Facility Name: Nuclear Plating, Inc.
Facility Number: 13-18-00-8156
PTI Number: 13-3419
Source Numbers: P001-P003

TERMS AND CONDITIONS

Applicable emissions limitations ans/or control requirements

The permittee shall not allow the concentration of total chromium in the exhaust gases discharged to the atmosphere to exceed 0.015 mg/dscm (6.6 E -06 hr/dscf).

General work practice standards

1. At all times, including periods of startup, shutdown, and malfunction, the permittee shall operate and maintain any chromium electroplating or anodizing tank, including associated air pollution control devices and monitoring equipment, in a manner consistent with the operation and maintenance plan required by these terms and conditions.

2. Malfunctions shall be corrected as soon as practicable after their occurrence in accordance with the operation and maintenance plan.

3. Determination of whether acceptable operation and maintenance procedures are being used will be based on information available to the appropriate Ohio EPA District Office or local air agency, which may include, but is not limited to, monitoring results; review of the operation and maintenance plan, procedures, and records; and inspection of the emissions unit. Based on this information, the appropriate Ohio EPA District Office or local air agency may require that the permittee make changes to the operation and maintenance plan if that plan:

    a. Does not address a malfunction that has occurred;

    b. Fails to provide for the operation of the emissions units, the air pollution control techniques, or the control system and process monitoring equipment during a malfunction in a manner consistent with good air pollution practices; or

    c. Does not provide adequate procedures for correcting malfunctioning process equipment, air pollution control techniques, or monitoring equipment as quickly as practicable.

4. The permittee shall prepare an operation and maintenance plan to be implemented no later than January 25, 1997. The plan shall be incorporated by reference into the Title V permit and include the following elements:

a. The plan shall specify the operation and maintenance criteria for the affected source, the add-on air pollution control device (if such a device is used to comply with the emissions limits), and the process and control system monitoring equipment, and shall include a standardized checklist to document the operation and maintenance of the equipment.

b. PBS/CMP system

The O/M plan shall incorporate the following work practice standards:

I. Visually inspect the device at least once per quarter to ensure there is proper drainage, no chronic acid buildup on the pads, and no evidence of chemical attack on the structural integrity of the device.
ii. Visually inspect at least once per quarter the back portion of the mesh pad closest to the fan to ensure there is no breakthrough of chromic acid mist.
iii. Visually inspect at least once per quarter the ductwork from tank to the control device to ensure there are no leaks.
iv. Perform wash down of the composite mesh-pad in accordance with manufacturer's recommendations.

Pitot Tube

If a pitot tube is used for monitoring, the O/M plan shall incorporate the following work practice standards to be performed at least once per quarter:

I. Backflush with water, or remove from the duct and rinse with fresh water.

ii. Replace in the duct and rotate 180 degrees to ensure that the same zero reading is obtained.

iii. Check pitot tube ends for damage. Replace pitot tube if cracked or fatigued.

4. The plan shall specify procedures to be followed to ensure that equipment or process malfunctions due to poor maintenance or other preventable conditions do not occur.

5. The plan shall include a systematic procedure for identifying malfunctions of process equipment, add-on air pollution control devices, and process and control system monitoring equipment, and for implementing corrective actions to address such malfunctions.

6. If the operation and maintenance plan fails to address or inadequately

addresses an event that meets the characteristics of a malfunction at the time the plan is initially developed, the permittee shall revise the operation and maintenance plan within 45 days after such an event occurs.

7. If actions taken by the permittee during periods of malfunction are inconsistent with the procedures specified in the operation and maintenance plan, the permittee shall record the actions taken for that event and shall report such actions within 2 working days after commencing actions inconsistent with the plan. This report shall be followed by a letter within 7 working days after the end of the event, unless the permittee makes alternative reporting arrangements, in advance, with the appropriate Ohio EPA District Office or local air agency.

8. The permittee shall keep the written operation and maintenance plan on record after it is developed to be made available for inspection, upon request, by the appropriate Ohio EPA District Office or local air agency for the life of the emissions unit. If the operation and maintenance plan is revised, the permittee shall keep previous versions of the plan on record to be made available for inspection, upon request, by the appropriate Ohio EPA District Office or local air agency for a period of five years after each revision to the plan.

9. The permittee may use applicable standard operating procedure (SOP) manuals, Occupational Safety and Health Administration (OSHA) plans, or other existing plans to meet the operating and maintenance plan requirements as long as the alternative plans meet the requirements.

Monitoring Requirements

1. During the initial performance test, the permittee shall determine the outlet chromium concentrations using the methods as described in the " Testing Requirements" section of this permit to comply with the emission limitation Through the use of a packed-bed scrubber and composite mesh-pad system. The permittee shall establish as a site-specific operating parameter the pressure drop across the system, setting the value that corresponds to compliance with the applicable emission limitation, using the procedures in the "Testing Requirements" section of this permit.

2. The permittee may conduct multiple performance tests to establish a range of compliant pressure drop values, or may set as the compliance value the average pressure drop measured over the three test runs of one performance test and accept +/-1 inch of water column from this value as the compliant range.

3. On and after the date on which the initial performance test is required to be completer under paragraph 63.7 of 40 CFR Part 63, Subpart A, the permittee shall monitor and record the pressure drop across the composite mesh-pad system once each day that the emissions unit is operating. To be in compliance,

the composite mesh-pad system shall be operated within +/- 1 inch of water column of the pressure drop value established during the initial performance test, or shall be operated within the range of compliant values for pressure drop established during multiple performance tests.

Record keeping requirements

1. The permittee shall fulfill all record keeping requirements in the General Provisions to 40 CFR Part 63, according to the applicability of subpart A.

2. The permittee also shall maintain the following records:
   a. Inspection records for the add-on pollution control device, if such a device is used, and monitoring equipment, to document that the inspection and maintenance required by the work practice standards of this permit have taken place. The record can take the form of a checklist and should identify the device inspected, the date of inspection, a brief description of the working condition of the device during the inspection, and any actions taken to correct deficiencies found during the inspection.

   b. Records of all maintenance performed on the emissions unit, add-on air pollution control device, and monitoring equipment.

   c. Records of the occurrence, duration, and cause (if known) of each malfunction of process, add-on air pollution control device, and monitoring equipment.

   d. Records of actions taken during periods of malfunction when such actions are inconsistent with the operation and maintenance plan.

   e. Other records, which may take the form of checklists, necessary to demonstrate consistence with the provisions of the operation and maintenance plan.

   f. Test reports documenting results of all performance tests.

   g. All measurements as may be necessary to determine the conditions of performance tests.

   h. Records of monitoring data that are used to demonstrate compliance with the standard including the date and time the data are collected.

   I. The specific identification (i.e., the date and time of commencement and completion) of each period of excess emissions, as indicated by monitoring data, that occurs during malfunction of the process, add-on air pollution control device, or monitoring equipment.

j. The specific identification (i.e., the date and time of commencement and completion) of each period of excess emissions, as indicated by monitoring data, that occurs during periods other than malfunction of the process, add-on air pollution control device, or monitoring equipment.

k. The total process operating time of the emission unit during the reporting period.

l. All documentation supporting the notification and reports as outlined in the Reporting Requirements of this permit and paragraphs 63.9 and 63.10 of 40 CFR Part 63, subpart A.

3. All records shall be maintained for a period of five years.

4. The permittee shall fulfill all reporting requirements as outline in 40 CFR part 63, subpart A. These reports shall be made to the appropriate Ohio EPA District Office or local air agency and shall be sent by U.S. mail, fax or by another courier.

   a. Submittals sent by U.S. mail shall be postmarked on or before the specified date.

   b. Submittals sent by other methods shall be received by the appropriate Ohio EPA District Office or local air agency on or before the specified date.

5. The permittee shall submit to the appropriate Ohio EPA District Office or local air agency an initial notification report no later than July 24, 1995 that contains the following information:

   a. The name, title, and address of the owner or operator;

   b. The address (i.e., physical location) of the emissions unit;

   c. Identification of the applicable emission limitations and compliance date.

   d. A statement of whether the affected emissions unit is located at a major source or at an area source.

   e. A brief description of each affected emissions unit, including the type of process operation performed.

   f. The maximum potential cumulative potential rectifier capacity.

g. A statement of whether the emissions unit is located at a small or a large, hard chromium facility and whether this will be demonstrated through actual or maximum potential cumulative rectifier capacity.

h. A statement of whether the permittee will limit the maximum potential cumulative rectifier capacity such theat the hard chromium electroplating facility is considered small.

6. The permittee shall submit a Notification of Compliance Status to the appropriate Ohio EPA District Office or local air agency no later than February 24, 1996, signed by the responsible official who shall certify its accuracy, attesting to whether the affected emissions unit is in compliance. The notification shall list for each affected emissions unit:

a. The applicable emission limitations and the methods there were used to determine compliance with this limitation.

b. If a performance test is required, the test report documenting the results of the performance test, which includes the elements required in the Test Requirements section of this permit, including measurements and calculations to support special compliance provisions for multiple emissions units controlled by a common add-on air pollution control device.

c. The type and quantity of hazardous air pollutants emitted by the emissions unit reported in mg/dscm or mg/hr if the emissions unit is using the special provisions for multiple emissions units controlled by a common add-on air pollution control device. (For emissions units not required to conduct a performance test, the surface tension measurement may fulfill this requirement.)

d. For each monitored parameter for which a compliant value was established, the specific operating parameter value, or range of values, that corresponds to compliance with applicable emission limit.

e. The methods that will be used to determine continuous compliance.

f. A description of the air pollution control technique used for each emission point.

g. A statement that the permittee has completed and has on file the operation and maintenance plan as required by the work practice standards.

h. A statement by the owner or operator as to whether the emissions unit is

in compliance.

7. The permittee shall report to the appropriate Ohio EPA District Office or local air agency the results of any performance test conducted. The report shall be submitted no later 90 days following the completion of the performance test, and shall be submitted as part of the notification of compliance status report required by this section.

8, The permittee shall prepare an ongoing compliance status report annually (unless a request to reduce frequency of ongoing compliance status reports has been approved) to the appropriate Ohio EPA District Office or local air agency to document the ongoing compliance status of the emissions unit. This report shall include the following:

   a. The company name and address of the emission unit.

   b. An identification of the operating parameter that is monitored for compliance determination.

   c. The relevant emission limitation for the emissions unit, and the operating parameter value, or range of values, that correspond to compliance with this emission limitation as specified in the Notification of Compliance Status required by this section.

   d. The beginning and ending dates of the reporting period.

   e. The total operating time of the emissions unit during the reporting period.

   f. A summary of operating parameter values, including the total duration of excess emissions during the reporting period as indicated by those values, the total duration of excess emissions expressed as a percent of the total emissions unit operating time during the reporting period, and a breakdown of the total duration of excess emissions during the reporting period into those that are due to process upsets, control equipment malfunctions, other known causes, and unknown causes.

   g. A certification by a responsible official that the work practice standards in this permit were followed in accordance with the operation and maintenance plan for the emissions unit.

   h. If the operation and maintenance plan required by this permit was not followed, an explanation of the reasons for not following the provisions, an assessment of whether any excess emission and/or parameter monitoring exceedances are believed to have occurred, and a copy of the reports required by the work practices in this permit.

l. A description of any changes in monitoring, processes, or controls since last reporting period.

j. The name, title, and signature of the responsible official who is certifying the accuracy of the report.

k. The date of the report.

9. The permittee shall submit semiannual reports if the following conditions are met:

a. The total duration of excess emissions is one percent or greater of the total operating time for the reporting period; and

b. The total duration of malfunctions of the add-on air pollution control device and monitoring equipment is 5 percent or greater of the total operating time.

10. Once the permittee reports an exceedance, ongoing compliance status reports shall be submitted semiannually until a request to reduce reporting frequency is approved.

11. The appropriate Ohio EPA District Office or local air agency may determine on a case- by-case basis that the summary report shall be completer more frequently and submitted, or that the annual report shall be submitted instead of being retained on site, if these measures are necessary to accurately assess the compliance status of the emissions unit.

12. The permittee who is required to submit ongoing compliance status reports on a semiannual (or more frequent) basis, or is required to submit its annual report instead of retaining it on site, may reduce the frequency of reporting to annual and/or be allowed to maintain the annual report on site if all of the following conditions are met:

a. For 1 full year (e.g., 2 semiannual or 4 quarterly reporting periods), the ongoing compliance status reports demonstrate that the affected emissions unit is in compliance with the relevant emission limit.

b. The permittee continues to comply with all applicable record keeping and monitoring requirements of 40 CFR Part 63, subpart A and this permit.

c. The appropriate Ohio EPA District Office or local air agency does not object to a reduced reporting frequency. The frequency of submitting ongoing compliance status reports may be reduced if the following

requirements are met:

I. The permittee notifies the appropriate Ohio EPA District Office or local air agency in writing of its intentions to make such a change. The Cleveland Bureau of Air Pollution Control may review information concerning the facility's previous performance history during the 5-year record keeping period prior to the intended change, or the record keeping period since the emission unit's compliance date, whichever is shorter. Records subject to review include performance test results, monitoring data, and evaluations of the permittee's conformance with emission limitations and work practice standards. If the permittee's request is disapproved, the appropriate Ohio EPA District Office or local air agency will notify the permittee in writing within 45 days after receiving notice. This notification will specify the grounds on which the disapproval is based. In the absence of a notice of disapproval within 45 days, approval is automatically granted.

ii. If monitoring data show that the emissions unit is not in compliance with the relevant emission limit, the frequency of reporting shall revert to semiannual, and the permittee shall state this exceedance in the ongoing compliance status report for the next reporting period. After demonstrating ongoing compliance with the relevant emission limit for another full year, the permittee may again request approval to reduce the reporting frequency.

13. The permittee shall submit a notification of construction or reconstruction as soon as practicable before the construction or reconstruction has commenced to the appropriate Ohio EPA District Office or local air agency which includes the following:

1. The permittee's name, title, and address.

2. The address (i.e., physical location) or proposed address of the affected emissions unit if different from the permittee's.

3. A notification of intention to construct or make any physical or operational changes to an affected emissions unit that may meet or has been determined to meet the criteria for a reconstruction as defined in 40 CFR part 63.2.

4. An identification of 40 CFR Part 63, subpart N as the basis for the notification.

5. The expected commencement and completion dates of the construction or

reconstruction.

6. The anticipated date of (initial) startup.

7. The type of process operation to be performed (hard or decorative chromium electroplating or chromium anodizing).

8. A description of the air pollution control technique to be used to control emissions, such as preliminary design drawings and design capacity if an add-on air pollution control device is used.

9. An estimate of emissions based on engineering calculations and vendor information on control device efficiency, expressed in units consistent with the emissions limits of 40 CFR Part 63, subpart N. Calculations of emission estimates should be in sufficient detail to permit assessment of the validity of the calculations.

14. If a reconstruction is to occur, the permittee shall submit as soon as practicable the following information to the appropriate Ohio EPA District Office or local air agency:

    1. A brief description of the affected emissions unit and the components to be replaced.

    2. A brief description of the present and proposed emission control technique.

    3. An estimate of the fixed capital cost of the replacements and of constructing a comparable entirely new emissions unit.

    4. The estimated life of the affected emissions unit after the replacements.

    5. A discussion of any economic or technical limitations the emissions unit may have in complying with relevant standards or other requirements after proposed replacements. The discussion shall be sufficiently detailed to demonstrate to the appropriate Ohio EPA District Office or local air agency satisfaction that the technical or economic limitations affected the emissions unit ability to comply with the relevant standard and how they do so.

Testing Requirements

1. Performance test results shall be documented in complete test reports that contain the following information:

a. A brief process description;

b. Sampling location description(s);

c. A description of sampling and analytical procedures and any modifications to standard procedures;

d. Test results;

e. Quality assurance procedures and results;

f. Records of operating conditions during testing, preparation of standards, and calibration procedures;

g. Raw data sheets for field sampling and field and laboratory analyses;

h. Documentation of calculations; and

I. Any other information required by the test method.

The test plan shall be made available to the appropriate Ohio EPA District Office or local air agency prior to testing, if requested.

The results of tests conducted prior to December 1991, in which Method 306A was used to demonstrate the performance of a control technique, are not acceptable.

2. If the permittee conducts performance testing at startup to obtain a permit to install, the results of such testing may be used to demonstrate compliance if:

   a. The test methods and procedures identified in this permit were used during the performance test.

   b. The performance test was conducted under representative operating conditions.

   c. The performance test report contains the elements of paragraph 1.a. through 1.i. in this section.

   d. The permittee has sufficient data to establish the operating parameter value that corresponds to compliance as required for continuous compliance monitoring.

3. The permittee shall use the following test methods to conduct an initial performance test:

a. Method 306 or Method 306A, "Determination of Chromium Emissions From Decorative and Hard Chromium Electroplating and Anodizing Operations" shall be used to determine the chromium concentration from hard or decorative chromium electroplating tanks or chromium anodizing tanks.

i. The sampling time and sample volume for each run of Methods 306 and 306A shall be at least 120 minutes and 1.7 dscm (60 dscf), respectively.

ii. Methods 306 and 306A allow the measurement of either total chromium or hexavalent chromium emissions. Emissions units using chromic acid baths can demonstrate compliance with the emission limits by measuring either the total chromium or hexavalent chromium concentration. Hence, the hexavalent chromium concentration measured by these methods is equal to the total chromium concentration for the affected operations.

b. The California Air Resources Board (CARB) Method 425 may be used to determine the chromium concentration from hard and decorative chromium electroplating tanks and chromium anodizing tanks if the following conditions are met:

i. If a calorimetric analysis method is used, the sampling time and volume shall be sufficient to result in 33-66 micrograms of catch in the sampling train.

ii. If an Atomic Absorption Graphite Furnace (AAGF) or Ion Chromatography (with a Post-column Reactor (ICPCR) analyses) is used, the sampling time and volume should be sufficient to result in a sample catch that is 5 to 10 times the minimum detection limit of the analytical method (i.e., 1.0 microgram per liter of sample for AAGF and 0.5 microgram per liter of sample for ICPCR).

iii. A minimum of three separate runs must be conducted. The other requirements of paragraph 63.7 of 40 CFR Part 63, subpart A must be met.

4. All monitoring equipment shall be installed such that representative measurements of emissions or process parameters from the affected emissions unit are obtained. For monitoring equipment purchased from a vendor, verification of the operational status of the monitoring equipment shall include execution of the manufacturer’s written specifications or recommendations for installation, operation, and calibration of the system. Specifications for

differential pressure measurement devices used to measure velocity pressure shall be in accordance with section 2.2 of Method 2 (40 CFR part 60, Appendix A).

5. The permittee shall measure the pressure drop across the add-on air pollution control device in accordance with following quidelines:

    a. Pressure taps shall be installed at any of the following locations:

        i. At the inlet and outlet of the control system. The inlet tap should be installed in the ductwork just prior to the control device and the corresponding outlet pressure tap should be installed on the outlet side of the control device prior to the blower or on the downstream side of the blower.

        ii. On each side of the packed bed within the control system or on each side of each mesh pad within the control system.

        iii. On the front side of the first mesh pad and back side of the last mesh pad within the control system.

    b. Pressure taps shall be sited at locations that are:

        i. As free from luggage as possible and away form any flow disturbances such as cyclonic demisters.

        ii. Situated such that no air infiltration at the measurement site will occur that could bias the measurement.

    c. Pressure taps shall be constructed of either polyethylene, polybutylene, or other nonreactive materials.

    d. Nonreactive plastic tubing shall be used to connect the pressure taps to the device used to measure pressure drop.

    e. Any of the following pressure gauges can be used to monitor pressure drop: a magnehelic gauge, an included manometer, or a "U" tube manometer.

    f. Prior to connecting any pressure lines to the pressure gauges(s), each gauge shall be zeroed. No calibration of the pressure gauges is required.

6. The permittee shall measure the velocity pressure at the inlet to an add-on air pollution control device to establish the site specific velocity pressure as follows:
    a. Locate a velocity traverse port in a section of straight duct that connects

the hooding on the plating tank or tanks with the control device. The port shall be located as close to the control system as possible, and shall be placed a minimum of 2 duct diameters downstream and 0.5 diameter upstream of any flow disturbance such as a bend, expansion, or contraction. If 2.5 diameters of straight duct work does not exist, locate the port 0.8 of the duct diameter downstream and 0.2 of the duct diameter upstream from any flow disturbance.

b. A 12-point velocity traverse of the duct to the control device shall be conducted along a single axis according to Method 2 (40 CFR part 60, appendix A) using an S-type pitot tube measurement of the barometric pressure and duct temperature at each traverse point is not required, but is suggested. Mark the S-type pitot tube as specified in Method 1 (40 CFR part 60, appendix A) with 12 points. Measure the velocity pressure (delta p) values for the velocity points and record. Determine the square root of the individual velocity points and record. Determine the square root of the individual velocity point delta p values and average. The point with the square root value that comes closest to the average square root value is the point of average velocity. The delta p value measured for this point during the performance test will be sued as the reference for future monitoring.