

GOVERNMENT OF THE DISTRICT OF COLUMBIA
Department of Energy and Environment

CHAPTER 2 TECHNICAL SUPPORT MEMORANDUM

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

FROM: Abraham T. Hagos *ATH*
Environmental Engineer

SUBJECT: U.S. Department of the Navy, Joint Base Anacostia-Bolling (JBAB)
Permit No. 7269 to Construct and Operate a New Dust Collector at Building 399

DATE: September 5, 2019

BACKGROUND INFORMATION

On August 1, 2019, the Air Quality Division (AQD) received an air permit application from the United States Department of the Navy, Joint Base Anacostia-Bolling (JBAB), to construct and operate a new an ArrestAll AR6-25 dust collector at Building 399, located at 2743 Defense Blvd. SW, Washington DC.

The dust collector will be used to support the operation of woodworking activities. The woodworking operation involves the generation of small wood waste particles (shavings, sander dust, sawdust, etc) by mechanical manipulation of wood, bark, or wood byproducts. Common woodworking operations include sawing, planning, chipping, shaping, molding, lathing, and sanding.

JBAB has not requested that any portions of the application be held confidential.

TECHNICAL INFORMATION

JBAB applied for a permit to construct and operate a new dust collector. The new dust collector is an ArrestAll, Model Number AR6-25, and Serial Number ARS190016. According to the manufacturer's specifications, the unit is a compact and efficient solution to small and medium volume dry dust problems. Also according to the manufacturer's specifications, the unit is designed to control dust from a single source or system, and the unit saves energy by recirculating clean air.

Emission Evaluation

JBAB evaluated emission from the equipment and included that evaluation in the permit application. In computing the worst case particulate matter emissions, it was assumed that woodworking operation will occur for 24 hours per day and 52 weeks per year. The table below

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shows the estimated emissions from the woodworking activities. It is very difficult to estimate emissions from woodworking operations due to their sporadic nature and a limited amount of emission factor data (no appropriate factor is included in AP-42). As such, JBAB assumed four (4) 55-gal (7.3 ft³) containers are accumulated 12 times per year. Per the application, this is extremely conservative estimate by shop personnel. Since the mass of dust collected during the year is not directly known, JBAB calculated the emissions based on the volume collected and the density of the sawdust. The density of sawdust collected by the baghouse was assumed to be an average of 15 lbs per cubic foot. (For a reference of the density of sawdust see Appendix A of the permit application).

Table 1: Estimated Maximum Emissions from Dust Collector

Pollutant	Dust Collector Maximum Emissions	
	lb/year	tons/yr
Total Suspended Particulate Matter (TSP)	5.3	0.002

REGULATORY REVIEW

20 DCMR Chapter 2, Section 200: General Permit Requirements

The dust collector is vented outside, necessitating the need for a construction and operating permit. The provisions of this section are applicable to the dust collector as a stationary source of air pollution. A permit is therefore required to construct and operate the unit pursuant to 20 DCMR 200.1 and 200.2. Operation permits are valid for five years. Upon expiration, they may be renewed to allow for the continued operation of the permitted activity. It is expected that the requirements of the resulting Chapter 2 permit will be incorporated into a Title V operating permit before renewal of this separate permit to construct and operate expires.

20 DCMR Chapter 2, Section 204: Permit Requirements for Sources Affecting Non-Attainment Areas

The review of the Chapter 2 permit application indicated that the proposed equipment would not emit any pollutants other than particulate matter. The maximum annual emission of 5.3 pounds per year of PM is less than the 100 tons per year threshold that would trigger NSR requirements for PM. The proposed project will not generate emission in excess of the significance threshold, and therefore the project would not be considered a new major stationary source or a "major modification" as defined in 20 DCMR 299. Therefore, pursuant to 20 DCMR 204.1, a major non-attainment new source review analysis is not required.

Prevention of Significant Deterioration (PSD) (Federal program)

The project will have a potential to emit (PTE) of less than 250 tpy for all pollutants, thus this project is not subject to the PSD program (implemented by EPA).

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

Subsection 205.1 of 20 DCMR adopts the federal New Source Performance Standards (NSPS) as in effect on September 30, 1997. Additionally, in order to be sufficiently protective of public health pursuant to 20 DCMR 201, the Department places all current NSPS standards, if

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applicable, into all Chapter 2 permits issued. However, there is no applicable NSPS requirement for the dust collector as a control device. Hence, no NSPS requirement is in the permit.

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

The emissions of PM₁₀ (and PM_{2.5}) are expected to be less than 5 tons per year. As such, this section is not applicable.

20 DCMR Chapter 3: Operating Permits and Acid Rain Programs

The project is not subject to the Acid Rain Program. However, the equipment will be part of a larger facility subject to the major source operating permit program of 20 DCMR Chapter 3. As such, pursuant to 20 DCMR 301.1(a)(2), the facility must apply for the requirements of this permit to be placed into its existing Title V operating permit. This requirement is contained in Condition I(g) of the proposed permit.

20 DCMR Chapter 5: Testing, Monitoring and Record keeping Requirements

Testing, monitoring and record keeping requirements, pursuant to 20 DCMR 201 and 500.8, respectively, have been included in the permit documents under Condition IV and Condition V. These requirements are also based on 20 DCMR 200.7.

20 DCMR Chapter 6: Particulates

20 DCMR 603 is applicable to this dust control equipment, thus its requirements have been included. Note, however, that Appendix 6-1 cannot be reasonably applied in the case of a woodworking shop. The requirements apply on a "process weight per hour" basis. Based on the definition of "process weight" in 20 DCMR 199, the weight in question would be the weight of the wood materials being worked. However, in reality, there is no relationship between the weight of a wood object and the amount of sawdust produced from working it. For example, cutting across a "2x4" will produce the same amount of sawdust whether the "2x4" section is one foot long or eight feet long, while there would be an 8-fold difference in weight between the two "materials" being worked. As such, only the default 0.03 gr/dscf standard in 20 DCMR 603.1 is being applied.

20 DCMR 606 is also applicable, however, given the expected particulate matter size from woodworking, any visible emissions at all are observed being emitted from this dust collector are a sign of filter failure. Therefore, the exceptions to the zero percent opacity standard in Section 606.1 have not been included in the permit language and 20 DCMR 201 authority has been cited as the basis for the tightening of the requirement.

20 DCMR Chapter 8: Asbestos, Sulfur, Nitrogen Oxides, and Lead

The fuel sulfur provisions of 20 DCMR 801 are not applicable because the control equipment does not combust fuel and so will not use fuel oil.

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The NOx RACT provision of 20 DCMR 805: (revised regulations promulgated in final form on December 14, 2018) is not applicable to particulate matter. Particulate matter requirements were discussed earlier.

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

The dust collector could discharge emissions during any period of equipment startup, operation or shutdown and as such 20 DCMR 903.1 is applicable. This requirement is contained in the proposed permit.

Other Regulations

Compliance Assurance Monitoring (CAM) (40 CFR 64)

The project is not subject to this Part because the pre-control emissions of pollutants from the equipment are less than 100 tpy of particulate matter.

RECOMMENDATIONS

The draft permit will be published in the D.C. Register and on the Department's website on September 13, 2019 for a thirty-day public comment period.

The proposed project and attached permit comply with all applicable federal and District air pollution control laws and regulations. I recommend that the attached permit be issued promptly following the completion of the public review period if no comments are received. If comments are received, they will be addressed before any final action is taken on the permit application.

SSO/ATH

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