



## Memorandum

To: Jerry Call  
American Foundry Society

From: Chet Thompson  
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Date: September 25, 2007

Re: Applicability of NSPS Subpart UUU to Foundries

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### I. Introduction

In 1992, the U.S. Environmental Protection Agency (“EPA”) promulgated New Source Performance Standards (“NSPS”) for Calciners and Dryers in Mineral Industries (“Subpart UUU”).<sup>1</sup> Subpart UUU applies to calciners and dryers at “mineral processing plants” that “process[] or produce[] . . . industrial sand.”<sup>2</sup> When promulgated, the American Foundry Society (“AFS”) and its members did not believe that the rule applied to foundries given the record’s clear indication that it applied only to facilities within the 17 mineral processing industries identified in the preamble to the final rule. EPA’s Office of Enforcement and Compliance Assurance (“OECA”), however, subsequently took the contrary position that Subpart UUU does apply to foundries that reclaim foundry sand since such reclamation constitutes the “processing” of “industrial sand.” Allegedly at the urging of EPA, several states have adopted the same position.

EPA’s current (albeit flawed) interpretation could inappropriately subject foundries to liability under the Clean Air Act (“CAA”) since many facilities, in reliance on Subpart UUU’s rulemaking record, have not complied with Subpart UUU.<sup>3</sup> There is also concern that facilities subject to permitting under CAA title V

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<sup>1</sup> 40 C.F.R. part 60, subpart UUU; 57 Fed. Reg. 44,503 (September 28, 1992).

<sup>2</sup> 40 C.F.R. § 60.731.

<sup>3</sup> Even assuming *arguendo* that Subpart UUU applies to foundries, most facilities would be exempt from the Subpart’s substantive requirements since they emit less than 11 tons per year of particulate matter. Letter from R. Douglas Neeley, Acting Director, Air, Pesticides, and Toxics Management Division, EPA Region 4 to Dwight Wylie, Office of Pollution Control, Mississippi Department of Environmental Quality (April 3, 2006).

could face liability if their permits do not identify Subpart UUU as an “applicable requirement.”

On behalf if its member companies, AFS requested that we analyze whether Subpart UUU properly applies to foundries that reclaim foundry sand. For the reasons discussed below, it is our legal opinion that Subpart UUU does not apply to foundries and that OECA’s contrary conclusion is erroneous. It is clear from the rulemaking record that Subpart UUU was intended to regulate 17 specific mineral industries that process or produce minerals for distribution or sale, and that the foundry industry is not one of those 17. Notwithstanding this conclusion, however, until EPA adopts a new interpretation, facilities run the risk that EPA will be bring an enforcement action against foundries that do not comply with Subpart UUU. And while a facility could use the arguments set forth in this memorandum as a defense were EPA to bring such an action, there is no guarantee that a court would agree with them.

## II. Background

### A. Legal and Factual Background

Under Section 111 of the CAA, the Administrator must issue standards of performance for categories of sources that cause, or contribute significantly to, air pollution that may reasonably be anticipated to endanger public health or welfare.<sup>4</sup> These standards apply to *new* stationary sources of emissions, meaning sources whose construction, reconstruction, or modification begins after a standard for them is proposed.<sup>5</sup> NSPS must reflect the “best system of emission reduction which . . . the Administrator determines has been adequately demonstrated”<sup>6</sup>

On August 23, 1979, as required by CAA section 111(f), EPA promulgated a priority list of source categories for which NSPS were to be developed.<sup>7</sup> The published list included 59 source categories, listed from 1 to 59. Included as number 17 on the list was “foundries: steel and grey iron.”<sup>8</sup> Also included as numbers 13, 14, 32, 34, 46, and 54 were non-metallic mineral processing; metallic mineral processing; sintering: clay and fly ash; gypsum; brick and related clay products; and perlite, respectively. EPA noted in the preamble to the final listing that “non-metallic mineral processing” included nine subcategories: stone, sand, and gravel, clay, gypsum, borax, fluorspar, phosphate rock mining, and mica mining. Each of these subcategories, including “sand,”—which is the genesis of Subpart

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<sup>4</sup> 42 U.S.C. § 7411.

<sup>5</sup> Id. § 7411(a)(2).

<sup>6</sup> Id.

<sup>7</sup> 44 Fed. Reg. 49,222 (August 21, 1979).

<sup>8</sup> Id. at 49,226.

UUU's inclusion of "industrial sand"— is in the business of producing, processing, and selling non-metallic minerals. That EPA did not consider foundries to be a subcategory of mineral processing is evidenced both by the separate listing for foundries (number 17 on the list), as well as EPA's omission of foundries in its list of subcategories that comprise the non-metallic mineral processing category.

EPA proposed NSPS for calciners and dryers in mineral industries on April 23, 1986. In the preamble, EPA expressly identified the 17 mineral industries "being covered by the [proposed] NSPS," as well as the six main "source categories" (and their corresponding number on EPA's "priority list") to which the identified industries belong or would soon belong.<sup>9</sup> According to the proposal:

*Threat to Public Health and Welfare Posed by Mineral Calciners and Dryers.* The mineral industries being covered by the NSPS already have been shown to be major contributor to air pollution that may reasonably be anticipated to endanger public health or welfare. There are 6 source categories currently listed on the NSPS priority list . . . that include 15 of the 17 mineral industries being covered by the NSPS. **Number 13** on the priority list is **Nonmetallic Mineral Processing**, which includes sand and gravel, clay (ball clay, bentonite, fuller's earth, kaolin), talc, feldspar, diatomite, and vermiculite. **Number 14** on the priority list, **Metallic Mineral Processing**, includes aluminum and titanium. The lightweight aggregate industry (clay, shale, and slate) is **Number 32** on the NSPS priority list. **Numbers 34, 46, and 54** on the priority list are **Gypsum, Brick and Related Clay Products** (fire clay), and **Perlite**, respectively. For the Brick and Related Clay Products source category, only calcining and drying of raw materials prior to firing of the brick are included in this source category.

The two industries covered by the NSPS that are currently not included in the Nonmetallic Mineral Processing or Metallic Mineral Processing source categories listed on the priority list are roofing granules and magnesium compounds. The Agency is proposing to expand these two source categories (**Nos. 13 and 14**) to including roofing granules and magnesium compounds.<sup>10</sup>

Finally, EPA's proposal explained that "[t]he standards [set forth by the proposed rule] would apply to new, modified, and reconstructed calciners and dryers

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<sup>9</sup> 51 Fed. Reg. 15,438, 15,441 (April 23, 1998).

<sup>10</sup> Id. at 15,441.

used in the 17 mineral industries discussed above.”<sup>11</sup> Again, noticeably absent from EPA’s discussion is Number 17 on EPA’s NSPS priority list: foundries.

The Background Information Document (“BID”) that supported the proposed rule also makes clear that EPA did not intend to cover the foundry industry.<sup>12</sup> In particular, the BID states that there were 1,580 facilities within the 17 industrial categories covered by the rule.<sup>13</sup> However, at the time the BID was prepared, there were approximately 4,100 foundries in the United States.<sup>14</sup> Moreover, the BID indicates that covered facilities “typically” recycle the material collected by baghouses and electrostatic precipitators back to the process or sell it directly.<sup>15</sup> That statement reflects the practice of mineral processors that are in the business of manufacturing and selling minerals, include industrial sand, not foundries that use sand as feedstock to make molds.

In 1992, EPA finalized the proposed NSPS for Calciners and Dryers.<sup>16</sup> EPA, consistent with the proposal, announced that Subpart UUU would apply to “calciners and dryers in the mineral industries.”<sup>17</sup> And, again, it explained that “[t]here are six source categories currently listed on the NSPS priority list . . . that include all 17 mineral industries being covered by this NSPS.”<sup>18</sup> The final rulemaking repeatedly states that it affects “the 17 mineral industries.”<sup>19</sup> According to EPA, “These industries were included on the NSPS priority list because of their emissions of particulate matter.”<sup>20</sup> In a supporting document, “Enabling Document for New Source Performance Standards for Calciners and Dryers in Mineral Industries,”<sup>21</sup> EPA lists the 17 mineral industries covered by the rule and their corresponding Standard Industrial Classification (“SIC”) codes. Foundries were not listed nor were any of the foundry SIC codes (*i.e.*, 3321, 3322, 3324, 3325, 3366, and 3369) included on the list.<sup>22</sup>

The text of the final rule also provides language on the scope of the rule. It states, “The affected facility to which the provisions of this subpart apply is each

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<sup>11</sup> Id. at 15,441 (emphasis added).

<sup>12</sup> EPA-450/3-85-025a (October 1985).

<sup>13</sup> Id. Table 9-2.

<sup>14</sup> AFS Metalcasting Forecast and Trends 2005.

<sup>15</sup> EPA-450/3-85-025a (October 1985).

<sup>16</sup> 57 Fed. Reg. 44,496 (September 28, 1992).

<sup>17</sup> 40 C.F.R. § 60.730(a).

<sup>18</sup> 57 Fed. Reg. 44,498.

<sup>19</sup> Id. at 44,496.

<sup>20</sup> Id. at 44,499.

<sup>21</sup> EPA 450/3-91-028.

<sup>22</sup> Id. at Table 5-1.

calciner and dryer at a mineral processing plant.”<sup>23</sup> A “mineral processing plant” is defined to mean “any facility that processes or produces any of the following minerals, their concentrates or any mixture of which the majority (>50 percent) is any of the following minerals or a combination of these minerals: alumina, ball clay, bentonite, diatomite, feldspar, fire clay, fuller’s earth, gypsum, industrial sand, kaolin, lightweight aggregate, magnesium compounds, perlite, roofing granules, talc, titanium dioxide, and vermiculite.”<sup>24</sup>

EPA developed a “sector notebook” for the metal casting industry in 1997, only five years after Subpart UUU was promulgated.<sup>25</sup> EPA’s sector notebook program provides detailed overviews of approximately 32 industrial categories, including basics about the manufacturing processes, the major environmental issues associated with the sector, and statutes and regulations applicable to the sector. EPA states in the Metal Casting notebook that “EPA has not established NSPS for the metal casting industrial category.”<sup>26</sup> This statement is consistent with preambles to the proposed and final Subpart UUU regulation.

## ***B. Background on Subpart UUU Applicability Determinations***

AFS members produce metal castings using molds and cores made from industrial sand. Most facilities recycle their foundry sand as many times as possible since sand is a valuable feedstock. Before sand can be returned to the mold process, it must undergo a thermal reclamation process to remove solid binder material.

EPA Regions 6 issued an applicability determination in 1997 concluding that Subpart UUU applies to foundries.<sup>27</sup> EPA Region 4 followed suit in 2000.<sup>28</sup> As a result of these determinates, AFS, in 2003 and again in 2004, sought clarification from EPA headquarters that Subpart UUU does not apply to foundries and that the

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<sup>23</sup> 40 C.F.R. § 60.730(a).

<sup>24</sup> Id. § 60.731.

<sup>25</sup> EPA Office of Compliance Sector Notebook Project: Profile of the Metal Casting Industry, EPA/310-R-97-004 (1997).

<sup>26</sup> Id. at 108. In contrast, EPA asserts in the Non-Metal Mining Sector Notebook that Subpart UUU’s applies to facilities within the non-metal mining industry. EPA Office of Compliance Sector Notebook Project: Profile of the Non-Fuel, Non-metal Mining, EPA/310-R-95-011 (1995).

<sup>27</sup> Letter to Jon Levett, Air Enforcement Affairs Supervisor, Texas Commission on Environmental Quality from John R. Hepola, Air Toxics and Inspection Coordination Branch, EPA Region 6 (January 30, 1997).

<sup>28</sup> Letter to Jeryl Stewart, Division of Air Pollution Control, Tennessee Department of Environmental Conservation from Douglas Neeley, Air and Radiation Technology Branch, Division of Air Pollution Control, EPA Region 4 (January 5, 2000).

regional determinations were in error. EPA responded to AFS by confirming the earlier regional determinations that foundry sand reclamation is a form of industrial sand processing that triggers Subpart UUU.<sup>29</sup>

According to EPA, industrial sand is a “nonmetallic mineral” under the definition in 40 C.F.R. § 60.731, and “calciners” and “dryers” of any size that “process” nonmetallic minerals are subject to the Subpart UUU.<sup>30</sup> EPA believes that calciners used to recover industrial sand at foundries are, in effect, “processing” the sand according to the literal terms of the rule. In April 2004, EPA determined that the thermal devices used by foundries in their sand reclamation process qualify under Subpart UUU’s literal definition of calciners<sup>31</sup> and dryers<sup>32</sup> because, although the primary purpose of foundry furnaces may be to remove solid binder material from sand grains to reclaim sand, they may also have the effect of removing combined and/or uncombined water.<sup>33</sup> Most recently, in October 2006, EPA Region V indicated that it believes it has legal authority to apply Subpart UUU to “calciners and dryers used for sand reclamation” and “evaporative coolers using a heat source to remove water from sand” located in foundries.<sup>34</sup> None of these determinations were challenged judicially.

### III. Legal Analysis

#### A. *EPA Never Intended to Apply Subpart UUU to Foundries.*

Although EPA has wide latitude to interpret its regulations, it cannot construe them inconsistently with how they were originally intended or to mean something that the regulated community could not possibly have expected it to

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<sup>29</sup> Letter to Gary Mosher, American Foundry Society from Michael Alushin, Compliance Assessment and Media Programs Division, EPA Office of Compliance (October 28, 2003); Letter to Gary Mosher, American Foundry Society from Michael Alushin, Compliance Assessment and Media Programs Division, EPA Office of Compliance (April 29, 2004).

<sup>30</sup> EPA letter to AFS dated October 28, 2003.

<sup>31</sup> Subpart UUU defines a calciner as “the equipment used to remove combined (chemically bound) water and/or gases from mineral material through direct or indirect heating.” 40 C.F.R. § 60.731.

<sup>32</sup> Subpart UUU defines a dryer as “the equipment used to remove uncombined (free) water from mineral material through direct or indirect heating.” 40 C.F.R. § 60.731.

<sup>33</sup> EPA letter AFS dated April 29, 2004.

<sup>34</sup> Letter to Jerry Avery, Michigan Department of Environmental Quality from George Czerniak, Air Enforcement and Compliance Assurance Branch, EPA Region 5 (October 16, 2006).

mean without violating that community's due process rights.<sup>35</sup> Courts have held that if a "violation of a regulation subjects private parties to criminal or civil sanctions, a regulation cannot be construed to mean what an agency intended but did not adequately express."<sup>36</sup> If EPA wants to broaden the scope of one of its regulations, it can do so, but it must first go through notice and comment rulemaking.<sup>37</sup> OECA's current interpretation of Subpart UUU as being applicable to foundries violates these fundamental principles.

When viewed against the backdrop of discussions contained in the preambles to the proposed and final rule, it is clear that OECA's applicability determinations adopt an interpretation that is inconsistent with EPA's intent at the time the rule was promulgated. As discussed above, the rulemaking record for Subpart UUU is clear that EPA intended the rule to apply only certain enumerated mineral industries that process minerals for sale or distribution. The proposed rule identified 17 mineral processing industries, falling within six major "source categories" of particulate emissions, that would be subject to the rule.<sup>38</sup> Foundries are, unequivocally, not one of the industries that were targeted or listed for regulation by the rule. Nowhere in the preamble or the BID did EPA suggest that foundries, downstream users of industrial sand, would be regulated by the NSPS. To the contrary, these documents made clear that foundries were in fact not covered.

In releasing the final rule, EPA again made clear that the agency's action would affect the 17 mineral industries identified as warranting particulate regulation: "[T]his action promulgates standards of performance for calciners and dryers in *mineral industries*, based on the Administrator's determination that calciners and dryers in *the mineral industries* cause or contribute significantly to air pollution . . ."<sup>39</sup> Both EPA's proposed and final rulemaking included discussions of each of the 17 industries singled out for regulation, and nowhere in the rulemaking did EPA suggest that Subpart UUU would apply to foundries, an industry that does not produce or sell industrial sand or other minerals. Thus, although the text of the rule arguably covers thermal devices that are used to recover industrial sand for use at foundries,<sup>40</sup> there is little reason to believe that foundries could have been on notice that they would be subject to the rule.

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<sup>35</sup> *Gonzales v. Oregon*, 126 S.Ct. 904, 914 (2006); *Bowles v. Seminole Rock & sand Co.*, 325 U.S. 410, 414 (1945); *Gen. Elec. Co. V. EPA*, 53 F.3d 1324, 1328 (D.C. Cir. 1995).

<sup>36</sup> *Diamond Roof Co., Inc. v. OSHA Rev. Comm'n*, 528 F.2d 645, 649 (5<sup>th</sup> Cir. 1976).

<sup>37</sup> *Alaska Prof'l Hunters Ass'n, Inc. v. FAA*, 177 F.3d 1030, 1034 (D.C. Cir. 1999).

<sup>38</sup> 51 Fed. Reg. 15438.

<sup>39</sup> 57 Fed. Reg. 44496 (emphasis added).

<sup>40</sup> The rule applies to calciners and dryers at mineral processing plants, and the definition of "mineral processing plant" specifically includes the facilities that

Finally, EPA’s intent not to regulate foundries under Subpart UUU is evident based on the agency’s failure to indicate anywhere in the rulemaking that it would affect the source category to which foundries belong. Indeed, EPA’s rulemaking did make clear that the new rule would apply to six particular source categories on EPA’s “priority list.” The sources actually identified for regulation under Subpart UUU, as well as their associated ranking on EPA’s priority list, included the following: Nonmetallic Mineral Processing (Number 13), Metallic Mineral Processing (Number 14), Lightweight Aggregate (Number 32), Gypsum (Number 34), Brick and Related Clay Products (Number 46), and Perlite (Number 54).<sup>41</sup> Foundries, which are ranked as Number 17 on EPA’s priority list for stationary sources, were *never* identified for particulate regulation in the proposed or final calciner and dryer rule.

For these reasons, we believe that a strong argument exists that Subpart UUU is not applicable to foundries and that the only way EPA could validly expand its scope is to undergo notice and comment rulemaking.

**B. *Application of Subpart UUU To Foundries Achieves No Environmental Benefit, While it Imposes Significant Costs on Foundries.***

Calciners and dryers that are subject to Subpart UUU must generally install and operate a continuous monitoring system to measure the opacity of emissions discharged into the atmosphere from the control equipment used to reduce particulate matter emissions.<sup>42</sup> EPA has determined, however, that owners and operators of calciners and dryers that emit less than 11 tons of particulate matter per year are exempt from Subpart UUU’s monitoring requirements. Accordingly, Subpart UUU specifies several types of calciners and dryers that are exempt from opacity monitoring requirements because their particulate emission rates are known to be less than 11 tons per year.<sup>43</sup> In addition to those calciners and dryers specifically listed in the rule, EPA has indicated that *any* calciner or dryer that demonstrates a particulate emission rate of less than 11 tons per year may also qualify for the monitoring exemption.<sup>44</sup>

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“process” materials such as “industrial sand.” See 40 C.F.R. § 60.731; 40 C.F.R. § 60.731.

<sup>41</sup> 57 Fed. Reg. 44496, 44498 (“There are six source categories currently listed on the NSPS priority list . . . that include all 17 mineral industries being covered by this NSPS”); *see also* 51 Fed. Reg. 15438, 15441.

<sup>42</sup> 40 C.F.R. § 60.734.

<sup>43</sup> Id. § 60.734(c).

<sup>44</sup> Letter to Jeryl W. Stewart, Division of Air Pollution Control, Tennessee Department of Environmental Conservation from Douglas Neeley, Air and

The majority, if not all, of AFS's members emit less than 11 tons of particulate matter emissions per year, and therefore qualify for the exception outlined above. Thus, application of Suppart UUU to foundries would not produce tangible environmental benefits.

#### **IV. Conclusion**

For the reasons discussed above, EPA's determination that Subpart UUU applies to the foundry industry is legally incorrect. The administrative record shows unequivocally that Subpart UUU was not intended to govern foundries, but rather 17 mineral processing sectors that manufacturer and process non-metallic minerals for sale. EPA's *post hoc* expansion of Subpart UUU is inconsistent with this record and principles of due process and administrative law.