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RE: Comments on Rule 12-13 (Metal Melting and Processing Operations)

Dear Mr. Douglas:

This letter is on behalf of the West Berkeley Alliance for Clean Air & Safe Jobs.

Foundries and Forges have been the subject of numerous community complaints, and these metal melting and recycling facilities represent sources of air pollution that dominated the “pollution-scape” of our neighborhoods. Air pollution in our communities is already at too high a level and interferes with the quality of life of our members and the residents who live nearby. As a community organization, we demand regulations that would improve the environment and tackle the air pollution from these regulated facilities head-on, instead of the “wait and see” approach taken under the proposed regulation.

The proposed Regulation 12-13 relies exclusively on these facilities to self-formulate their pollution controls and does little to minimize the fugitive air pollution from these sources or to protect community health. The latest proposed regulations exclude so many operations and processes that pollution reductions are elusive at best. The proposal belittles the enormous amount of community input that has gone into the process.

The District should instead follow its own objectives, as set forth in the Bay Area 2010 Clean Air Plan (“2010 CAP”), to implement source category specific rules that reduce emissions and risk in impacted communities. The District should ensure that foundries and forges operate in a manner that protects the community from unwanted pollution as well as worker health & safety, including by requiring either the installation of specific pollution control technology or its equivalent, through emission limitations.

We incorporate by reference our previous comments submitted to the District on August 3, 2012, which detailed our concerns that the District has stripped any meaningful control of fugitive emissions from the first draft of this regulation. We also provide additional criticisms – that the proposed regulation improperly relies on limited emission standards found in other District regulations and the NESHAPs to minimize particulate matter and odors from metal melting and recycling facilities. Finally, we are concerned about this rule’s purported

effectiveness to curtail fugitive particulate matter and odor emissions given the extensive exemptions to the regulation, as well as the inability of the District to collect meaningful and readily available information about fugitive emissions from these regulated facilities.

Background

As proposed, Regulation 12-13 purports to require foundries and forges within the District's jurisdiction (1) to develop an Emissions Minimization Plan ("EMP" or "Plan"), and (2) at the same time, to minimize fugitive emissions of particulate matter and odorous substances. While appearing to be sensible requirements, any emission reduction benefits that the proposed rule requires are illusory as "it contain[s] no emissions limits," as the District concedes. *See* Initial Study/Negative Declaration, BAAQMD Draft Regulations 12-13 and 6-4, Feb. 2013 ["Initial Study"], at 2-4. Thus it is unclear how the development of the EMP will limit fugitive emissions. The rule's reliance on the EMP to effectively minimize these emissions arguably maintains the status quo and offers little to no relief to nearby communities impacted by the pollution from these facilities. Moreover, the District incorrectly asserts that current District Regulations and NESHAPs are sufficient to control and minimize the wide variety and types of fugitive particulate matter and odorous emissions from the mold and core processes and activities at permitted foundries and forges.

Emissions from Foundries and Forges

Foundries and forges of all sizes create unnecessary health risks and complication to their neighbors because of the potential of these facilities to release harmful pollutants to the atmosphere through fugitive emissions. Iron and steel foundries have long been recognized as contributors of air pollution. By focusing only on the odors that may come from these facilities, the District attempts to divorce the high risk of associated hazards from the aesthetic impact from odorous substances. However, complaints about odor are only the tip of the iceberg because odorous air often contains other chemicals that are dangerous to health and the environment.

In 2004, the U.S. EPA promulgated rules to control the emission of hazardous air pollutants ("HAPs") from iron and steel foundries, 69 Fed. Reg. 21905 (Apr. 22, 2004), which were amended in 2005 and 2008; *see also* EPA Technology Transfer Network page on Iron and Steel Foundries NESHAP page, <http://www.epa.gov/ttnatw01/ifoundry/ifoundrypg.html>. In promulgating these rules, the agency was concerned with the plethora of organic chemicals emitted from the combined foundry processes, including "acetophenone, benzene, cumene, dibenzofurans, dioxins, formaldehyde, methanol, naphthalene, phenol, pyrene, toluene, triethylamine, and xylene." National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries; Proposed Rule, 67 Fed. Reg. 78274 (Dec. 23, 2002). The agency recognized the importance of regulating these HAPs because "[e]xposure to these substances has been demonstrated to cause adverse health effects, including cancer and chronic or acute disorders of the respiratory, reproductive, and central nervous systems." *Id.*

EPA identified the metal casting activities and the mold and core operations at foundries and forges to be the significant source of these HAP emissions. *Id.* at 78281. These HAPs originate from the binder material in the mold and core sand, producing “benzene, formaldehyde, and toluene,” created by incomplete combustion in the pouring, cooling, and shakeout procedures. *Id.* at 78278. Additionally, during mold and core mixing, forming, and curing, the organic binders will volatilize and escape to the atmosphere, potentially releasing “cumene, formaldehyde, methanol, naphthalene, phenol, and xylene.” *Id.* The chemicals or compounds released are based on the type of binder material used at the facility.

The potential release of these dangerous chemicals into the surrounding environment from foundry and forge operations warrants a stronger regulatory regime that creates limits to the fugitive emissions and fosters greater community control and prosecution when these limits are exceeded. The proposed rule does not accomplish these goals.

Comments and Concerns

Regulating Odors

The proposed regulation defines odorous substances as only “phenols or phenolic compounds.” Regulation 12-13, § 12-13-222. This definition is unnecessarily restrictive and goes against the purported purpose of the Stationary Source Measure 1 (“SSM1”) from the 2010 CAP. 2010 CAP, Vol. 2, p. A-1. Specifically, SSM1 is supposed to “[l]imit emissions of organic compounds, fine particulates, toxic compounds, and odors from foundry operations and metal melting facilities.” 2010 CAP, at pp. 4-1, 4-5, Table 4-1. The need for this control strategy arose from the District’s acknowledgement that limiting fugitive emissions from forges and foundries was necessary “to improve air quality, protect public health, and protect our climate.” CAP, at p. 4-1. In addition to this general need, the District also recognized that SSM1 would be instrumental to controlling emissions from foundries and metal forging facilities,” as part of its implementation actions to reduce the health risk in impacted communities as identified by the Air District’s Community Air Risk Evaluation (“CARE”) program. 2010 CAP, at pp. D-25, D-27.

Unfortunately, the proposed rule excludes all possible odor causing materials, except for phenols or phenolic substances, from the auspices of this rule, excluding from regulation any other organic or synthetic materials used in the mold and core processes that are known to release HAPs during creation or utilization of the molds and cores. Phenols are not the only type of HAPs that can come from the foundry processes; and although dangerous, they are not the most dangerous. Other HAPs potentially generated from the binding chemicals include benzene, formaldehyde, and naphthalene from organic binders, or naphthalenes, styrenes, formaldehydes, glycerines, and other VOCs from using synthetic binders.

By excluding all of these other potential chemicals and compounds from the rule, the district is ignoring its required mandate under the Clean Air Act and the goals of the 2010 CAP and its CARE program to control and minimize pollution from foundries and forges.

Emission Limits

The proposed regulation does not provide any emission standards or limits for particulate matter or odors. A regulation with the purpose of minimizing fugitive emissions and odors must have established emission standards and limitations and some method to determine the level of emissions coming from a facility or activity. In the Staff Report describing the draft Regulation 12, Rule 13, the District explains that it has not included any emission standards because current District Regulations and NESHAPs subparts currently set sufficient limits. However, after careful review of the referenced regulations and standards, this reliance seems inappropriate.

The District relies, in part, on its own regulations, Regulation 6, Rule 1 and Regulation 11, Rule 15, to control fugitive emissions of particulate matter and odor from metal melting facilities. Regulation 6 applies generally to particulate matter and regulation 11 is limited to the emission of toxic metals from non-ferrous metal melting facilities. Neither regulation attempts to control organic emissions contributing to odors and other volatilized toxic chemicals.

The District further states that federal MACT standards affecting foundries should be adequate to minimize fugitive emissions of PM and odorous substances – specifically, Subparts R3, E5, T5, Z5, and Z6 from 40 CFR Part 63. NESHAPs Subparts R3 (Secondary Aluminum Production) and Z6 (Aluminum, Copper, and Other Nonferrous Foundries), like the District’s Regulation 11, Rule 15, only apply to non-ferrous facilities, and Subpart Y5 is specifically applicable to only Electric Arc Furnace Steelmaking Facilities. Additionally, these the emission limits and standards found in these regulations do not apply to odor emissions or to processes that are more likely to produce HAPs and odorous substances, such as mold or core creating, forming, and fixing.

The NESHAPs Subparts that could apply to foundries and forges include Subpart EEEEE (Iron and Steel Foundries) and Subpart ZZZZZ (Iron and Steel Foundries Area Sources). Subpart EEEEE applies only to major sources of HAPs. 40 C.F.R. § 653.7681 (“Your iron and steel foundry is a major source of HAP for purposes of this subpart if it emits or has the potential to emit any single HAP at a rate of 10 tons or more per year or any combination of HAP at a rate of 25 tons or more per year or if it is located at a facility that emits or has the potential to emit any single HAP at a rate of 10 tons or more per year or any combination of HAP at a rate of 25 tons or more per year as defined in § 63.2). It is unclear how many of the 20 facilities that the District has identified, Initial Study at 2-1, are regulated under the NESHAPs.

Furthermore, as it applies to existing (not new) facilities – that is, facilities that we are concerned about – Subpart EEEEE addresses only emissions of total metal HAPs and PM from metal melting and pouring processes; and in a very limited extent to mold and core fixing activities that use triethylamine (TEA). *See* 40 C.F.R. § 63.7690(a). As to new facilities, Subpart EEEEE applies to those that emit HAPs through a conveyance systems during the cooling of sand molds or shakeout lines that use sand molds. *See id.* Notably, this Subpart does not apply to odors and appears to control fugitives emissions in an extremely limited manner (e.g., through opacity), if at all. Therefore, the District’s reliance on this Subpart to control fugitive PM and

odor emissions related to mold and core processes is unfounded: Subpart EEEEE simply would not apply to the types of emissions and processes that the proposed Regulation 12, Rule 13, are intended to address.

Furthermore, while Subpart ZZZZZ applies to area (i.e., “smaller”) sources, but its reach is limited to only binder formulations used in furfuryl alcohol warm box mold or core making. 40 C.F.R. § 63.10886. Again, this federal standard is limited to a specific process and activity and does not provide the breadth of emission limits adequate to minimize all HAPs and odor emissions from mold and core activities at forges and foundries.

Based on the limited applicability of the District’s own Regulations and the incorporated NESHAPs, the District incorrectly asserts that the current District regulations and federal regulations offer effective emission limits to control PM and odor emissions from metal melting and mold and core activities. As shown, these regulations are limited to only two very specific operations as they relate to binders – the use of a TEA catalyst during mold and core curing and furfuryl alcohol warm box mold or core making. The numerous mold and coring processes, or alternative activities, such as Bake molding, No-bake and cold box molding, Green sand molding, or Hot box molding, are effectively left unregulated because they are not covered by district regulations or federal MACT standards.

Exemptions

Proposed Regulation 12 improperly provides an exemption to the rule for facilities that melt only clean metal or alloys or for facilities that melt or heat treat 2,500 tons of metal per 12-month period. This exemption ignores that most, if not all, of the organic HAPs, and odor causing chemicals, come from the organic materials in the binders used in mold and core formation and use. Because this exemption is not based on the use of a non-toxic organic or synthetic binder, or any metric that would relate to odors and HAPs, this type of exemption is unfounded and should be removed. We would also ask the District to identify how many facilities fall under this exemption.

Next, the District’s decision to provide an exemption based on the level of metal melting or heat treating should be justified by some metric that protects the health of the community. The proposed rule offers an exemption to small facilities that melt or heat treat less than 2,500 tons of metal per 12-month period. This amount represents an increase over the exemption limit in the second draft of Regulation 12, Rule 13. The District seems to have set an arbitrary standard based on convenience because it has not provided any justifications for this exemption. Again, any exemption should only be based on a showing that the ability of these covered facilities to meet the requirements of the proposed rule would be economically infeasible.

Emission Factors

We would also like to see the District require regulated facilities to provide an estimated amount of fugitive emissions from their mold and core activities using an emission factor, similar to the requirements when a facility applies for a District permit. *See* Regulation 2, Rule 1, §§ 2-1-428 (requiring emission factor for ministerial permit applications), 2-1-429 (requiring emission factors for nitrogen oxides and volatile organic compounds to satisfy federal emission statements). For example, looking at the BAAQMD permit application for Pacific Steel Casing, Inc. (“PSC”) from February 8, 2001, PSC uses an emission factor to determine its estimated VOC emissions from different sources/processes: sand coating (16 lb VOC / ton of sand coated), shell mold pouring station (0.03 lb VOC / ton of steel processed), cast mold cooling room (0.15 lb VOC / ton of steel processed), shakeout & tray sanding (0.03 lb VOC / ton steel processed), thermal recycling unit (0.00005 lb VOC / ton sand), cast mold shakeout station (0.03 lb VOC / ton of steel processed), mold coating (40 lb VOC / day), and pouring/cooling (0.20 lb / ton of steel processed).

Given that this permit application already contains the information about the activity or production rate for each process, it should be relatively easy to determine the noxious and/or odorous emissions from phenols, naphthalene, formaldehyde, and other odorous pollutants and HAPs. This type of information would be inexpensive to generate, and the informational benefits would allow the District to gather useful information as it decides how to regulate these facilities. In addition, the District would be able to tie a performance metric, in terms of the estimated fugitive emissions of particulate matter and odorous chemicals or compounds, to the emission control technologies used at these facilities and, thus, foster the use of cost-effective emission control technologies at these pollution sources. Given that all forges and foundries track the amount of materials used and their throughput, this information gathering is minimally demanding.

Reporting and Enforcement of Fugitive Emissions

The current reliance on public involvement to report and help control of fugitive emissions from these regulated facilities is untenable. The current paradigm relies on a reactive nuisance control regime that effectively prevents control by placing an unreasonably high burden of proof on the community to prove that harm is accruing, especially in the context of the history of community complaints to this District about the difficulty of having an odor complaint confirmed.

This type of reliance is especially unwarranted because the District has known since the 1980s, when the West Berkeley community brought the odor problem with Pacific Steel to its attention, and the connection between using organic materials and odors is well established.

Accordingly, we would like to see a survey of the materials used by the foundries related to binders, including the main chemical family types and the amounts purchased and utilized in each facility’s ECP. Furthermore, each facility should be required to measure and report the emissions of each potential constituent of concern based on the type of binders used and their

respective fumes and associated chemical emissions. This information should also be available for public review on the District's website.

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