



September 13, 2006

Clerk of the Board
California Air Resource Board
Stationary Source Division,
1001 I Street,
Sacramento, CA 95814

**RE: United Airlines' Comments on ARB's Proposed Amendment to Section 93102:
Hexavalent Chromium Airborne Toxic Control Measure for Chrome Plating and
Chromic Acid Anodizing Operations.**

Dear Clerk of the Board,

Thank you for allowing United Airlines (United) to participate and submit comments to the Air Resource Board (ARB) on the recent draft (8/11/2006) amendment to Title 17, California Code of Regulations, Section 93102 and the information presented in the Staff Report: Initial Statement of Reasons for Proposed Rulemaking.

United has reviewed the proposed draft regulation entitled:

Adoption of the Proposed Amendments to the Hexavalent Chromium Airborne Toxic Control Measure (ATCM) for Chromium Plating and Chromic Acid Anodizing Operations

More Specifically, the **Appendix A Proposed Regulation Order for the Proposed Amendments to the Chromium Plating ATCM**

BACKGROUND

The main intent of the proposed regulation is to limit the emissions of hexavalent chromium resulting from operating chrome plating and chromic anodizing operations. United performs a wide variety of aircraft repair and maintenance at the San Francisco Maintenance Center that would be affected by such regulation. These operations include our hard chromium electroplating line.

Currently, United operates eight hard chromium electroplating tanks. All emissions generated from these process tanks are vented and exhausted through newly installed three-stage composite mesh pad scrubbers. These are individual at-tank scrubbers designed to control particulate (acid mist) matter. These "dry scrubbers" replace the two large centralized counter current wet scrubber – single composite mesh pad and fiberbed mist eliminator combination. The old system was aging and level and costs of ongoing maintenance were just too high.

Comments on the Proposed ATCM - Regulatory Language Changes

An administrative comment. For future regulatory changes, it is suggested that the ARB Staff incorporate a consistent way to date stamp all pages of the documents and to affix in the either the footer or header the title of the document (preferably in 7 or 8 font size), so that the reader would know which version is the most recently published document. Since there were several versions created during the workshops, it would be beneficial to have identified on each page the date. For example the Appendix A Title Page should have under the title, the type of document (i.e., Stakeholder Workshop Draft, ARB Board Proposal), and version number/date (i.e., Version or Draft #1, dated August 11, 2006).

The existing regulation at Title 17, Section 93102 is:

Hexavalent Chromium Airborne Toxic Control Measure for Chromium Plating and Chromic Acid Anodizing Operations.

Why did the ARB staff change the name of the ATCM to:

Airborne Toxic Control Measure (ATCM) for Chromium Plating and Chromic Acid Anodizing Facilities. ?

This naming convention seems to be a departure from other ATCM's where the toxic air contaminant that is regulated is listed in the title. If there were other air toxic emissions generated by chrome plating, then it would be prudent to make the title more broad in nature in such cases. It appears that the title is shifting from an air toxic contaminant emphasis to an industrial process type emphasis.

The title change may cause short-term and perhaps long-term confusion when referencing the regulation, since people are so accustomed to the existing title. There is a potential that individuals may inadvertently pull up the "wrong" version, since the existing version is so integrated among many references including the Internet.

Would the name change affect the regulation's status with respect to federal enforceability or equivalency to the NESHAP Subpart N version? That is, once the ATCM acquires such status it is presumed that the regulation if amended (as long as it is as stringent or more stringent than the current version) would not have to go through the EPA approval process as the ARB did back in 1998.

Section 93102.3(a) Definitions:

For the three facility size definitions at (30) "*Large, hard chromium electroplating facility*"; (35) "*Medium, hard chromium electroplating facility*"; (45) "*Small, hard chromium electroplating facility*" it is recommended that the ARB add "**from all affected tanks**" at the end of the sentence. This would make clarification that the emission ranges specified are from all tanks not just the one tank, since the definition of facility does not indicate this.

Although the end result of the emission limits will do away with the existing limits presented in Section 93102.4(a), we find no value in keeping Table A or B with classifications such as large, medium and small in terms of controlled emissions. If the Staff Report has found that approximately 4 pounds of hexavalent chromium emissions are emitted per year from 228 sources, how is it that a source can still be classified as > 10 lbs/yr controlled for large facilities and the like?

Upon implementation of the amended regulation, and after the effective date has passed, the definitions identified above would no longer be applicable. Does the ARB plan to amend the regulation again at that time? If so, would such an amendment be a public process like this one? Even if future amendments were just administrative in nature (no public participation), should not the ARB's intention or plan be disclosed during this amendment process?

At the definition (36)(A) *Modification*, add an underline to the word "not" in the last sentence of the paragraph to add emphasis to remind the reader that the items listed are exclusionary.

Section 93102.4 Requirements for Existing, Modified and New Hexavalent Chromium Plating and Chromic Acid Anodizing Facilities:

At 93102.4(b) and Table 93102.4, we note that there is a sliding scale on the effective date for existing facilities as the permitted ampere-hours increase. Specifically for Tier 4 facilities, the effective date reverts back to two years, while the Tier 3 facilities get five years after the effective date to comply with reduced emission limitation.

Please explain why does the Tier 4 facility revert back to two years after effective date when the Tier 3 facilities get five years after the effective date to comply with reduced emission limitation? United would like the ARB to consider splitting the Tier 4 group as was done for Tier 3. If there are no Tier 4 facilities less than 100 meters, then Tier 4 group should be assigned the five year period. It is our assumption that most if not all Tier 4 group facilities already use air pollution control equipment to reduce emissions.

At 93102.4(b) and Table 93102.4, where the owner or operator of a facility with actual annual emissions of hexavalent chromium equal to or greater than 15 grams must conduct a site specific analysis.

Please explain the rational behind ARB's use of the annual emission rate of 15 grams as the threshold for having to conduct a site-specific analysis, especially for those facilities that are greater than 100 meters from any sensitive receptor.

If a facility is already complying with the ATCM's most stringent emission limit, please explain why a facility must then have to conduct a site specific analysis?

Please note that in most cases a site-specific analysis is another way of saying that the facility must conduct a site-specific health risk analysis/assessment (HRA) either screening or refined. And that health risk assessments are essentially evaluations for calculating potential population cancer risk and non-cancer risk burdens.

The exercise for conducting a site specific analysis (HRA) in accordance to the Air Toxics Hot Spots program (AB 2588) and the Office of Environmental Health Hazard Assessment's Risk Assessment (OEHHA) Guidelines is much too burdensome (and expensive) a project for facilities to conduct - considering that the facility will have just completed meeting the most stringent requirements with respect to emissions and abatement controls.

For modifications and new facilities, such actions are generally captured during the permitting agency's normal authority to construct or permit to operate procedures. Part of those procedures is to comply with local agency air toxic regulations. In most instances and as part of the agency's permit review process, the agency generally takes the lead on conducting the site-specific analysis to determine if such project falls within acceptable guidelines. If the agency finds that the risks from the project are unacceptable, the facility then has the opportunity to conduct its own refined analysis and can present alternate project scenarios if needed. Since site-specific analyses are usually required by the local permitting agency and under existing State law (i.e., AB 2588) it is unnecessary to incorporate such requirement within a specific ATCM such as this one.

With the advent of AB 2588 (The Air Toxics "Hot Spots" Information and Assessment Act), most local air pollution control districts have conducted the assessments for risks at many if not all facilities that have sources of toxic air contaminants (including chrome plating). If a risk assessment has already been conducted for the facility, then such facilities should be exempt from having to conduct a site specific analysis pursuant to 93102.4.

The ATCM is not clear as to when the site-specific analysis for existing sources would have to be conducted upon determination of the annual emissions exceed 15 grams. Of course, this would not be known until a years' worth of amp-hr data has been collected. And given that it would take time to collect and analyze the data, as well as conduct a site specific analysis, a fair time frame would be within 18 months after determination.

If a facility installs HEPA add-on air pollution control technology to comply with the emission limits set forth in the regulation, then it is unnecessary to conduct a site specific analysis due to the extremely low emission rate. United recommends that the regulation **not** include the requirement to conduct a site-specific analysis if a facility meets implements HEPA technology and meet the 0.0015 mg/amp-hr requirement.

The proposed regulation does not provide any further direction as what to do with the results of the site-specific analysis. Should the results be submitted to CARB or to the local air pollution control district? Should the results remain at the facility and to be submitted only upon request by an authorized agency?

The proposed regulation does not provide guidance as to what is an acceptable or not acceptable result. In this case if we are considering potential cancer risk, what is the acceptable risk to allow for the facility to continue operating, or receive a permit? Is it 25 in a million, 10 in a million or 1 in a million? Since each local air pollution control district has its own criteria, the results for final implementation of the amended ATCM may not be as predicted in the Staff Report.

For the reasons discussed above, we believe it is unnecessary to incorporate any requirement to conduct site specific analysis as part of complying with the emission limits specified in 93102.4 and should be removed.

Of course, if the requirement is to remain in the final adopted version, the requirement to conduct a site-specific analysis is listed as a footnote under Table 93102.4, yet it is called out as a separate item under 93102.4(c) and (d). This tends to understate the ARB's intention to have such an analysis done. It may be best to incorporate this requirement as a separate item to be consistent with the others.

Each of the three statements requiring a site-specific analysis read differently, Table 93102.4 just states that an analysis must be done, but does not direct the owner or operator to perform the analysis. The statement under 93102.4(c)(2) state the owner or operator shall conduct the analysis. The statement under 93102.4(d)(3) state that each new facility shall conduct the analysis. This is inconsistent, if this requirement must remain in the final adopted version, please rephrase to make them consistent.

Furthermore, if the ARB decides to keep the site-specific analysis requirement in the regulation, United further recommends that the regulation require the LAPCD to perform the analysis not the facilities themselves. This is based on the fact that most LAPCDs have established technical and planning divisions that conduct air dispersion modeling and risk evaluations. Since the LAPCDs already have the appropriate dispersion models, receptor grids, local representative meteorology and source information, such an effort would not only be more cost effective, but would allow a more uniform approach that can be better compared across Districts.

[93102.5 Requirements that Apply to Existing, Modified, and new Hexavalent Chromium Plating or Chromic Acid Anodizing Facilities Beginning \[Effected Date\].](#)

Note that this numbered section is also used for ARB's newly adopted Thermal Spray ATCM. It is suggested that the ARB consider reassignment of a Section number to the Thermal Spray ATCM or skip this number within this proposed regulation.

[93102.5\(b\) Environmental Compliance Training. No later than \[Two years after Effective Date\] and within every two years thereafter, the owner or operator of a facility, or personnel designated by the owner or operator that are responsible for maintaining environmental compliance, shall complete an Air Resources Board \(ARB\) Compliance Assistance Training Course.](#)

Although United Airlines previously submitted comments on this section in a letter to the ARB dated August 25, 2006, additional comment is provided as:

This section does not indicate which Compliance Assistance Training Course to take. From our review of the Compliance Assistance Training Course website, it appears that the one-day **Course #290.3 Chrome Plating and Anodizing** would be the appropriate course.

Please verify that this is the intended course that would be required. If so, then United recommends that the course title or number be referenced within the section.

The ARB Compliance Assistance Training website describes Course #290.3, Chrome Plating & Anodizing and indicates the manual used for the training as *Handbook #02-033*. This handbook published by CARB is entitled "*Chrome Plating and Anodizing Operations Self-Inspection Handbook, For Personnel in Chrome Plating and Chromic Acid Anodizing Operations.*"

United reviewed the CARB published booklet and it appears to be simplistic providing general information on air pollution, process information, general health effects and chemical safety and hazards, information on the regulation, requirements and pollution control along with inspection and recordkeeping summary.

The emission limits, control equipment requirements and quarterly inspection portion is basically a synopsis of the requirements already identified in the ATCM, which can be read by anyone for free and not have to pay to attend a course in which the same or similar information will be restated by an instructor.

In addition, the current Handbook references the existing ATCM and not the proposed amendments to the ATCM, does the ARB intend to update the handbook upon promulgation of the final version of the ATCM?, If so, when would the revision be completed?

If an update were intended, would a draft revision of the handbook be available for public comment? This way perhaps the Handbook can be enhanced by introducing actual chrome plater's perspective on related issues.

[93102.5\(b\)\(4\) Nothing in this subsection 93102.5\(b\) shall absolve an owner or operator from complying with this section 93102.](#)

While this statement is meant as a catch all, it is too broad of a statement to be placed where it is proposed. It states the obvious - that it is the general duty of the facility to comply with the regulation.

Such a phrase implies that if for some reason the training doesn't work out, or persons trained are not available at the facility (e.g. training is cancelled, or persons trained are not available due to illness, vacation) that the facility must still comply with the ATCM.

This means that the facility must then have someone not trained to fill in and conduct the required recordkeeping or other compliance task. Essentially the statement says its okay to have someone not trained to do the required tasks as long as compliance is achieved.

United recommends that 93102.5(b)(4) be deleted from the proposed regulation.

93102.5(c) Housekeeping Requirements. Effective [Six months after Effective Date], housekeeping practices shall be implemented to reduce potential fugitive emissions of hexavalent chromium. At a minimum, the following practices shall be implemented:

93102.5(c)(B). Facilities without automated lines.

1. Each electroplated or anodized part must be handled so that excess chromic acid is not dripped outside the electroplating tank.

Due to the intricate shapes of some parts electroplated at United, upon parts pull and rinse, (and after allowing for excess liquid to run back in the plating tank) usually by hoist and during transport to the next process, there is potential for residual chromic acid within a crevice or pocket to spill outside of the tank depending on the angle at which the part is placed. Hence, compliance would be very difficult to maintain on a routine basis. According to the way the subsection is written, one drop outside the tank would be a violation of the regulation. Since excess chromic acid is not defined in the regulation, it is unclear as to whether excess is relative to "normal" amounts of chromic acid dripping or if it means any chromic acid. It is believed that this is not the intent of the regulation to control every drop of chromic acid but to emphasize the effort to reduce potential emission of hexavalent chromium. Therefore, United recommends modifying the section to read:

"Each electroplated or anodized part must be handled so as to minimize excess chromic acid spillage outside the electroplating tank."

2. Each facility spraying down parts over the electroplating or anodizing tank(s) to remove excess chromic acid shall have a splash guard installed around the tank to minimize over-spray and to ensure that any hexavalent chromium laden liquid is returned to the electro-plating or anodizing tank.

This subsection does not provide information as to how high the splash guards need to be or how many sides of the tank must have of splash guards. Will this be at the discretion of the facility? What percentages of facilities have splash guards and what are their configurations.

Based on the type of parts and workflow at United, implementation of splash guards can be an impediment to tank access and to hoist clearance on some of the larger landing gears. For those facilities where splash guards may be impractical, we suggest that the subsection have an added statement, stating that if a splash guard is not feasible, then the owner or operator should rinse each part so as to minimize excess chromic acid spillage outside the electroplating tank.

Since the liquid bath levels within the tank are several inches below the lip of the tank, can the remaining tank freeboard be considered equivalent to splash guard?

93102.5(c)(5) Surfaces within the enclosed storage area, open floor area, walkways around the electroplating or anodizing tank(s), or any surface potentially contaminated with hexavalent chromium, that accumulates or potentially accumulates dust shall be washed down, HEPA vacuumed, hand wiped with damp cloth, or wet mopped, or shall be maintained with the use of non-toxic chemical dust suppressants at least once per week;

Please verify United's interpretation of this subsection. Does a facility have to do all of the following:

1. wash down, HEPA vacuum, hand wipe with damp cloth.

Or instead of item 1:

2. wet mop the area .

Or instead of item 2:

3. use non-toxic chemical dust suppressants.

If a facility complies with 93102.5(c)(1), (2) and (3), then how is it possible to have at the end of each week any liquid or solid accumulation to be cleaned. If the areas are already free of any potential liquid or solid materials, why should a facility go through the burden to clean an area that does not need cleaning? Might this be an example of excessive regulation?

United recommends that 93102.5(c)(5) be deleted from the proposed regulation.

Of course, if the ARB decides to keep this subsection in the final version, then, we recommend modifying the (d)(5)(E) to read:

93102.5(c)(5) Surfaces within the enclosed storage area, open floor area, walkways around the electroplating or anodizing tank(s), or any surface potentially contaminated with hexavalent chromium, in which there is observed accumulation of liquid or solid material shall be cleaned weekly in one or more of the following manner:

- 1. washed down**
- 2. HEPA vacuumed,**
- 3. hand wiped with damp cloth, or wet mopped,**
- 4. Use of non-toxic chemical dust suppressants**

[At Section 93102.6 Special Provisions Enclosed Hexavalent Chromium Electroplating Facilities](#)

Why is the emission limit for hexavalent chromium from covered electroplating tanks expressed in mg/dscm instead of mg/amp-hrs?

93102.7(a)(3) The performance test shall be conducted using one of the approved test methods specified in subsection 93102.7(c). The hexavalent chromium emission rate shall be multiplied by the facility annual permitted ampere-hour usage to determine the annual emissions of hexavalent chromium for the facility.

It appears that the purpose this section is to conduct source testing to demonstrate compliance with the emission limit specified in Table 93102.4. Therefore, the portion that refers to computing facility emissions is not relevant to the demonstration. In fact, the way the regulation states the computation is incorrect for determining actual emissions. Multiplying the emission rate by the facility's annual permitted ampere-hour usage (or maximum allowed) would produce a potential to emit (PTE) calculation.

United recommends that the last sentence of 93102.7(a)(3) be deleted from the proposed regulation.

93102.7(e) Test all emission points. Each emission point subject to the requirements of this regulation must be tested unless a waiver is granted by U.S. EPA, and approved by the permitting agency.

Under what circumstances can a waiver be granted? Does the ARB have any examples of such waivers?

If a facility has multiple stacks of the exact configuration (both process and abatement), can a facility conduct a source test at one exhaust stack to be representative of the remaining exhaust stacks providing certain criteria be met?

Table 93012.10 -- Summary of Inspection and Maintenance Requirements

Under Inspection and Maintenance Requirements column, Item 1, it is suggested that the ARB modify the wording to include "intended performance" as one of the indicators that can be affected.

"1. Visually inspect device to ensure no evidence of chemical attack that affects the structural integrity or intended performance of the device."

Since composite mesh pads require periodic wash downs, such activity should remain as part of the maintenance requirements. Therefore, it is suggested not to delete the reference to composite mesh pads

"4. Perform washdown of the composite mesh-pads in accordance with manufacturer's recommendations and/or add fresh makeup water to the packed bed when it is needed."

Under Inspection and Maintenance Requirements column for High Efficiency Particulate Air (HEPA) filters, the inspection requirement (item 1) to look for changes in the pressure drop appears to be vague. Since pressure drop is covered in Section 93102.9(b), looking for changes in the pressure is not an inspection/maintenance related activity, rather an ongoing monitoring activity – just like the CMP, PBS or fiberbed mist eliminators.

Since there is no requirement to conduct pressure drop evaluations for CMP, PBS or fiberbed mist eliminators, there should not be one for HEPA.

It is recommended that the ARB delete item 1 under the HEPA Inspection and Maintenance Requirements

Supplementary to the comments on Section 93102.4 above:

Based on Table 93102.4(a)(1)(A), for a large facility, >60 million amp-hrs /yr and an emission rate of 0.006 mg/amp-hr, using these data points, United arrives at the following hexavalent chromium emission rate:

$$E = 0.006 \text{ mg/amp-hr} \times 1 \text{ g/1000 mg} \times 1 \text{ lb/ 453.592 g} \times 120,000,000 \text{ amp-hrs/yr} = 1.58 \text{ lbs/yr}$$

Even at 120 million amp-hrs per year, the maximum expected emission is a little over 1 lb. So how can a controlled facility be "large" by exceeding 10 lbs/yr?

On the flip side, a "small" facility identified as <2 lb/yr having an allowable emission rate of 0.15 mg/amp-hr, with an annual rectifier usage of 60 million amp-hrs/yr produces 19.82 lbs/yr. Of course a "small" facility would not come anywhere near 60 million amp-hrs, yet the table has that category/option. In this case, it would appear that a "small" facility would have a maximum rectifier capacity of 2 million amp-hrs/yr to stay just under 2 lbs/yr.

Thank you for your consideration and acceptance of the comments presented above. Please call or e-mail if you require additional information or clarification.

Sincerely,



David Weintraub
Sr. Staff Representative
Environmental Compliance Department
United Airlines San Francisco Maintenance Center
(650) 634-4572
david.weintraub@united.com