

GOVERNMENT OF THE DISTRICT OF COLUMBIA  
Department of Energy and Environment

**CHAPTER 2 TECHNICAL SUPPORT MEMORANDUM**

TO: File

THROUGH: Stephen S. Ours, P.E. *SSO*  
Chief, Permitting Branch

FROM: Olivia Achuko *SSO For OA*  
Environmental Engineer

SUBJECT: **Smithsonian Institution, Hirshhorn Museum and Sculpture Garden  
Permit No. 6902-R1 to Operate One (1) Non-Auto Body Paint Spray Booth**

DATE: March 17, 2021

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**BACKGROUND INFORMATION**

A permit application to operate one non-automotive paint spray booth at the Hirshhorn Museum and Sculpture Garden, 7th Street and Independence Avenue SW, was received by the Air Quality Division ("AQD") of the Department of Energy and Environment ("DOEE" or "the Department") on August 12, 2020. The applicant is the Smithsonian Institution.

The applicant has not requested that any of the information submitted to the Department be held confidential pursuant to 20 DCMR 101.

**TECHNICAL INFORMATION**

The paint booth to be permitted is a cross-draft booth. The activities at this location include paint spraying using High Volume Low Pressure (HVLV) spray guns as well as manual applications using rollers and paint brushes to apply paint. Most of the work is performed on metal, plastic, and wood products. No chemical stripping operations occur at this location. Condition III(a) prohibits the use of chemical strippers that contains methyl chloride if any chemical stripping were to occur.

The paint booth is sparingly used. When there is an exhibit requiring new display pedestals, the booth is operated 4 hours per day for up to two weeks, which occurs approximately three (3) times per year. Approximately once every five years, the booth is operated five to six hours per day for two consecutive weeks.

In this renewal application, a conservative methodology different from the previous application was used to estimate the potential to emit (PTE). The PTE was estimated by tripling historical usage of paint of 2014 and deriving a worse-case generic product, based on the products

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containing the highest VOC content and solids used over the course of the year.

The source indicated that the exhaust stack is less than 15 feet above ground level and less than 5 feet above roof level. The facility requests an exemption from this requirement since the exhaust filters have 99.08 percent capture efficiency and for the fact that the facility has never received a complaint regarding excessive VOC or PM emissions. The previous permit did not contain a stack height requirement and AQD is not proposing to include one in the renewal permit.

Based on the emission calculations provided by the facility, this paint booth has the potential to emit less than five (5) tons per year of each criteria pollutant and total hazardous air pollutants (HAPs).

### **REGULATORY REVIEW**

In developing this permit, the following regulations were evaluated for applicability.

#### 20 DCMR Chapter 2, Section 200: General Permit Requirements

The paint spray booth is a potential air pollution source and a stationary source. The paints contain volatile organic compounds and can release particulate matter, thus a permit from the Department must be obtained to install and operate the equipment.

#### 20 DCMR Chapter 2, Section 205: New Source Performance Standards

There are no NSPS subparts applicable to the paint booth, therefore this regulation is not applicable.

#### 20 DCMR Chapter 2, Section 209: Permit Requirements for Non-Major Stationary Sources (Minor New Source Review)

The potential to emit (approximately 0.20 tons per year of VOCs and less than 0.01 tons per year of particulate matter) is less than the five (5) tons per year threshold for applicability of this regulation. As such, the requirements of this regulation are not applicable.

#### 20 DCMR Chapter 6, Section 606: Visible Emissions

The visible emissions limitations of 20 DCMR 606 are applicable to this facility. Proper operation of the equipment would preclude any visible emissions from being emitted into the outdoor atmosphere from the operation of the paint/spray booth and other equipment at the facility. This more stringent requirement (required by 20 DCMR 201) is contained in Condition II(c).

#### 20 DCMR 700 – Miscellaneous Volatile Organic Compounds (VOCs):

The requirements of 20 DCMR 700 were included in the permit. Because the facility will not be performing activities regulated by other sections of Chapter 7, such as mobile equipment repair and refinishing, most activities occurring in this unit will be regulated under this section. Many

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of the monitoring and record keeping requirements in the permit are designed to document compliance with this section.

#### 20 DCMR 714 – Control Techniques Guidelines (CTGs):

20 DCMR 714 is not applicable to the paint booth since the source does not operate any of the source categories (Miscellaneous Metal Product and Plastic Parts Surface Coatings, Large Appliance Coatings, and Metal Furniture Coatings) specified in 20 DCMR 714.

#### 20 DCMR 715 – Major Source and Case-By-Case Reasonably Available Control Technology (RACT):

20 DCMR 715 is not applicable to the paint booth since the source does not have theoretical potential plant-wide emissions greater than or equal to twenty-five tons per year (25 tpy).

#### 20 DCMR 770 – Miscellaneous Industrial Solvent Cleaning Operations:

Pursuant to 20 DCMR 770.9(h), products used to clean resin, coating, ink, and adhesive mixing, molding, and application equipment, are not subject to 20 DCMR 770. Therefore, 20 DCMR 770 is not applicable to the paint booth.

#### 20 DCMR 771 – Miscellaneous Cleaning and VOC Materials Handling Standards:

20 DCMR 771 is not applicable to the paint booth because the paint booth does not apply coatings, inks, or adhesives to flexible packaging nor is the unit subject to 20 DCMR 770 as discussed above. Therefore, 20 DCMR 771 is not applicable to this unit.

#### 20 DCMR Chapter 9, Section 903: Odorous or Other Nuisance Air Pollutants

“An emission into the atmosphere of odorous or other air pollutants from any source in any quantity and of any characteristic, and duration which is, or is likely to be injurious to the public health or welfare, or which interferes with the reasonable enjoyment of life or property is prohibited [20 DCMR 903.1]” is applicable to all sources. It can be found in Condition II(b) of the permit.

#### 40 CFR 60, Subpart EE – New Source Performance Standard for Surface Coating of Metal Furniture:

This facility is not a “metal furniture surface coating operation”. The activities at this facility include the use of spray guns and aerosol cans for painting as part of exhibit preparation. It is unlikely that any metal furniture is ever painted in this booth. The definition of “surface coating operation” in 40 CFR 60.311 refers to a “surface coating line”, which does not exist in this application.

Based on this analysis, AQD has determined that 40 CFR 60, Subpart EE does not apply to the painting activities at this facility.

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#### **40 CFR 63, Subpart HHHHHH – National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources:**

This Subpart, Subpart HHHHHH (6H) applies to paint stripping and miscellaneous surface coating operations at area sources. This is not applicable to the paint booth at this facility since it does not perform paint stripping using methyl chloride, does not paint motor vehicles or mobile equipment, and does not use coating containing any target HAP. The appropriate permit conditions are included to ensure that none of these activities are undertaken to trigger this regulation.

Although this subpart is not applicable to this source, the facility uses a number of pollution prevention controls to minimize emissions such as utilizing a high-volume low pressure (HVLV) spray guns, paint booth filters with high efficiency and the use of latex water-based coatings that do not need thinner.

### **RECOMMENDATIONS**

The application to operate the paint booth and the attached operating permit comply with all applicable federal and District air pollution control laws and regulations.

The application and draft permit will be posted for public review in the D.C. Register and on the DOEE website on March 26, 2021 and will be available for public comment through April 26, 2021. If no public comments are received, it is recommended that permit No. 6902-R1 be issued. If adverse comments are submitted or a hearing is requested, AQD will consider all comments before determining whether it is appropriate to issue the permit as drafted.

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