afford the DAQ the opportunity to have an observer on-site during the sampling program. If a specific test date cannot be identified due to the operational requirements of the RICE, then the Permittee shall notify the Regional Supervisor of the approximate test date. If a specific test date is identified within the 15 day notification timeframe identified above, then the Permittee shall notify the Regional Supervisor as soon as the test date is determined.
  - C. The Permittee shall submit **two** copies of the test report to the DAQ. The test report shall be submitted to the Regional Supervisor – DAQ not later than 60 days after completion of testing. The Permittee may request an extension to submit the final test report. The Regional Supervisor – DAQ will approve an extension request if it is determined that the request is a result of actions beyond the control of the Permittee. The test report shall contain at a minimum the following information:
    - I. a description of the training and air testing experience of the person directing the test;
    - II. a certification of the test results by the sampling team leader and facility representative;
    - III. a summary of emissions results and text detailing the objectives of the testing program, the applicable state and federal regulations, and conclusions about the testing and compliance status of the emission source(s);

- IV. a detailed description of the tested emission source(s), process flow diagrams, engineering drawings, and sampling location schematics should be included as necessary;
  - V. all field, analytical, and calibration data necessary to verify that the testing was performed as specified in the applicable test methods;
  - VI. example calculations for at least one test run using equations in the applicable test methods and all test results including intermediate parameter calculations; and
  - VII. documentation of facility operating conditions during all testing periods and an explanation relating these operating conditions to maximum normal operation. If necessary, provide historical process data to verify maximum normal operation.
- D. The testing requirement(s) shall be considered satisfied only upon written approval of the test results by the DAQ.
- E. The DAQ will review emission test results with respect exclusively to the specified testing objectives as proposed by the Permittee and approved by the DAQ.
- iv. Pursuant to 40 CFR 63.6630(a), Initial compliance for each existing, non-emergency, non-black start CI RICE greater than 300 brake horsepower and less than or equal to 500 brake horsepower shall be demonstrated as follows:

<b>For each CI RICE complying with the requirement to . . .</b>	<b>The Permittee has demonstrated initial compliance if . . .</b>
Reduce CO emissions	i. The average reduction of emissions of CO determined from the initial performance test is equal to or greater than the required CO percent reduction
Limit the concentration of CO in the RICE exhaust	i. The average CO concentration corrected to 15 percent O <sub>2</sub> , dry basis, from the three test runs is less than or equal to the CO emission limitation

**d. Operating Requirements** - Pursuant to 40 CFR 63.6603(a), 63.6604, and 63.6625(b), (g), and (h), the Permittee shall:

- i. Minimize the engine’s time spent at idle during startup and minimize the engine’s startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.

- ii. If the engine is not equipped with a closed crankcase ventilation system the Permittee shall:
  - A. Install a closed crankcase ventilation system that prevents crankcase emissions from being emitted; or
  - B. Install an open crankcase filtration emission control system that reduces emissions from the crankcase by filtering the exhaust stream to remove oil mist, particulates, and metals.
- iii. Follow the manufacturer’s maintenance requirements for operating and maintaining the open or closed crankcase ventilations system and replacing crankcase filters or can request the DAQ Regional Supervisor to approve different maintenance requirements that are as protective as the manufacturer requirements.
- iv. If the cylinder displacement is less than 30 liters per cylinder, then the Permittee shall use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel.

Sulfur content	15 ppm maximum.
Cetane index	A minimum cetane index of 40;
OR	OR
Aromatic content	A maximum aromatic content of 35 volume percent.

- e. **Recordkeeping** – Pursuant to 40 CFR 63.6655, the Permittee shall keep the following records (in written or electronic format). The records must be maintained for five (5) years.
  - i. A copy of each notification and report submitted to comply with 40 CFR 63 Subpart ZZZZ.
  - ii. Occurrence and duration of each malfunction of operation (*i.e.*, process equipment) or the air pollution control and monitoring equipment.
  - iii. Performance tests and performance evaluations as required in 40 CFR 63.10(b)(2)(viii).
  - iv. All required maintenance performed on the air pollution control and monitoring equipment.
  - v. Actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.
- f. **Reporting** –
  - i. Pursuant to 40 CFR 63.6645(h), for each initial performance test, the Permittee is required to submit a Notification of Compliance Status before the close of business on the 60<sup>th</sup> day following the initial performance test according to 40 CFR 63.9(h)(2)(ii).

- ii. Pursuant to 40 CFR 63.6650, the Permittee shall submit a semi-annual report by January 31 of each calendar year for the preceding six-month period between July and December and by July 31 of each calendar year for the preceding six-month period between January and June. If the RICE is classified as “limited use” (operation limited to less than 100 hours per year) and there is no deviation or malfunction, then the report shall be submitted annually by January 31 of each calendar year. The report shall contain the following:
- A. Company name and address.
  - B. Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.
  - C. Date of report and beginning and ending dates of the reporting period.
  - D. If a malfunction occurred during the reporting period, the compliance report must include the number, duration, and a brief description for each time of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken during a malfunction of an affected source to minimize emissions in accordance with 63.6650(b), including actions taken to correct a malfunction.
  - E. If there is no deviation(s), then provide a statement indicating that no deviation(s) occurred during the reporting period.
  - F. If there is a deviation(s) during the reporting period, then provide information in 40 CFR 63.6650(d) as follows:
    - I. total operating time of the RICE at which the deviation occurred during the reporting period.
    - II. the number, duration, and cause of deviation (including unknown cause, if applicable), as applicable, and the corrective action taken.