



**FORM CE6: CONTROL EQUIPMENT INFORMATION FOR CATALYTIC AND NON-CATALYTIC REDUCTION** (Please see instructions on reverse side.)



Company Name: \_\_\_\_\_

**CONTROL EQUIPMENT DESCRIPTION**

- 1. Control Equipment (CE) ID: \_\_\_\_\_
- 2. Emission Point (EP) ID: \_\_\_\_\_
- 3. Manufacturer: \_\_\_\_\_
- 4. Model: \_\_\_\_\_
- 5. Date of On-Site Installation: \_\_\_\_\_ 6. Date of Modification: \_\_\_\_\_
- 7. Type of Control Equipment (check applicable type):  Catalytic Reduction  Non-Catalytic Reduction
- 8. Control Equipment Description: \_\_\_\_\_

**CONTROL EQUIPMENT PERFORMANCE MONITORING**

9. Describe how your facility will monitor the performance of this control equipment (check all that apply):
- Catalyst Material Coupon or Sample Testing  Catalyst Life Time
  - Operating Temperature Range  Pressure Drop
  - Ammonia (or Urea) Injection Rate  Outlet Ammonia Concentration
  - Predictive Emissions Monitoring System (PEMS) (attach documentation)
  - Continuous Emissions Monitoring System (CEMS) (attach documentation)
  - Other \_\_\_\_\_

10. Describe the range and monitoring frequency of your control device monitoring choice(s):

**DETAILED CONTROL EQUIPMENT SPECIFICATIONS**

- 11. Manufacturer's Data and Engineering Specifications Enclosed:  Yes  No NOTE: If yes, skip #11-#20
- 12. Catalyst Material (if applicable): \_\_\_\_\_
- 13. Catalyst Life Time (if applicable): \_\_\_\_\_
- 14. Number of Catalyst Beds (if applicable): \_\_\_\_\_
- 15. Total Catalyst Bed Volume (if applicable): \_\_\_\_\_
- 16. Residence Time (seconds): \_\_\_\_\_
- 17. Operating Temperature Range (°F): \_\_\_\_\_
- 18. Pressure Drop Range (inches of H<sub>2</sub>O, if applicable): \_\_\_\_\_
- 19. Additive Injection Rate: \_\_\_\_\_  Anhydrous Ammonia  Liquid Ammonia  Urea
- 20. Maximum Ammonia Slip (ppm): \_\_\_\_\_
- 21. NO<sub>x</sub> Control Efficiency (% Reduction): \_\_\_\_\_

## Instructions for FORM CE6: CONTROL EQUIPMENT INFORMATION FOR NO<sub>x</sub> REDUCTION

- If you have multiple pieces of control equipment that vent from one emission point, attach the appropriate form for each piece of control equipment or control measure.
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### Understanding CE6 Form Information: Each number provides an explanation for the corresponding field on the form.

**Company Name:** This is useful if application pages become separated.

#### Control Equipment Description

1. **Control Equipment (CE) ID:** Called the control equipment (CE) identification (ID). It can be any combination of letters or numbers up to 16 characters in length. The ID should match the ID for this control equipment used on previous construction permit applications and within this application. If also submitting an operating permit application, the ID used in this application should be consistent with those used in the operating permit application.
2. **Emission Point (EP) ID:** Called the emission point (EP) identification (ID). It can be any combination of letters or numbers up to 16 characters in length. The ID should match the ID for this equipment used on other construction permit applications and within this application. If also submitting an operating permit application, the ID used in this application should be consistent with those used in the operating permit application.
3. **Manufacturer:** Provide the manufacturer of the control equipment (if known).
4. **Model:** Provide the model number of the control equipment (if known). If custom, provide engineering specifications as indicated in #11-#20.
5. **Date of On-Site Installation:** Provide the date when on-site installation of the control equipment began or will begin, including the month and year.
  - For the purpose of this form, **On-site Installation** means the on-site fabrication, erection, or installation of any equipment or control equipment that would result in a change in emissions.
6. **Date of Modification:** Provide the month and year of the last modification. In the case of a proposed modification, provide the best estimate of the modification date.
  - For the purpose of this form, **Modification** means any physical change, or change in method of operation of any existing equipment or control equipment.
7. **Type of Control Equipment:** Select the type of control equipment for NO<sub>x</sub> reduction; catalytic or non-catalytic equipment.
8. **Control Equipment Description:** Describe the type of control equipment for NO<sub>x</sub> reduction. This name will be used to describe the control equipment in the construction permit.

#### Performance Monitoring

9. **Monitoring Control Equipment:** Describe how your facility will monitor the performance of this control equipment. Additional monitoring may be required by the DNR to ensure compliance with requested permit limits. Examples of control equipment monitoring include measuring the minimum operation temperature; measuring the life of the catalyst; etc.
10. **Range and Monitoring Frequency:** Describe the range (e.g., temperature, etc.) and the frequency of each monitoring choice listed in #8. The range should provide for the normal operating range of the equipment and can be obtained from the manufacturer and vendor. The range could also be determined from stack testing. The applicant should provide an estimate of the frequency of parameter monitoring they feel is reasonable. Frequency can be as often as continuously or can be as little as annually depending on the type of equipment, the monitoring parameter chosen, and the importance of the control equipment to meet the emissions limits requested in the permit.

**Detailed Control Equipment Specifications**

11. **Manufacturer's Data and Engineering Specifications:** Indicate whether supporting documentation, such as manufacturer's data or engineering specifications, is attached. The manufacturer's data should provide a general description of the control equipment and specific design specifications that would answer the remaining questions in this section of the form. If yes, attach as a separate sheet labeled "Form CE6-10A". If supporting documentation is not attached, the department may request specific design and operational specifications for the equipment.
12. **Catalyst Material:** If the control equipment has a catalyst, provide the type of material.
13. **Catalyst Life Time:** If the control equipment has a catalyst, provide the catalyst life time (i.e. how long the catalyst needs to be replaced or regenerated).
14. **Number of Catalyst Beds:** If the control equipment has a catalyst, provide the number of beds.
15. **Total Catalyst Bed Volume:** If the control equipment has a catalyst, provide the total volume of the catalyst beds.
16. **Residence Time:** Provide the residence time of the control equipment. This is not a value easily calculated by the applicant and should be provided by the vendor.
17. **Operating Temperature Range:** Provide the temperature range in which the control equipment will operate.
18. **Pressure Drop Range:** If the control equipment has a catalyst bed, provide the operating pressure drop range across the catalyst bed(s).
19. **Additive Injection Rate:** Provide the amount of additive that will be injected into the control system. In addition check the appropriate box for the type of additive to be used.
20. **Maximum Ammonia Slip:** Ammonia slip refers to the amount of unreacted ammonia. Provide the maximum amount of ammonia to be emitted from the emission point.
21. **NO<sub>x</sub> Control Efficiency:** Indicate the overall efficiency of the control device, as designed.