

**INSTRUCTIONS:**

**Section 6.2.1: Internal Combustion Unit (ICU)**

**IMPORTANT:** Do NOT use pencil to fill out the application. Please type responses or print using black ink. If you have any questions, feel free to contact the Nebraska Department of Water, Energy, and Environment (DWEE) via [DWEE.AirQuality@nebraska.gov](mailto:DWEE.AirQuality@nebraska.gov) or the Air Quality Permitting Section at (402) 471-2186.

Complete the information on the top of each page. Enter the name of the facility, as it is known in Nebraska. The facility name on every page of the operating permit application should be identical. Enter the date the form was completed. Enter the DWEE Facility Identification number (FID) assigned by the Nebraska Department of Water, Energy, and Environment. If this is a new facility, leave this box blank. If this is an existing facility, contact the Department if this number is unknown. Enter the Emission Point Identification Number. Each place where emissions are emitted into atmosphere from your facility should be labeled with an individual identification number.

Form 6.0, Section 6.2 should be used for internal combustion units (i.e., engines, generators, etc.). This form assumes one internal combustion unit is contributing to the emissions that are being released from the emission point identification number. If multiple internal combustion emission units are being routed through a single emission point, multiple Section 6.2 forms must be completed for each internal combustion unit. Each Section 6.2 form should have identical emission point identification numbers if multiple units are routed to the same emission point. This section can be used whether or not there is control equipment associated with the internal combustion unit. If both combustion units and non-combustion units are being routed through a single emission point, Section 6.5 or Section 6.6 may be used in lieu of or in combination with Section 6.2 to provide the necessary information concerning the emission point.

**General Information**

Attach the manufacturer specifications for the emission unit (incinerator and afterburner) as part of the application (**Step 15 Manufacturer Specifications**).

- 1) Enter the unit ID that has been assigned to this internal combustion unit. A unique emission unit identification number should identify each emission unit located at the facility.
- 2) Enter the date the internal combustion unit was installed and operational at the facility. You need to include a month, day, and year. If this is new equipment that has yet to be installed, check the "NEW" box.
- 3) Enter the model year of the ICU.
- 4) Enter the month and year the ICU was manufactured. If unknown, contact the DWEE for additional information.
- 5) Select the type of internal combustion unit being described on this form. Make the selection by choosing the correct unit type. If the unit type is not provided, select "other" and enter the type of unit in the space provided.
- 6) Enter the maximum rated capacity of the unit. Indicate whether the value given is in units of million British thermal units per hour (MMBtu/hr), Horsepower (HP), or Kilowatt (kW).
- 7) Enter the maximum displacement of the engines in liters per cylinder and the number of cylinders.
- 8) Briefly describe what the intended use of the ICU will be
- 9) Identify engine classification.

**INSTRUCTIONS (continued):**

**Section 6.2.1: Internal Combustion Unit**

**10) Stack Information**

- a) If this unit does not have a “stack” through which the unit’s emissions exhaust, select the N/A box.
- b) Enter the height of the stack aboveground in feet.
- c) Enter the inside diameter (in feet) of the top of the stack where the emissions are discharged.
- d) Select whether the stack discharges horizontally or vertically by selecting the appropriate box.
- e) Enter the velocity in meters per second of the gas as it discharges from the top of the stack.
- f) Enter the exit temperature (in degrees Kelvin) of the gas exiting the top of the stack.

**11) Fuel Information**

- a) Enter the type/grade(s) of fuel that will be combusted in this internal combustion unit (examples: No. 2 fuel oil, natural gas).
- b) Enter the maximum fuel capacity of this unit. If this unit was operating continuously (8,760 hours per year), how much fuel would it consume? If enough fuel will not be produced or collected (example: biogas from an anaerobic treatment system) for the unit to be capable of operating year-round, enter the total amount of fuel that will be produced/collected. Be sure to indicate that this amount is all that will be produced/collected and is not the maximum fuel capacity by attaching additional information to the form. Be sure to include the appropriate units.
- c) Enter the heat content of the fuel being combusted. Be sure to include the appropriate units.
- d) For fuel specifications, enter the percent sulfur by weight that is contained in the fuel. Enter “N/A” if the fuel type contains negligible amounts of sulfur. If combusting coal or used oil, enter the maximum ash content as a weight percent.
- e) Enter any requested operating limits or existing limits (for operating permits) that need to be maintained. Typically for internal combustion units, this limit may be an hourly restriction on how long the unit can combust a certain fuel type (hours/year) or a specific fuel amount that the unit can combust each year. Be sure to include the appropriate units. Attach additional information to indicate whether this is an existing limit or a new request for a limit.
- f) If the internal combustion unit will combust more than three different types of fuel, attach additional information in order to account for all of the fuel types that are combusted.

**12) New Source Performance Standard (NSPS) Applicability**

If this internal combustion unit is subject to an NSPS subpart, select the subpart this unit is subject to. If you do not know whether or not the unit is subject to a specific NSPS, contact the Department for assistance.

**INSTRUCTIONS (continued):**

**Section 6.2.1: Internal Combustion Unit**

**13) Air Pollution Control Equipment**

- a) Answer whether or not there is an air pollution control device(s) associated with the internal combustion unit or the emission point. Check the “YES” or “NO” box as appropriate. If there is a control device associated with the emission point, continue filling out the information specific to the control device. If there is a control device associated with the emission point, continue filling out the information specific to the control device. Attach the manufacturer specifications for the control device as part of the application (**Step 15 – Manufacturer Specifications**).
- b) Enter the control equipment identification number. Each piece of control equipment that is used to control the pollutants being emitted from the unit should be identified with an individual identification number.
- c) Enter the type of control equipment that is associated with the internal combustion unit. Common types of control equipment include catalytic oxidizers, scrubbers, baghouses, etc.
- d) Enter the types of pollutants the control equipment controls (i.e., reduces). If numerous pollutants are controlled, indicate the different pollutants controlled in line with their respective control efficiencies.
- e) Enter the control efficiency of the control equipment for each pollutant being controlled. This is the percentage of the pollutant that is controlled by the control equipment.
- f) Enter the date the control equipment for the internal combustion unit was installed at the facility. You need to include a month, day, and year. If this is new control equipment that has yet to be installed, check the “NEW” box.

**14) Potential to Emit (PTE) Calculations**

**PTE calculations are required to be submitted with this application.** If there are questions on calculating the potential emissions associated with the internal combustion unit, contact the Department. The Department may be able to send you electronic spreadsheets for ease in calculating the potential emissions. Calculation spreadsheets are also available on the Department’s website. Be sure the potential emission calculations are attached and select the box to indicate it has been done.

**15) Manufacturer Specifications**

Attach the manufacturer specifications for the emission unit listed under **General Information** and for any control equipment listed under **13) Air Pollution Control Equipment**. Select the box to indicate it has been done.

**16) Additional Information**

Please include any additional information associated with the internal combustion unit you feel should be submitted with this application. Only select the “YES” box if information is being included that is not required elsewhere in the application.

**INSTRUCTIONS (continued):**

**Section 6.2.1: Internal Combustion Unit**

**Operating Information**

- 17) Indicate the actual amount of each fuel type combusted in the internal combustion unit in the past year as well as the most you have produced or received in the past five years.
- 18) Enter the actual amount of fuel combusted in this external combustion unit in the most recent year and the highest annual amount of fuel combusted in the past five years.

**19) Actual Emission Calculations**

**Actual emission calculations are required to be submitted with this application if you are applying for an operating permit (initial or renewal).** If there are questions on calculating the actual emissions associated with the internal combustion unit, contact the Department. The Department may be able to send you electronic spreadsheets for ease in calculating the actual emissions. Calculation spreadsheets are also available on the Department's website. Be sure that the actual emission calculations are attached and select the box to indicate it has been done.

**20) Additional Information**

Please include any additional information associated with the internal combustion unit you feel should be submitted with this application. Only select the "YES" box if information is being included that is not required elsewhere in the application.