OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

MEMORANDUM **October 13, 1999**

TO: Dawson Lasseter, P.E., Chief Engineer, Permits Section

THROUGH: Dave Dimick, P.E., Supervisor, Existing Source Permits Unit
Don Whitney, P.E., Supervisor, New Source Permits Unit

THROUGH: Peer Review

FROM: Permit Support Unit

SUBJECT: General Permit for Chromium Electroplating and Anodizing Facilities

INTRODUCTION

This General Permit has been developed to authorize construction and/or operation of facilities whose primary air pollutant emissions are from chromium electroplating and anodizing operations. Permits issued to these facilities must address all air emissions from all sources at these facilities. Thus, the permit is designed to include those sources typically present at chromium electroplating and anodizing facilities, including hard and decorative chromium electroplating processes, chromium anodizing processes, solvent degreasing operations, miscellaneous equipment, and fugitive sources. Facilities with other sources of air emissions that are subject to permitting requirements are not eligible for coverage under this permit.

A significant portion of the industry background information in this memorandum was excerpted or developed from EPA's Profile of the Fabricated Metal Products Industry, September 1995 (Pub No. EPA-310-R-95-007), Section 12.20 (Electroplating) of AP-42 (7/96), and the Background Information Document (BID) prepared by EPA for development of the MACT standard for chromium electroplaters.

Chromium electroplating and anodizing are part of the fabricated metal products industry sector. Standard Industrial Classification (SIC) Code 3471, Plating and Polishing includes any sort of metal plating and polishing facility. Although small job shops dominate the chromium plating industry, plating operations are also conducted by a variety of metal fabricating facilities (SIC Major Group 34). Virtually all facilities which do plating have other pollutant emitting processes, such as metal preparation (e.g., solvent degreasing), forming, and/or finishing (e.g., coating operations). Pollutant-emitting processes commonly operated at electroplating facilities in the state that were considered for inclusion under this permit include:

- Hard chromium electroplating
- Decorative chromium electroplating
- Chromium anodizing

- Other chromium plating
- Non-chromium plating
- Boilers and heaters
- Solvent degreasing
- Metal Casting and Forming
- Surface Coating (Painting)

In order to balance the need to provide the broadest coverage to those applicants that have the same or substantially similar operations with the need to effectively and efficiently permit these sources, this permit is limited in scope and complexity. The permit focuses on facilities with similar emissions, activities, and processes which emit the same types of regulated air pollutants, and which are subject to the same or similar standards, limitations, operating requirements, and monitoring requirements.

In July 1997, EPA provided DEQ with a list of 40 Oklahoma facilities that they believe are potentially subject to the MACT standard for chrome platers and anodizers. Information in Table 1 gives the number of Oklahoma facilities under various SIC codes in Major Group 34 (Fabricated Metal Products), based on information in AQD's two primary databases. The numbers under the "Inventory" column are from the 1995 Emission Inventory for those facilities emitting >5 TPY of any regulated pollutant. The numbers under the "Permitted" column are from the Team Database (Permitting, Compliance, & Enforcement) as of 10/15/98. Four facilities listed by EPA submitted 1995 Emissions Inventory reports, and 13 are included in the Team Database.

Table 1 - Number of Oklahoma Fabricated Metal Products Facilities by SIC Code

SIC#	*Industry Title*	*Inventory*	*Permitted*
3400	(Unspecified) Fabricated Metal Products	–	2
3411	Metal Cans	2	3
3412	Metal Barrels, Drums, and Pails	1	1
3429	Hardware, nec	1	1
3432	Plumbing Fixture Fittings and Trim	–	1
3441	Fabricated Structural Metal	1	1
3443	Fabricated Plate Work (Boiler Shops)	2	7
3444	Sheet Metal Work	–	3
3449	Miscellaneous Metal Work	1	1
3452	Bolts, Nuts, Rivets, and Washers	–	1
3462	Iron and Steel Forgings	–	1
3466	Forgings & Stampings: Crowns & Closures	1	1
3469	Metal Stampings, nec	–	3
3471	Plating and Polishing	5	14
3479	Metal Coating and Allied Services	2	14
3483	Ammunition, exc. Small Arms, nec	1	1
3491	Industrial Valves	–	5
3492	Fluid Power Valves & Hose Fittings	–	2
3494	Valves and Pipe Fittings, nec	–	1
3496	Misc. Fabricated Wire Products	–	2
3498	Fabricated Pipe and Fittings	–	1

SIC#	*Industry Title*	*Inventory*	*Permitted*
3499	Fabricated Metal Products, nec	3	9
	Total in-state facilities inventoried/permitted =>	20	75

nec = not elsewhere classified

In addition to the industry groups listed above, plating operations may be conducted at facilities under other industry sectors. For example, SIC code 3711 covers motor vehicles and car bodies, (including the manufacture of bumpers), and SIC Major Group 39 covers jewelry, silverware, and plated ware under industry group 391.

DESCRIPTION

Electroplating is the process of depositing a layer of metal on a base material by passing an electric current through an electrolyte in contact with the base material to provide a surface with a decorative appearance and/or with functional properties such as wear resistance. In this process, the part serves as the cathode in the electrolytic cell and the solution containing the metal ions serves as the electrolyte.

Hard Chromium Electroplating is defined as a process by which a thick layer of chromium (typically 1.3 to 760 microns) is electrodeposited on a base material to provide a surface with functional properties such as wear resistance, a low coefficient of friction, hardness, and corrosion resistance. The hard chromium electroplating process is performed at current densities typically ranging from 1,600 to 6,500 amperes per square meter (A/m^2), for total plating periods of 20 minutes to 36 hours, depending upon the desired plate thickness.

Decorative Chromium Electroplating is defined as a process by which a thin layer of chromium (typically 0.003 to 2.5 microns) is electrodeposited on a base metal, plastic, or undercoating to provide a bright surface with wear and tarnish resistance. Typical current density applied during this process ranges from 540 to 2,400 A/m^2 for the total plating periods of 0.5 to 5 minutes.

Chromium Anodizing is defined as the electrolytic process by which an oxide layer is produced on the surface of a base metal for functional purposes (e.g., corrosion resistance or electrical insulation) using a chromic acid solution. In chromium anodizing, the part to be anodized acts as the anode in the electrical circuit, and the chromic acid solution, with a concentration typically ranging from 50 to 100 grams per liter (g/L), serves as the electrolyte.

Included below is Figure 12.20-2, reproduced from AP-42 (7/96), which outlines a typical chromium plating process. The decorative chromium plating process shown consists of pretreatment, alkaline cleaning, and acid dipping, followed by strike plating of copper, copper electroplating, nickel electroplating, and chromium electroplating. The pretreatment step may include polishing, grinding, and degreasing. Degreasing consists of either dipping the part in organic solvents, such as trichloroethylene or perchloroethylene, or using the vapors from organic solvents to remove surface grease. Alkaline cleaning is used to dislodge surface soil with inorganic cleaning solutions, such as sodium carbonate, sodium phosphate, or sodium hydroxide. Acid dipping, which is optional, is used to remove tarnish or oxide films formed in the alkaline cleaning step and to neutralize the alkaline film. Acid dip solutions typically contain 10 to 30 percent

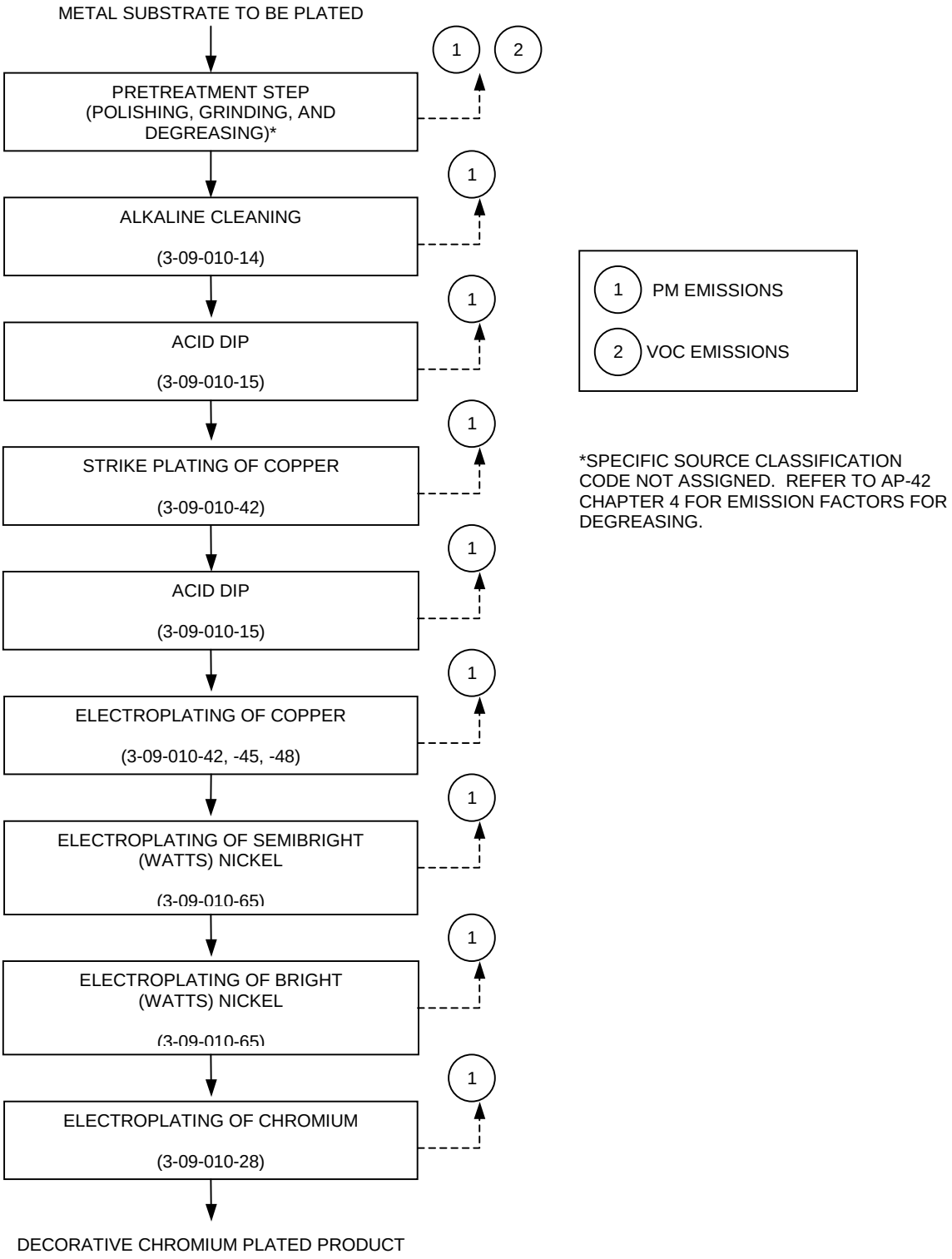

Figure 12.20-2. Flow Diagram for decorative chromium plating on a metal substrate.
(Source Classification Codes in parentheses.)

hydrochloric or sulfuric acid. Chromic acid anodic treatment, which also is optional, cleans the metal surface and enhances the adhesion of chromium in the electroplating step. The copper strike plating step consists of applying a thin layer of copper in a copper cyanide solution to enhance the conductive properties of the base metal. Following the copper strike plate, the substrate is acid dipped again, and then electroplated with an undercoat of copper to improve corrosion resistance and cover defects. Either a copper cyanide or acid copper solution is used in this step. The substrate then is plated with nickel in two layers (semibright nickel and bright nickel) to further improve corrosion resistance and activate the surface metal for chromium electroplating. The final step in the process is the electroplating operation itself. Additional details on plating processes are available in AP-42, Section 12.20 – Electroplating.

Metal Casting and Forming are performed by many facilities that also have plating processes. Metal casting is more likely to be performed at a facility separate from plating operations, and is beyond the scope of this permit. Once molten metals are formed into a workable shape, shearing and forming operations are usually performed. Shearing operations cut materials into a desired shape and size, while forming operations bend or conform materials into specific shapes. After shearing and forming activities are complete, the material is machined to refine the shape of the raw stock. Particulates, and VOCs from solvent degreasing, are the primary pollutants of concern from these operations. Combustion products, depending on the specific operations and heat source used, may also be produced. Due to the variety and complexity of these metal casting and forming operations, they are not included in this permit, except those that would qualify as de minimis (minor facilities) or trivial or insignificant (Part 70 sources) activities, as listed in Appendices I and J of OAC 252:100.

Surface Coating (Painting) is the application of decorative or protective materials in liquid or powder form to substrates. These coatings normally include general solvent type paints, varnishes, lacquers, and water-thinned paints. After application of coating by one of a variety of methods such as brushing, rolling, spraying, dipping and flow coating, the surface is air and/or heat dried to remove the volatile solvents from the coated surface. Surface coating operations can be significant sources of a number of pollutants, including VOCs, HAPs, and Particulates. Drying/curing operations can result in emissions of combustion products, depending on the heat source used. Due to their variety and complexity, surface coating operations are not included in this permit, except those that would qualify as de minimis (minor facilities) or trivial or insignificant (Part 70 sources) activities, as listed in Appendices I and J of OAC 252:100.

EMISSIONS

Electroplaters emit a number of different regulated pollutants. Primary pollutants of concern include chromium/chromic acid and other plating metals and acid mists. Additional pollutants emitted, depending on the specific plating process, may include cyanide, ammonia, acid and alkaline mists, or other plating bath and cleaning solution constituents. Other processes present at plating facilities may emit VOCs, halogenated organic solvents, particulates, and/or combustion products.

Criteria Pollutants

As recorded for 1995, fabricated metal products facilities (SIC Major Group 34) are not particularly significant sources of the criteria pollutants (particulates, lead, NO_X, SO_X, CO and VOC) emitted in the State of Oklahoma. Of the 20 facilities that were included in the 1995 Emissions Inventory, none reported emitting more than 73 TPY of any criteria pollutant (see Table 2 for a TPY breakdown). The greatest potential for VOC emissions from plating facilities likely comes from solvent degreasing. [Note: 40 CFR Part 63 Subpart T regulates HAPs emissions from solvent cleaning machines which use any of the following solvents: methylene chloride, perchloroethylene, 1,1,1-trichloroethane, trichloroethylene, carbon tetrachloride, and chloroform. The latter three are also classified as VOCs.] Facilities that perform ancillary surface coating operations would also be expected to have significant VOC and particulate emissions. Heaters and boilers located at plating facilities produce combustion byproducts.

Emissions estimates can be made using data available from AP-42. Emission factors have been developed for various emission points, including processing operations and fugitives. These factors were based on actual emissions tests at several facilities. However, in some cases limited data was available to calculate specific factors. Thus, some factors are not rated as reliable as others. Incorporation of a reasonable safety factor may be appropriate in developing final estimates.

TABLE 2
CRITERIA POLLUTANT EMISSIONS FROM
OKLAHOMA FABRICATED METAL PRODUCTS FACILITIES (SIC MAJOR GROUP 34)*

Pollutant	**Number of Facilities Emitting:**			
	0 – 1.0 TPY	**1.0 – 5.0 TPY**	**5.0 – 40 TPY**	**40 – 100 TPY**
Particulates	15	2	3	0
NO_X	11	6	3	0
SO_X	20	0	0	0
CO	17	2	0	1
VOC	4	5	8	3

* Information derived from 1995 Emissions Inventory.

Toxic and Hazardous Air Pollutants

In Oklahoma, facilities have not historically reported emissions other than criteria pollutants. Toxic Air Contaminants (TACs) and Hazardous Air Pollutants (HAPs) may be emitted from a number of sources at plating facilities. They include primarily chromium/chromic acid, other plating metals, and acid mists from the plating operations, and halogenated solvents from degreasing operations. Separate MACT standards apply to chromium electroplating and anodizing tanks, and to halogenated solvent cleaning operations. Thus, Part 5 of Subchapter 41, which is not applicable to any unit that is subject to a NESHAP under 40 CFR Part 61 or 63, does not apply to most plating and degreasing applications at these facilities. Emissions of toxics from other operations are expected to be negligible. In those few cases where a TAC would be emitted at significant levels, a site-specific determination would be required to develop appropriate conditions (limits and/or control requirements). This type of determination cannot

be accommodated in a general permit. Therefore, facilities that emit greater than the de minimis levels for category "A", "B", or "C" toxic air contaminants as defined in OAC 252:100-41-43, have been excluded from coverage by an Authorization to Construct issued under this permit. However, such are eligible for coverage under an Authorization to Operate under the permit if they obtain an individual construction permit and any limitations in that permit are incorporated into their Authorization to Operate.

PERMIT STRUCTURE

Two separate general permits, one for minor facilities and one for Part 70 facilities, have been developed for the chromium electroplating and anodizing source category. Both of these permits have been developed to allow facilities to satisfy the requirements to obtain construction and operating permits for new and existing facilities and modifications of existing facilities. They have been developed to include requirements for all sources with emissions above de minimis levels. De minimis facilities are those that have actual emissions of 5 TPY or less of each regulated air pollutant and are not subject to an NSPS or NESHAP. Thus, facilities typically eligible for Permit by Rule (generally > 5 TPY and < 40 TPY), minor facilities (generally > 5 TPY and < 100 TPY), and major or Part 70 sources (generally > 100 TPY) may obtain coverage under one of these permits if they meet the eligibility requirements. Likewise, facilities that emit hazardous air pollutants, and are eligible for a minor source (< 10 TPY of any single HAP or < 25 TPY combination of HAPs) and major or Part 70 sources ($\geq$ 10 TPY of any single HAP or $\geq$ 25 TPY combination of HAPs), may obtain coverage under these permits if they meet the eligibility requirements.

One goal of the permit is to provide coverage for facilities, both major and area sources, which are required to obtain a Part 70 permit because they are subject to the MACT standard for facilities with chromium electroplating and anodizing tanks established in 40 CFR Part 63 Subpart N. Subpart N permanently exempts from the requirement to obtain a Part 70 permit, unless located at a major source, any decorative chrome and anodizing facility that uses fume suppressants and any decorative chrome facility which uses a trivalent chromium bath with a wetting agent. In addition, Subpart N defers area sources (except those located at a major source) from Part 70 permit requirements until December 9, 1999 (application due December, 2000). EPA stated in letters to the STAPPA and ALAPCO organizations dated 4/19/99 their intent to extend the deferral an additional five years. OAC 252:100-7-2 requires any facility that is subject to NSPS or NESHAP to obtain a permit.

The permits would also cover those chromium, non-chromium platers, and other facilities with solvent degreasing operations, both major and area sources, which are required to obtain a permit because they are subject to the MACT standard for facilities with halogenated solvent cleaning established in 40 CFR Part 63 Subpart T. Subpart T permanently exempts any batch cold solvent cleaning machine from the requirement to obtain a Part 70 permit, unless it is a major source by itself, or it is located at a major source. Subpart T also contains the Part 70 permit deferral for area sources.

AQD knows of no chromium electroplating and anodizing facilities in Oklahoma that are currently Part 70 sources. Therefore, issuance of the Part 70 permit is deferred and only the

minor facility permit will be issued at this time. This memorandum will continue to refer to both permits in the event that a Part 70 permit is issued at a later time.

The general permits are structured so that eligible facilities can obtain an Authorization to Construct and Authorization to Operate under the permit, or can obtain an individual construction permit and then an Authorization to Operate under the permit. This should allow applicants the greatest flexibility for obtaining coverage under the permit. For example, existing facilities are not eligible for coverage under an Authorization to Construct under this permit if they request a PSD significant increase in emissions. This is because the complexity of the PSD requirements, and associated review, requires a very labor intensive, time-consuming process to develop site-specific requirements for emissions units at a facility. This type of process is best handled in an individual construction permit since the statutory time limit to issue Authorizations is 90 days. (Note that no PSD chromium electroplating and anodizing facility currently exists or is anticipated in Oklahoma.)

In addition, no site-specific determinations can be made when issuing an Authorization under a general permit. However, once these site-specific determinations have been completed and drafted into a construction permit as specific conditions or emissions limitations, they can then be easily incorporated into the Authorization to Operate under a general permit. Certain other options usually available by regulation had to be disallowed so that no site-specific determinations were made when issuing an Authorization under the general permit. For example, Alternate Emissions Reductions Authorizations are not allowed via an Authorization to Construct under this permit. Development of these site-specific limitations requires Air Quality Council approval. Likewise, several regulations allow exceptions from specific requirements by a showing that they are unreasonable, "if approved by the Executive Director." These approvals also require a site-specific determination that cannot be reasonably made when issuing an Authorization to Construct under this permit.

All conditions in the permit have been derived directly from applicable requirements given in OAC 252:100 - Air Pollution Control, as promulgated to implement the Oklahoma Clean Air Act. The permit is formatted so that specific conditions are given in sections for each emissions unit allowed under the permit, i.e., electroplating and anodizing processes, solvent degreasing operations, heaters and boilers, and fugitive sources, as well as facility-wide requirements. Each section contains a list of operational conditions and/or emissions limitations, and monitoring and recordkeeping conditions developed to assure compliance with applicable requirements. Conditions to assure compliance with those state regulations that implement federal requirements, e.g., NSPS, NESHAP, etc., generally adopt the federal regulations by reference as a specific condition for the permit. Associated monitoring and recordkeeping generally follows the same process. These emissions unit-specific conditions, as required by Oklahoma regulations, are generally established in the Authorization to Construct under this permit, or by an individual permit, then incorporated into a subsequently-issued Authorization to Operate for the facility. Additionally, a section of standard conditions is established to contain those requirements applicable to all sources.

Because of the nature of the emissions units at the facility, specific numeric emissions limitations are not required to be developed for all emissions units covered under all Authorizations to

Construct/Operate under the permit. In general, specific numeric emissions limitations are required for those sources that have the potential to exceed a threshold value or violate an applicable requirement. They are established from applicable requirements given in the rules, or from a limitation that the source assumes to avoid an applicable requirement, or from limitations established in previously issued state or federal permits for the facility. Provided, however, that source-assumed limitations and/or limitations from previously issued permits are equivalent or more stringent than those established from applicable requirements given in the permit. Both permits establish limitations primarily as a facility-wide cap on emissions from the facility, rather than establishing limitations on individual emissions units. The general permit for minor facilities establishes these limitations as a facility-wide cap, not to equal or exceed 100 TPY of any regulated pollutant, nor to equal or exceed 10 TPY of any single HAP or 25 TPY of all HAPs. The general permit for Part 70 facilities establishes limitations as a facility-wide cap, at a level expected to be representative of actual emissions from the facility during the life of the permit, as requested by the permittee.

This approach should greatly reduce the burden on both the permittee and AQD in issuing a new Authorization to Construct or Operate when making certain changes to the facility. Minor facilities, for which the permit is valid for the life of the facility, will typically only need a new Authorization when they add a piece of equipment subject to NSPS or NESHAP. Any other change would require only that the permittee not exceed the facility-wide emissions cap previously established in an Authorization to Operate, and that a 7-day advance notification of the change is provided to DEQ. Major facilities, for which the permit is valid for five years, will typically only need a new Authorization when they make a change at the facility which would necessitate changing existing monitoring, reporting, or recordkeeping requirements. No minor modifications, or modifications under Title I or the CAA considered significant for Part 70 facilities would require a new Authorization unless the resulting emissions exceeded the facility-wide emissions cap previously established in an Authorization to Operate. These changes would require only that the permittee provide a 7-day advance notification of the change to DEQ. Title I changes include modifications under NSPS and NESHAP, non-attainment new source review (NSR), and attainment area NSR (i.e., PSD). However, eligibility for the permit is restricted to those changes that are not associated with non-attainment NSR and PSD. Thus, the only Title I changes that would be allowed to proceed without first obtaining an Authorization to Construct are those modifications under NSPS or NESHAP.

ELIGIBILITY

In order to provide the broadest coverage to applicants under this permit, yet assure compliance with all applicable requirements, eligibility must be restricted to only those facilities whose emissions units are addressed in this permit. The permit has been developed for a facility designed and operated for the primary purpose of performing hard chromium electroplating, decorative chromium electroplating, or chromium anodizing. The permit also would cover a facility that performs hard chromium electroplating, decorative chromium electroplating, chromium anodizing, or non-chromium electroplating ancillary to other facility operations where an Air Quality permit is not otherwise required under OAC 252:100. In addition, those facilities required to obtain a permit solely because they perform solvent degreasing subject to 40 CFR Part 63 Subpart T would be eligible.

Emissions units identified as typically present at such a facility, and addressed in the permit, include hard and decorative electroplating processes, chromium anodizing processes, solvent degreasing operations, heaters and boilers, and fugitive emissions sources. In addition, those emissions units identified as de minimis (minor facilities), or insignificant or trivial (Part 70 facilities), are also recognized as typically present at such a facility, and addressed in the permit. Applicable requirements for these emissions units have been included in the permits, either as a facility-wide requirement, or as an emissions-unit specific requirement. Any other emissions unit subject to an applicable requirement not included in this permit makes that facility ineligible for coverage under these permits. The following facilities are not eligible for coverage under this permit:

1. Facilities that emit greater than the de minimis levels for category "A", "B", or "C" toxic air contaminants as defined in OAC 252:100-41-43, unless they are addressed in an individual construction permit and incorporated into a subsequent Authorization to Operate.

2. Facilities that use thermal devices (such as incinerators, flares, or thermal oxidizers) as a control device for emissions of solvents, unless they are addressed in an individual construction permit and incorporated into a subsequent Authorization to Operate.

3. Those facilities with emissions units subject to NSPS or NESHAPs other than:
   a. 40 CFR Part 63 Subpart N – National Emission Standards for Chromium Emissions From Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks
   b. 40 CFR Part 63 Subpart T – National Emission Standards for Halogenated Solvent Cleaning,

   unless such requirements are specifically incorporated into the Authorization to Construct/Operate as provided for under the permit.

4. Those facilities located in nonattainment areas, since nonattainment area requirements are not included in the permit. Note that requirements for facilities in Air Quality Management Areas (Tulsa and Oklahoma County) have been included in the permits, and facilities located in these AQMAs are eligible for coverage under this permit.

5. Facilities which cannot meet the BACT requirement specified in the Part 70 permit for an Authorization to Construct for a particular emissions unit as required for major sources, for each pollutant that would cause the source to be defined as a new major source (OAC 252:100-8-5(d)(1)(A)). However, they are eligible for coverage under an Authorization to Operate if they obtain an individual construction permit and any limitations in that permit are incorporated into their Authorization to Operate.

6. Facilities with PSD significant increases are not eligible for coverage under an Authorization to Construct under this permit since PSD requirements are not included in this permit. However, they are eligible for coverage under an Authorization to Operate

under the Part 70 permit if they obtain an individual construction permit and any limitations in that permit are incorporated into their Authorization to Operate.

7. Facilities subject to the requirement for a case-by-case MACT determination are not eligible for coverage under an Authorization to Construct under this permit since these requirements are not included in this permit. However, they are eligible for coverage under an Authorization to Operate under the Part 70 permit if they obtain an individual construction permit and any limitations in that permit are incorporated into their Authorization to Operate.

8. Facilities that request an Alternative Emissions Reduction Authorization since this requires a site-specific determination of compliance which cannot be performed in a reasonable time to issue an Authorization under this permit. However, such facilities are eligible for coverage under an Authorization to Operate under the Part 70 permit if they obtain an individual construction permit and any limitations in that permit are incorporated into their Authorization to Operate.

9. Facilities with emissions units subject to 40 CFR Part 264 (Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities).

10. Part 70 facilities that require a compliance plan to be incorporated into an Authorization to Construct or Operate, unless that Authorization is submitted to public review.

11. Facilities with emissions units subject to the Compliance Assurance Monitoring (CAM) Rule, 40 CFR Part 64. At this time, and for the duration of this permit, only “large emissions units” are affected by the CAM rule. Few, if any, chromium electroplating and anodizing facilities with “large emissions units” are believed to be present in Oklahoma at this time. However, those facilities with "large emissions units" which are subject to an emissions cap which meets the requirements of 40 CFR §70.4(b)(12) and §71.6(a)(13)(iii) are exempt from the CAM Rule, and thus may obtain coverage under this permit.

12. Facilities that are major temporary sources. No chromium electroplating and anodizing facilities present in Oklahoma are believed to be major temporary sources.

13. Facilities owned or operated by an applicant which has not paid all monies owed to the DEQ, or is not in substantial compliance with the Environmental Quality Code, rules of the Board and the terms of any existing DEQ permits and orders.

14. Facilities for which material facts were misrepresented or omitted from the application and the applicant knew or should have known of such misrepresentation or omission.

15. Affected sources under the acid rain program (Title IV of the Federal CAA, as amended). These typically include fossil fuel-burning units used by electric utilities.

16. Affected sources under OAC 252:100-15 (Motor Vehicle Pollution Control Devices). Motor vehicles are not a covered source for this permit.

17. Affected sources under OAC 252:100-17 (Incinerators). Incinerators are not a covered source for this permit.

18. Affected sources under OAC 252:100-21 (Wood Burning Equipment). Wood Burning Equipment is not a covered source for this permit.

19. Affected sources under OAC 252:100-23 (Cotton Gins). Cotton Gins are not a covered source for this permit.

20. Affected sources under OAC 252:100-24 (Grain, Feed, or Seed Operations). Grain, Feed, or Seed Operations are not a covered source for this permit.

21. Affected sources under OAC 252:100-33 (Control of Emissions of Nitrogen Oxides). No specific conditions are needed in the permit to address these requirements since no fuel-burning equipment rated at 50 MMBTU/hr is expected to be present at these sites. Therefore, sources subject to OAC252:100-33 have been excluded from eligibility for the permit.

22. Affected sources under OAC 252:100-35(Control of Emissions of Carbon Monoxide). Subchapter 35 controls emissions of carbon monoxide from foundry cupola, blast furnace, basic oxygen furnace, catalytic cracking unit or other petroleum or natural gas process except stationary engines. These are not covered sources for this permit.

In addition, DEQ reserves the right to refuse issuance of an authorization to an applicant even though the facility meets the above eligibility criteria. This is necessary to handle certain situations where a particular emissions unit is not expected to be present at such facilities, but gives the agency the discretion to make the final decision as to whether coverage is appropriate.

BEST AVAILABLE CONTROL TECHNOLOGY (BACT)

BACT is required for major sources, for each pollutant that would cause the source to be defined as a major source (OAC 252:100-8-5(d)(1)(A)). Part 5 of Subchapter 41 requires all new sources of Category “A” pollutants to meet BACT (OAC 252:100-41-37(a)), and may require all existing sources emitting a confirmed human carcinogen to meet BACT if unable to show compliance with the MAAC, regardless of their minor/major source status. Part 5 of Subchapter 41 does not apply to any unit which is subject to a NESHAP under 40 CFR Part 61 or 63. In addition, facilities that emit greater than the de minimis levels for category "A", "B", or "C" toxic air contaminants as defined in OAC 252:100-41-43, have been excluded from coverage under this permit (unless they obtain an individual construction permit and any limitations in that permit are incorporated into their Authorization to Operate). Thus, only the major source BACT requirement (OAC 252:100-8-5(d)(1)(a)) is applicable.

BACT has been established in the permit for specific emission units. Under this permit, the control technology requirements of 40 CFR Part 63 Subparts N and T are considered equivalent to BACT for those chromium electroplating/anodizing tanks and halogenated solvent cleaning units, respectively, that are subject to each. Since no site-specific determinations can be made under this permit, all emissions units authorized to construct under this permit shall meet the specified control technology requirements. Applicable requirements may allow other methods to meet the BACT requirements, e.g., alternate means of emission limitation. However, this option is not allowed under any Authorization to Construct under this permit. This option may be pursued through issuance of an individual construction permit for the facility, followed by a request for Authorization to Operate under this General Permit.

POLLUTION PREVENTION

Pollution prevention (P2) is integrated into this permit using the following six-fold approach:

1. Permit Flexibility
2. Pollution Prevention Permit Conditions
3. Inclusion of Pollution Prevention Information in the Application
4. Accelerated Permit Review
5. Extended Compliance Time
6. Alternative or Reduced Monitoring for Pollution Prevention

Permit flexibility is provided by allowing a facility to request issuance of either an Authorization to Construct and then an Authorization to Operate under the General Permit, or issuance of an individual construction permit, followed by issuance of an Authorization to Operate under the General Permit. The General Permit specifies in advance certain new source review requirements, such as BACT, that will be included in an Authorization to Construct. Flexibility is also provided by allowing certain pre-approved changes, such as the addition of new emissions units, or other changes that result in an emissions increase, so long as they are foreseeable at the time of permit application and are addressed in the facility-wide cap. The permit also allows inclusion in the Authorization of those alternate operating scenarios that are foreseeable at the time of permit application. The permit provides additional flexibility by allowing the facility to establish a facility-wide emissions cap, rather than placing limits on each individual emissions source at the facility. For minor facilities, emissions may be increased, so long as the major source threshold level is not exceeded.

Several specific permit conditions included in the permit require a pollution prevention approach. For instance, facilities are required to maintain an annual inventory of emissions, in part to develop an emission history for the facility. This inventory and history can then be used to assess potential pollution prevention alternatives as part of the application process for each subsequent permit modification or permit renewal. In addition, specific conditions are included in the permit, which require good operating and housekeeping procedures to be followed to prevent pollution.

Pollution prevention concepts have been used in development of Federal MACT Standards issued under 40 CFR Part 63. For instance, in addition to emission limits, requirements under Subpart N,

"Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks," include work practice standards such as requiring an operation and maintenance plan, in-house inspections, and specific maintenance practices. [A brochure published by EPA (Publication No. EPA-453/F-95-001, March 1995) summarizes these requirements.] Subpart T, "Halogenated Solvent Cleaning," of 40 CFR Part 63 allows covered facilities to choose among several compliance options, all of which are based on pollution prevention. For example, facilities with batch vapor or in-line cleaning machines can comply by (1) choosing to meet an overall emission limit or (2) complying with basic design, work practice, and operator test requirements, and either installing a listed control combination or meeting an idling emission limit. [A brochure published by EPA (Publication No. EPA-453/F-94-083, March 1995) summarizes these requirements.]

Pollution prevention information is provided to the applicant as part of the application process for an Authorization under this General Permit. This information includes advice on how to develop a site-specific pollution prevention plan for the facility, and an example plan that can be used at the site. In addition, information on compliance assistance with pollution prevention planning from DEQ is also provided.

Accelerated permit review will be provided to those applicants making facility changes that involve pollution prevention projects. If a facility wants to make a P2 change, they call the Customer Assistance office, which makes a determination that the focus of the change is P2. The Customer Assistance office will then call the Air Quality Division and informally request that the permit be expedited.

Extended compliance time, where not precluded by regulation or statute, will be considered by DEQ for applicants for this permit if they are able to implement P2 measures. This extension of the compliance schedule may be granted where the long-term benefits that may accrue from a facility's implementing P2 outweigh the short-term environmental detriment of not implementing some other type of pollution control.

Alternative or reduced monitoring is provided in this permit for facilities that implement pollution prevention measures that result in emissions being well below regulatory thresholds. For instance, alternative or significantly reduced monitoring is allowed under Subpart N for facilities that utilize a wetting agent or trivalent chromium instead of hexavalent chromium.

APPLICABLE RULES AND REGULATIONS

Applicable rules and regulations are given below for each emission unit authorized in this permit, including facility-wide requirements, hard and decorative electroplating processes, chromium anodizing processes, solvent degreasing operations, and heaters and boilers.

FACILITY-WIDE REQUIREMENTS

Oklahoma Air Pollution Control Rules

OAC 252:100-6 (Permitting) [Applicable]

Subchapter 6 requires construction and operating permits for minor and major sources. A source is required to demonstrate to the satisfaction of DEQ that it has complied with all pertinent requirements and is designed to meet emissions limitations required by such rules, before a construction permit is issued. A source is then required to demonstrate to the satisfaction of DEQ that it has met, and is capable of continuing to meet all applicable emissions limitations and air pollution control requirements before an operating permit is issued. Major/minor source determinations, and the requirement to obtain a permit is based on the definition of potential to emit. This definition allows consideration of any physical or operational limitations on the capacity of a source to emit a pollutant if the limitation or effect it would have on emissions is enforceable. However, no specific emission limitations, work practice conditions, standards, or criteria are specified in this Subchapter.

The permit assures compliance with this regulation using the following approach:

The permit requires an applicant to obtain an Authorization to Construct and Authorization to Operate under this General Permit before starting construction and operation of an eligible facility. In lieu of an Authorization to Construct, an applicant may obtain an individual construction permit, then apply for an Authorization to Operate under this permit. Permit conditions have been included in the permit which provide that conditions from an individual construction permit be incorporated into the Authorization to Operate so long as they are equivalent or more stringent than corresponding conditions in the General Permit. Operational conditions have been included in the permit to require a source to construct and operate all emissions units and associated control equipment within a practical range of operating conditions so as to achieve, on a continuous basis, a level of emissions that complies with applicable requirements. Operating and compliance requirements, as well as monitoring and recordkeeping requirements, are specifically addressed in the permit for control devices. Conditions have also been included in the permit to require a compliance demonstration prior to issuance of an Authorization to Operate, and continuing compliance demonstrations to assure that the source continues to meet applicable requirements. Emissions limitations are required for those sources that have the potential to violate an applicable requirement. These limitations are established as a facility-wide cap.

OAC 252:100-7 (Permits for Minor Facilities) [Applicable to Minor Facilities]
[Not Applicable to Part 70 Sources]

Subchapter 7 specifies that a construction permit must require the permittee to comply with all applicable air pollution rules, federal NSPS and NESHAP established under Sections 111 and 112 of the Federal Clean Air Act and to not exceed ambient air quality standards. A construction

permit and subsequent operating permit is required for new facilities. A construction permit is also required when making certain changes to a facility. Permits are also required to meet public review requirements consistent with the Tier System given in the Uniform Permitting Act.

The permit assures compliance with this regulation using the following approach:

Specific conditions are included in the permit to address NSPS, NESHAP, and any required modeling. Addition of equipment to the facility subject to NSPS or NESHAP requires that a new Authorization to Construct (or individual construction permit) be issued to the facility. Operation of additional emissions units authorized under an Authorization to Construct or individual Construction Permit (e.g., those requiring a site-specific determination) require issuance of a new Authorization to Operate for the facility. Written notification of intent to construct must be provided to DEQ at least 7 days in advance of commencing construction. Written notification of intent to operate additional emissions units must be provided to DEQ within 60 days of commencing operation. Tier II Public review will be provided for this permit, and Tier I public review will be provided for any Authorizations issued hereunder.

OAC 252:100-8 (Permits for Part 70 Sources) **[Applicable to Part 70 Sources]**
[Not Applicable to Minor Facilities]

Subchapter 8 requires any facility that is subject to 40 CFR Part 70 permit requirements to obtain a permit under Subchapter 8. 40 CFR Part 63 Subparts N and T defer area sources (except those located at a major source) from Part 70 permit requirements until December 9, 1999 (application due December, 2000). EPA stated in letters to STAPPA and ALAPCO dated 4/19/99 their intent to extend the deferral an additional five years. Thus, the permit requirements of Subchapter 8 do not currently apply to area (non-major) sources.

Subchapter 8 requires that the permit specify emissions limitations and standards that constitute applicable requirements, and state-only requirements, and shall include those operational requirements and limitations necessary to assure compliance with all applicable requirements. In addition, the permit shall contain all emissions monitoring and analysis procedures or test methods required under any applicable requirements, and state-only requirements. Where the applicable requirement and state-only requirement does not require periodic testing or instrumental or non-instrumental monitoring (which may consist of recordkeeping designed to serve as monitoring), the permit shall require periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit. However, no specific emission limitation, work practice condition, standard, or criteria is specified in this Subchapter.

The permit assures compliance with this regulation using the following approach:

Conditions included in the permit are developed from applicable requirements for each specific emissions unit covered by the permit. These applicable requirements, and associated monitoring, recordkeeping, and work-practice conditions are listed, by emissions unit, in the permit. In addition, operating and compliance requirements, as well as monitoring and recordkeeping requirements, are specifically addressed in the permit for control devices. A summary is provided in the Authorization to Construct, or Operate, as appropriate.

OAC 252:100-8. Part 7 (Prevention of Significant Deterioration, PSD) **[Not Applicable]**

See Eligibility Section.

OAC 252:100-8. Part 9 (Non-Attainment Areas) **[Not Applicable]**
See Eligibility Section.

OAC 252:100-9 (Excess Emission and Malfunction Reporting) **[Applicable]**
Subchapter 9 requires an owner or operator of a regulated facility to report all excess emissions from an air pollution source caused by malfunction, shutdown, start-up, or regularly scheduled maintenance that is in violation of an applicable air pollution control rule. However, no specific emission limitation, standard, or criteria is specified in this Subchapter.
The permit assures compliance with this regulation using the following approach:
Conditions are included in the Standard Conditions section of this permit, which require prompt reporting to AQD should excess emissions occur.

OAC 252:100-11 (Alternative Emissions Reduction Authorizations) **[Not Applicable]**
See Eligibility Section.

OAC 252:100-13 (Prohibition of Open Burning) **[Applicable]**
Subchapter 13 states that no person shall cause, suffer, allow, or permit open burning of refuse and other combustible material except as may be allowed in compliance with OAC 252:100-13-7. Section 100-13-7 permits open burning as specified in the paragraphs set forth if no public nuisance is or will be created and if the burning is not prohibited by, and is conducted in compliance with, other applicable laws and the ordinances, rules, and orders of governmental entities having jurisdiction, including air pollution control ordinances, rules, and orders. No specific emission limitation or criteria is specified in this Subchapter. However, many work practice conditions and standards are specified.
The permit assures compliance with this regulation using the following approach:
Subchapter 13 applies to all facilities. Therefore, the permit includes a condition that requires compliance with this subchapter. However, most eligible emissions units at chromium electroplating and anodizing facilities have negligible potential to violate any of these requirements. Therefore, no initial compliance demonstrations or continuing monitoring, recordkeeping, or reporting requirements associated with these subchapters are included in the permit. The reporting requirements of OAC 252:100-9 (Excess Emission and Malfunction Reporting) apply.

OAC 252:100-25 (Visible Emissions and Particulates) **[Applicable]**
No discharge of greater than 20% opacity is allowed except for short-term occurrences which consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity.

The permit assures compliance with this regulation using the following approach:
Subchapter 25 applies to all facilities. Therefore, the permit includes a condition that requires compliance with this subchapter. However, most eligible emissions units at chromium electroplating and anodizing facilities have negligible potential to violate any of these requirements. Therefore, no initial compliance demonstrations or continuing monitoring, recordkeeping, or reporting requirements associated with these subchapters are included in the permit. The reporting requirements of OAC 252:100-9 (Excess Emission and Malfunction Reporting) apply.

OAC 252:100-27 (PM Emissions from Industrial and Other Processes) **[Applicable]**

Subchapter 27 requires the control of emissions of particulate matter from any process, operation, or activity except fuel-burning or refuse-burning equipment. The regulation specifies an allowable emission limitation of particulate matter based on the process weight of the source.

The permit assures compliance with this regulation using the following approach:

Subchapter 27 may apply to chromium electroplating and anodizing facilities. Therefore, the permit includes a condition that requires compliance with this subchapter. However, most eligible emissions units at chromium electroplating and anodizing facilities have negligible potential to violate any of these requirements. Therefore, no initial compliance demonstrations or continuing monitoring, recordkeeping, or reporting requirements associated with Subchapter 27 are included in the permit. The reporting requirements of OAC 252:100-9 (Excess Emission and Malfunction Reporting) apply.

OAC 252:100-29 (Fugitive Dust) **[Applicable]**

Subchapter 29 prohibits the handling, transportation, or disposition of any substance or material which is likely to be scattered by the air or wind, or is susceptible to being wind-borne, that would be classified as air pollution, without taking reasonable precautions or measures to minimize atmospheric pollution. Subchapter 29 further prohibits discharge of visible fugitive dust beyond the property line on which the emissions originated in such a manner as to damage or interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or to interfere with the maintenance of air quality standards. However, no specific emission limitation, work practice condition, or criteria is specified in this Subchapter.

The permit assures compliance with this regulation using the following approach:

Subchapter 29 applies to all facilities. Therefore, the permit includes a condition that requires compliance with this subchapter. However, most eligible emissions units at chromium electroplating and anodizing facilities have negligible potential to violate any of these requirements. Therefore, no initial compliance demonstrations or continuing monitoring, recordkeeping, or reporting requirements associated with these subchapters are included in the permit. The reporting requirements of OAC 252:100-9 (Excess Emission and Malfunction Reporting) apply.

OAC 252:100-41 (Hazardous and Toxic Air Contaminants) **[Applicable]**

Subchapter 41 limits the routine emissions of hazardous and toxic air contaminants.

Part 3 addresses hazardous air contaminants. NESHAP, as found in 40 CFR Part 61, are adopted by reference as they existed on July 1, 1998, with the exception of Subparts B, H, I, K, Q, R, T, W and Appendices D and E, all of which address radionuclides. These standards apply to both existing and new sources of hazardous air contaminants. In addition, General Provisions as found in 40 CFR Part 63, Subpart A, and the Maximum Achievable Control Technology (MACT) standards as found in 40 CFR Part 63, Subparts F, G, H, I, L, M, N, O, Q, R, T, U, W, X, Y, CC, DD, EE, GG, II, JJ, KK, OO, PP, QQ, RR, VV and JJJ, are adopted by reference as they existed on July 1, 1998. These standards apply to both existing and new sources of hazardous air contaminants.

Part 5 is a **state-only** requirement which requires all sources to demonstrate that emissions of any toxic air contaminant which exceeds the de minimis level do not cause or contribute to a violation of the MAAC. New sources emitting any category "A" pollutant above the de minimis level are required to install BACT.

The permit assures compliance with this regulation using the following approach:
There are no emissions of any of the regulated pollutants subject to 40 CFR Part 61: arsenic, asbestos, beryllium, benzene, coke oven emissions, mercury, radionuclides or vinyl chloride. MACT standards, and thus Part 3, apply to some facilities covered by the permit, as discussed in the "Federal Regulations" section of this memorandum. This permit restricts eligibility to those facilities emitting less than the de minimis amounts of any Category “A”, “B” or “C” toxic (except for units subject to a MACT standard), unless addressed in an individual permit and carried over to the Authorization to Operate. Thus, Part 5 is not applicable.

OAC 252:100-43 (Sampling and Testing Methods) **[Applicable]**
Part 1 specifies that all required testing must be conducted by methods approved by the Executive Director under the direction of qualified personnel.
Part 3 specifies methods to be used to determine leakage from gasoline truck tanks and associated vapor control systems. However, no specific emission limitation, work practice condition, standard, or criteria is specified in this Subchapter.
The permit assures compliance with this regulation using the following approach:
A standard condition is included which states that all required tests shall be made and the results calculated in accordance with test procedures described or referenced in the permit and approved by Air Quality. Part 3 is not applicable since these facilities do not include gasoline tank truck loading facilities.

OAC 252:100-45 (Monitoring of Emissions) **[Applicable]**
Subchapter 45 outlines the basic requirements for monitoring of emissions and their recording and reporting. The use of any credible evidence in establishing a violation is also addressed. However, no specific emission limitation, work practice condition, standard, or criteria is specified in this Subchapter.
The permit assures compliance with this regulation using the following approach:
Conditions have been included which establish minimum monitoring requirements for control devices associated with emissions units addressed in this permit. In addition, testing is required to be performed as specified in 40 CFR Parts 51, 60, 61, 63, and/or 75, as applicable, unless otherwise specified in an Authorization under this permit.

In summary, the following Oklahoma Air Quality Rules are not applicable on a facility-wide basis to facilities eligible for the General Permit:

OAC 252:100-11	Alternative Emissions Reduction	ineligible*
OAC 252:100-15	Mobile Sources	not a covered source
OAC 252:100-17	Incinerators	not a covered source
OAC 252:100-19	PM from Fuel-Burning Equipment	Emission Unit-Specific
OAC 252:100-21	PM from Wood waste Burning	not a covered source
OAC 252:100-23	Cotton Gins	not a covered source
OAC 252:100-24	Grain Elevators	not a covered source
OAC 252:100-31	Sulfur Compounds	Emission Unit-Specific
OAC 252:100-33	Nitrogen Oxides	ineligible
OAC 252:100-35	Carbon Monoxide	not a covered source
OAC 252:100-37	Organic Materials	Emission Unit-Specific

OAC 252:100-39	Organic Materials - Nonattainment	Emission Unit-Specific
OAC 252:100-41, Part 5	Hazardous & Toxic Air Contaminants	ineligible*
OAC 252:100-43, Part 3	Specific Test Methods	not a covered source

*Ineligible for Authorization to Construct. May be eligible if addressed in an individual permit and carried over into Authorization to Operate.

Federal Regulations

Certain state regulations require compliance with federally promulgated regulations. New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP), established under Sections 111 and 112 of the Federal Clean Air Act, respectively, are incorporated by reference in the State's rules at OAC 252:100-4-5 and 252:100-41-15, respectively. OAC 252:100-7-15(d) and 252:100-8-6(a) require that construction permits include all applicable requirements, including NSPS and NESHAP. In addition, OAC 252:100-8-2, in the definition of "applicable requirement", requires a Part 70 permittee to comply with NSPS, NESHAP, Title IV Acid Rain standards, Compliance Assurance Monitoring requirements, Solid Waste Combustion standards, Federal Ozone Measures for Consumer and Commercial Products, Federal Ozone Measures for Tank Vessels, Stratospheric Ozone standards, and PSD requirements for temporary sources.

Credible Evidence, 40 CFR Part 51 **[Applicable]**

This regulation clarifies that "any credible evidence," including data gathered from means other than the use of a specified "reference test method," can be used in a government or citizen enforcement case to prove an alleged emission limitation violation. Likewise, a facility can rely on any similar data to document compliance, and to make compliance certifications required under Part 70 operating permits.

The permit assures compliance with this regulation using the following approach:

State regulations to implement these requirements have been promulgated into the State Implementation Plan (SIP) under the regulations at OAC 252:100-45 - Monitoring of Emissions. Conditions are included in the Standard Conditions section of the permit to address these requirements.

NESHAP, 40 CFR Part 61 **[Applicable]**

NESHAP Subparts are adopted by reference in OAC 252:100-41-15 as they existed on July 1, 1998, with the exception of Subparts B, H, I, K, Q, R, T, W, and Appendices D and E, all of which address radionuclides. These standards apply to both existing and new sources of these contaminants as defined by the Administrator. They require that no owner or operator shall construct or modify any stationary source subject to a standard without first obtaining written approval from the Administrator of EPA. In addition, certain requirements for exemptions, startup notification, source reporting, waivers, emission tests, and monitoring requirements are specified in these regulations.

The permit assures compliance with this regulation using the following approach:

Eligibility for this permit is restricted to those facilities whose emissions units are not subject to any NESHAP under 40 CFR Part 61, unless incorporated by reference into the Authorization.

NESHAP, 40 CFR Part 63 **[Applicable]**

General Provisions as found in 40 CFR Part 63, Subpart A, and the Maximum Achievable Control Technology (MACT) standards as found in 40 CFR Part 63, Subparts F, G, H, I, L, M, N, O, Q, R, T, U, W, X, Y, CC, DD, EE, GG, II, JJ, KK, OO, PP, QQ, RR, VV and JJJ, are adopted by reference as they existed on July 1, 1998. These Subparts contain standards that regulate specific categories of stationary sources that emit one or more hazardous air pollutants. The standards require all owners or operators of major sources (and certain non-major sources) in certain source categories to install maximum achievable control technology (MACT) unless specifically exempted. These standards may also require the owner or operator of such a source to obtain a Part 70 operating permit.

The permit assures compliance with this regulation using the following approach:

Conditions are included in the facility-wide section of the permit to address the general compliance, performance testing, monitoring, notification, recordkeeping and reporting, and control device requirements under this regulation. Conditions specific to a particular MACT standard are included in the separate sections for each emissions unit that may be determined to be an affected unit. Eligibility for this permit is restricted to those facilities whose emissions units are not subject to any MACT standard other than those listed, unless incorporated by reference into the Authorization.

Chemical Accident Prevention Provisions, 40 CFR Part 68 **[Applicable]**

These regulations apply to stationary sources that have more than a threshold quantity of a regulated toxic substance in a process. They require the owner or operator of such stationary source to submit a single risk management plan to EPA, or their designated agency, by June 21, 1999, or other applicable effective date. The definition of a stationary source does not apply to transportation, including storage incident to transportation, of any regulated substance or any other extremely hazardous substance under the provisions of this part.

The permit assures compliance with this regulation using the following approach:

A standard condition is included in the permit which requires that the permittee, if subject to the provision of Section 112(r) of the Clean Air Act, shall develop a risk management plan and register it with the appropriate agency by June 21, 1999 or the applicable effective date.

Stratospheric Ozone Protection, 40 CFR Part 82 **[Applicable]**

Part 70 sources are subject to any standard or requirement of the Stratospheric Ozone Protection program under Title VI of the CAAA or the regulations promulgated thereunder. These standards require phase-out of Class I & II substances, including provisions to reduce emissions of Class I & II substances to the lowest achievable level in all use sectors, and provisions to maximize the use of recycling and recovery upon disposal, ban use of nonessential products containing ozone-depleting substances, control servicing of motor vehicle air conditioners, and require warning labels on products made with or containing Class I or II substances.

The permit assures compliance with this regulation using the following approach:

Part 70 Facilities which produce, consume, recycle, import, or export any controlled substances or controlled products as defined in 40 CFR Part 82 (Subpart A and C), or perform service on motor (fleet) vehicles which involves ozone-depleting substances (Subpart B) are not eligible for coverage under this permit. All containers in which a class I or class II substance is stored or transported shall be labeled properly (Subpart E).

In summary, the following Federal Regulations are not applicable to facilities eligible for the General Permit:

40 CFR Part 52	Prevention of Significant Deterioration	ineligible*
40 CFR Part 59	Consumer/Commercial Products	not a covered source
40 CFR Part 60	New Source Performance Standards	ineligible*
40 CFR Part 64	Compliance Assurance Monitoring	ineligible
40 CFR Part 82	Protection of Stratospheric Ozone	not a covered source
Title I, CAA	PSD for Temporary Sources	ineligible

*Ineligible for Authorization to Construct. May be eligible if addressed in an individual permit and carried over into Authorization to Operate.

UNIT-SPECIFIC REQUIREMENTS

For brevity, only those applicable requirements that are specific to the particular emissions unit, and not addressed in the Facility-wide requirements, are covered in this section. In addition, the description of the applicable requirement may also be abbreviated, to save space. For a more lengthy description, refer to the description given in the Facility-wide section, or the particular rule.

REQUIREMENTS FOR ELECTROPLATING AND ANODIZING PROCESS LINES

Oklahoma Air Pollution Control Rules

OAC 252:100-41 (Hazardous and Toxic Air Contaminants) [Applicable]
Subchapter 41 limits the routine emissions of hazardous and toxic air contaminants. Part 3 addresses hazardous air contaminants, and adopts by reference NESHAPs, as found in 40 CFR Parts 61 and 63, as they existed on July 1, 1997.
The permit assures compliance with this regulation using the following approach:
There are no emissions of any of the regulated pollutants subject to 40 CFR Part 61: arsenic, asbestos, beryllium, benzene, coke oven emissions, mercury, radionuclides or vinyl chloride. Part 3 applies to some units covered by the electroplating and anodizing section of the permit, since MACT standards established by 40 CFR Part 63 Subpart N cover chromium electroplating and anodizing tanks, as discussed in the "Federal Regulations" section of this memorandum. Specific conditions are included in the permit to require the facility to comply with all applicable requirements of 40 CFR Part 63 Subpart N. Requirements include emissions limits, work practice standards (e.g., operation and maintenance plan, in-house inspections, and specific maintenance practices), initial testing, ongoing monitoring, reporting, and recordkeeping.

Federal Regulations

New Source Performance Standards (NSPS), 40 CFR Part 60 [Not Applicable]
The following NSPS Subparts affect metallurgical operations, but none of these affect electroplating operations.
- Subpart L (Secondary Lead Smelters)
- Subpart M (Secondary Brass And Bronze Ingots)
- Subpart N (Basic Oxygen Furnaces)
- Subpart Na (Secondary Emissions From Basic Oxygen Furnaces)
- Subpart P (Primary Copper Smelters)
- Subpart Q (Primary Zinc Smelters)
- Subpart S (Primary Aluminum Reduction Plants)
- Subpart Z (Ferroalloy Production)
- Subpart AA (Electric Arc Furnaces)
- Subpart AAa (Electric Arc Furnaces And Argon-Oxygen Decarburation Vessels)
- Subpart KK (Lead-Acid Batteries)
- Subpart LL (Metallic Minerals)

The permit assures compliance with this regulation using the following approach:
No permit conditions are included in the permit to address this activity, since the chromium tanks covered by this permit are not subject to NSPS.

NESHAP, 40 CFR Part 63 **[Applicable]**
Subpart N, "Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks," is applicable. Requirements include emissions limits, work practice standards (e.g., operation and maintenance plan, in-house inspections, specific maintenance practices), initial testing, ongoing monitoring, reporting, and recordkeeping. EPA has published a brochure (Publication No. EPA-453/F-95-001, March 1995), which summarizes these requirements.
The permit assures compliance with this regulation using the following approach:
Specific operational conditions are included in the permit which adopt these requirements by reference. Initial and continuing compliance demonstrations are as specified in the NESHAP.

REQUIREMENTS FOR SOLVENT DEGREASING OPERATIONS

Oklahoma Air Pollution Control Rules

OAC 252:100-37 (Volatile Organic Compounds) **[Not Applicable]**
Subchapter 37 includes requirements for facilities that store or transfer organic materials, and for the control of organic solvents associated with coating operations. Subchapter 37 also contains requirements for certain waste gas disposal practices, and for fuel-burning equipment.
The permit assures compliance with this regulation using the following approach:
No permit conditions are included to address the requirements of Subchapter 37, since the solvent degreasing operations covered by this permit would not generally include tanks containing organic materials of sufficient size to be affected by the referenced rule. Therefore, eligibility for this permit is restricted to those facilities that do not have volatile organic liquid storage tanks greater than 400 gallons, unless corresponding requirements from an individual permit are incorporated into the Authorization. Other operations addressed under Subchapter 37 are not included in solvent degreasing operations.

OAC 252:100-39 (Volatile Organic Compounds– Nonattainment Areas) **[Applicable]**
Subchapter 39 controls emissions of organic materials from stationary sources located in nonattainment areas and Air Quality Management Areas (Tulsa and Oklahoma Counties). Emission limitations, design criteria, and work practice standards are specified in the regulation for various sources in Tulsa and Oklahoma Counties. OAC 252:100-39-42 contains detailed requirements for several types of metal cleaning operations that use organic solvents. The requirements include design and operating specifications, and methods for demonstrating compliance.
The permit assures compliance with this regulation using the following approach:
A permit condition incorporating the requirements of OAC 252:100-39-42 is included in the solvent degreasing operations section of the permit. Continuing compliance is demonstrated by requiring that the permittee comply with applicable monitoring and recordkeeping requirements of 40 CFR 63 Subpart T - National Emission Standards for Halogenated Solvent Cleaning and/or OAC 252:100-39-42, as applicable.

OAC 252:100-41 (Hazardous and Toxic Air Contaminants) **[Applicable]**

Subchapter 41 limits the routine emissions of hazardous and toxic air contaminants. Part 3 addresses hazardous air contaminants, and adopts by reference NESHAPs, as found in 40 CFR Parts 61 and 63, as they existed on July 1, 1997.

The permit assures compliance with this regulation using the following approach:

There are no emissions of any of the regulated pollutants subject to 40 CFR Part 61: arsenic, asbestos, beryllium, benzene, coke oven emissions, mercury, radionuclides or vinyl chloride. Part 3 applies to some units covered by the solvent degreasing operations section of the permit, since MACT standards established by 40 CFR Part 63 Subpart T, halogenated solvent cleaning, as discussed in the "Federal Regulations" section of this memorandum. Specific conditions are included in the permit to require the facility to comply with all applicable requirements of 40 CFR Part 63 Subpart T. Requirements include emissions limits, work practice standards (e.g., operation and maintenance, in-house inspections, and specific maintenance practices), initial testing, ongoing monitoring, reporting, and recordkeeping.

Federal Regulations

NESHAP, 40 CFR Part 63 **[Applicable]**

The following MACT Standards are applicable to solvent cleaning operations eligible for coverage under this permit. Facilities with solvent cleaning operations subject to other MACT standards are not eligible for coverage under this permit.

Subpart T, "National Emission Standards for Halogenated Solvent Cleaning," applies to certain solvent cleaning operations. Several construction and operating standards, requirements, and emissions limitations apply to these sources. In addition, certain records and performance tests are required for these facilities.

The permit assures compliance with this regulation using the following approach:

Specific conditions are included in the permit which adopt these requirements by reference. Initial and continuing compliance demonstrations are as specified in the NESHAP.

HEATER AND BOILER REQUIREMENTS

Oklahoma Air Pollution Control Rules

OAC 252:100-19 (PM Emissions from Fuel-Burning Equipment) **[Applicable]**

Subchapter 19 regulates the amount of particulates released into the air by the use of fuel-burning equipment. Fuel-burning equipment are those combustion devices that are used to convert fuel or waste to usable heat or power. This Subchapter specifies a particulate matter (PM) emission limitation of 0.6 lb/MMBTU from new or existing fuel-burning equipment with a rated heat input of 10 MMBTUH or less.

The permit assures compliance with this regulation using the following approach:

The only fuel-burning equipment expected to be present at these facilities, except as a de minimis, or insignificant or trivial activity, is a natural gas- or diesel-fired boiler or heater. Table 1.4-2 of AP-42 (3/98) lists the total PM emissions for natural gas to be 7.6 lb/MMft^3 or about 0.0076 lb/MMBTU, which is in compliance for all heat input ranges. For diesel fuel, Tables 1.3-1 & 1.3-2 of AP-42 (9/98) list TPM emissions of 3.3 lb/10^3 gal or about 0.024 lbs/MMbtu, which

is also in compliance for all heat input ranges. A condition is included in the permit that requires the use of natural gas or diesel with less than 4000 ppm sulfur content for all fuel-burning equipment to ensure compliance with this Subchapter. The compliance demonstration for using natural gas only requires certification in the application that equipment will be fueled by natural gas. The compliance demonstration for using diesel requires a fuel composition analysis be included in the application, and a fuel composition analysis be performed once per load thereafter.

OAC 252:100-31 (Sulfur Compounds) **[Applicable]**

Subchapter 31 requires control of emissions of sulfur compounds from stationary sources. Emission limitations for sulfur dioxide, sulfuric acid mist, hydrogen sulfide, and total reduced sulfur are specified for various equipment.

Sulfur oxides requirements for fuel-burning equipment state that no person shall cause, let, suffer or allow any emission of sulfur dioxide from existing equipment (constructed before July 1, 1972) which results in an ambient air concentration of sulfur dioxide at any given point in excess of 1300 $\mu g/m^3$ (0.50 ppm) in a five (5) minute period of any hour, a one (1) hour average exposure of 1200 $\mu g/m^3$ (0.46 ppm), a three (3) hour average exposure of 650 $\mu g/m^3$ (0.25 ppm), or a 24-hour average exposure of 130 $\mu g/m^3$ (0.05 ppm) of sulfur dioxide contributed from any one source or an annual arithmetic mean of 80 $\mu g/m^3$ (0.03 ppm). No person shall cause, suffer, or allow the discharge into the atmosphere of sulfur oxides measured as sulfur dioxide from new gas fuel-burning equipment in excess of 0.2 pound per million BTU heat input, maximum three-hour average, or from new liquid fuel-burning equipment in excess of 0.8 lbs/MMbtu, maximum three-hour average.

Hydrogen sulfide requirements state that no person shall cause, let, suffer, or allow any emission of hydrogen sulfide from any existing equipment (constructed prior to July 1, 1972) which results in an ambient air concentration of hydrogen sulfide at any given point of 0.1 ppm for a 30-minute period. No person shall cause, let, suffer, or allow any emission of hydrogen sulfide from any new source which results in an ambient air concentration of hydrogen sulfide at any given point of 0.1 ppm for a one-hour period. These limitations shall not apply to ambient air concentrations occurring on the property from which such emission occurs, providing such property, from the emission point to the point of any such concentration, is controlled by the person responsible for such emission.

The permit assures compliance with this regulation using the following approach:

The permit allows fuel-burning equipment (boilers and heaters) to be fueled only with commercial-quality natural gas or with diesel fuel with less than 4000 ppm sulfur content. Contract specifications for commercial-quality natural gas in Oklahoma require a total sulfur content of less than 320 ppm (which is equivalent to approximately 0.032 weight percent) and a hydrogen sulfide content of less than 16 ppm. The total sulfur content of diesel fuel does not typically exceed 0.5 wt % (which is equivalent to approximately 5000 ppm). A typical boiler or heater burning either commercial-quality gas or diesel fuel within these ranges of sulfur content will produce a maximum ambient sulfur oxide concentration of less than 10 $\mu g/m^3$, which is in compliance with the ambient standard. Direct combustion or fugitive emissions of commercial-quality gas with a hydrogen sulfide content of less than 16 ppm will also be in compliance with the ambient standard. Thus, a specific condition has been included in the heaters and boilers section of the permit which requires that heaters and boilers operated under this permit shall be fueled only with diesel with less than 4000 ppm sulfur content, or commercial-quality natural gas. The compliance demonstration for using commercial-quality natural gas requires certification in the application that

heaters and boilers will be fueled only by commercial-quality natural gas. The compliance demonstration for using diesel requires a fuel composition analysis showing total sulfur content be included in the application, and a fuel composition analysis be performed once per load thereafter.

OAC 252:100-33 (Control of Emissions of Nitrogen Oxides) **[Not Applicable]**
See Eligibility Section.

OAC 252:100-37 (Volatile Organic Compounds) **[Applicable]**
Subpart 7 of Subchapter 37, as applied to heaters and boilers, provides that all fuel-burning equipment shall be operated as to minimize emissions of hydrocarbons or other organic materials. The equipment should be operated such that it is not overloaded, that it is properly cleaned and maintained, and that temperature and available air are sufficient to provide essentially complete combustion.
The permit assures compliance with this regulation using the following approach:
Specific conditions are included in the permit which require that the permittee properly operate and maintain heaters and boilers in a manner that will minimize emissions. Operational and maintenance records must be kept to document compliance with this requirement.

Federal Regulations

None are applicable, since permit eligibility is restricted to those heaters and boilers with a capacity less than 10 MMBTUH.

TIER CLASSIFICATION AND PUBLIC REVIEW

Processing of a new General Permit has been classified as Tier II based on OAC 252:2-15-41(c)(1). A request for an Authorization under this General Permit will typically be classified as Tier I, unless a compliance schedule required by OAC 252:100-8-5(d)(8)(C)(iii) is included, in which case it will be classified as Tier II.

DEQ published the "Notice of Tier II Draft Permit" in the *Daily Oklahoman* and the *Tulsa World* on August 30, 1999. The notice stated that the draft permit was available for public review at the AQD office in Oklahoma City and Tulsa, and on the Air Quality section of the DEQ web page at www.deq.state.ok.us. No comments were received during the 30-day comment period.

SUMMARY

Applicants must demonstrate eligibility for coverage under this General Permit and that they are able to comply with applicable air quality rules and regulations. Ambient air quality standards are not threatened at any of the sites eligible for coverage under this General Permit. Issuance of the permit is recommended.