



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 0000013

Category: NSPS
EPA Office: Region 6
Date: 02/16/2000
Title: NSPS Subparts LL and UUU
Recipient: Timothy Hall
Author: Hepola, John

Subparts: Part 60, LL, Metallic Mineral Processing Plants
Part 60, UUU, Calciners and Dryers in Mineral Ind.

References: 60.380
60.381
60.730(b)

Abstract:

Q: Is a scrub solids calciner an affected facility for purposes of Subparts LL and UUU?

A: No. The scrub solids calciner is located in a chlorination-oxidation process unit. The scrub solids calciner is not an affected facility for purposes of Subpart UUU because the chlorination-oxidation process is used. Although, the scrub solids calciner may be a thermal dryer rather than a calciner, it is not an affected facility for Subpart LL because it does not precede the operations that produce other products.

Letter:

February 16, 2000

Dr. Timothy Hall
Plant Manager
Louisiana Pigment Company, L.P.
P.O. Box 70
Westlake, LA 70669-0070

Re: Applicability Determination for NSPS Subparts LL and UUU Louisiana Pigment Company, L.P. Westlake, Calcasieu Parish, Louisiana Louisiana Air Permit No. 0520-00142-01

Dear Dr. Hall:

By letter dated January 4, 2000, Louisiana Pigment Company, L.P. (Louisiana Pigment) requested a determination, regarding the applicability of the New Source Performance Standards (NSPS) of Title 40, Code of Federal Regulations (CFR) Part 60, to the scrub solids calciner at its titanium dioxide facility in Westlake, Louisiana. Louisiana Pigment is contending that the scrub solids calciner (Source 88-150) is not an affected source for either NSPS Subpart LL - Standards of Performance for Metallic Mineral Processing Plants nor NSPS Subpart UUU - Standards of Performance for Calciners and Dryers in Mineral Industries.

"Louisiana Pigment uses a chloride process (chlorination-oxidation process) to manufacture titanium dioxide pigment. The scrub solids calciner is not an affected facility for NSPS Subpart UUU. Under section 60.730(b) of NSPS Subpart UUU, the chlorination-oxidation process in the titanium dioxide industry is not subject to the provisions of NSPS Subpart UUU."

The scrub solids calciner may be a thermal dryer rather than a calciner. Thermal dryer is one the types of affected facilities listed in section 60.380 of NSPS Subpart LL. The following definition of metallic mineral processing plant is presented in section 60.381 of NSPS Subpart LL.

"Metallic mineral processing plant means any combination of equipment that produces metallic mineral concentrates from ore. Metallic mineral processing commences with the mining of ore and includes all operations either up to and including the loading of wet or dry concentrates or solutions of metallic minerals for transfer to facilities at non-adjacent locations that will subsequently process metallic concentrates into purified metals (or other products), or up to and including all material transfer and storage operations that precede the operations that produce refined metals (or other products) (emphasis added) from metallic mineral concentrates at facilities adjacent to the metallic mineral processing plant. This definition shall not be construed as requiring that mining of ore be conducted in order for the combination of equipment to be considered a metallic mineral processing plant...."

Since the scrub solids calciner is located in the chloride process unit that manufactures titanium dioxide pigment, it is not an affected facility for NSPS Subpart LL. The scrub solids calciner does not precede the operations that produce other products.

If you have any questions concerning the matters addressed in this letter, please contact Mr. George V. Marusak, of my staff, at (214) 665-8366.

Sincerely yours,
John R. Hepola
Chief
Air/Toxics and Inspection
Coordination Branch

cc: B. J. Pritchard, LDEQ, OEC
Bennett Farrier, LDEQ, OEA
Gerald Quarles, LDEQ Southwest Regional Office



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 0000056

Category: NSPS
EPA Office: Region 4
Date: 01/05/2000
Title: NSPS Applicability to Sand Reclamation Facilities
Recipient: Jeryl Stewart
Author: R. Douglas Neeley

Subjects: Part 60, OOO, Nonmetallic Mineral Processing
Part 60, UUU, Calciners and Dryers in Mineral Ind.

References: 60.731
60.734
60.734(c)

Abstract:

Q: Are furnaces used in sand reclamation facilities at foundries subject to 40 CFR Part, Subpart UUU?

A: Furnaces constructed, reconstructed, or modified after April 23, 1986, would be subject to Subpart UUU because industrial sand is a nonmetallic mineral and the rule does not specify a size or throughput cutoff.

Q: Are all calciners and dryers that emit less than 11 tons of particulate exempt from opacity monitoring requirements under 40 CFR Part, Subpart UUU?

A: Yes. Subpart UUU identifies a number of specific types of calciners and dryers that are exempt from opacity monitoring because their particulate emissions are known to be less than 11 tons per year. In several previous determinations the Agency has extended this exemption to other types of calciners and dryers that emit less than 11 tons of particulate per year.

Q: Are crushing and grinding operations that occur in sand reclamation processes at foundries subject to 40 CFR Part 60, Subpart OOO?

A: The applicability of Subpart OOO to such operations depends upon whether the process is used merely to break up the organic binder that holds the molds together or whether the process also results in size reduction of the sand particles in the mold.

Letter:

4APT-ARB

Mr. Jeryl W. Stewart
Compliance Validation Program
Tennessee Department of Environment and
Conservation
Division of Air Pollution Control
9th Floor, L&C Annex
401 Church Street
Nashville, Tennessee 37243-1531

SUBJ: New Source Performance Standard Applicability to Sand Reclamation Systems
Used in Foundry Operations

Dear Mr. Stewart:

Thank you for your letter of October 19, 1999, in which you asked for determinations regarding the applicability of 40 C.F.R. Part 60, Subpart OOO (Standards of Performance for Nonmetallic Mineral Processing Plants) and 40 C.F.R. Part 60, Subpart UUU (Standards of Performance for Calciners and Dryers in Mineral Industries) to sand reclamation systems used in foundry operations. Based upon our review of the applicability provisions in these regulations, we concur with the following interpretations presented in your letter:

(1) Furnaces used in sand reclamation operations at foundries are subject to Subpart UUU if the furnace is constructed, reconstructed, or modified after the applicability date of the standard (April 23, 1986). The basis for this conclusion is that industrial sand is classified as a nonmetallic mineral under the definitions in 40 C.F.R. Section 60.731, and calciners and dryers of any size that process nonmetallic minerals are subject to the Subpart UUU since size or throughput are not among the criteria considered when determining applicability under this regulation. As noted in your letter, U.S. Environmental Protection Agency (EPA) Region 6, previously determined in 1997 that calciners used in sand reclamation operations at foundries are subject to Subpart UUU.

(2) Owners and operators of calciners or dryers that emit less than 11 tons of particulate per year are exempt from all opacity monitoring requirements in 40 C.F.R. Section 60.734. At the time Subpart UUU was promulgated, EPA had determined that opacity monitoring was unnecessary for affected facilities that emit less than 11 tons of particulate per year, and a list of calciners and dryers that are specifically exempt from opacity monitoring requirements because their particulate emission rates were known to be less than 11 tons per year was promulgated at 40 C.F.R. Section 60.734(c). In several determinations issued following the promulgation of Subpart UUU, EPA has indicated that the exemption in 40 C.F.R. Section 60.734(c) may be extended to any calciner or dryer that has been demonstrated to have a particulate emission rate of less than 11 tons per year. Based upon the precedents established in these previous determinations, we agree with your position that EPA does not need to make a case-by-case determination granting an opacity monitoring exemption to each Subpart UUU facility that emits less than 11 tons of particulate per year. Since the authority to implement Subpart UUU in the state of Tennessee has been delegated to your agency, any company that supplies you with information demonstrating that particulate emissions from their calciner or dryer are less than 11 tons per year would qualify for an opacity monitoring exemption.

(3) Crushing and grinding that occurs in the sand reclamation process would not result in Subpart OOO applicability if these operations are used to break down the organic binder holding the sand in the molds together rather than to crush the sand itself. The basis for this conclusion is that, although industrial sand is classified as a nonmetallic mineral under the definitions in 40 C.F.R. Section 60.671, Subpart OOO is only applicable to operations where crushing or grinding of nonmetallic minerals occurs. Therefore, if the crushing that takes place in the sand reclamation operation separates the sand from the binder that holds the molds together but does not result in a reduction in the size of the sand particles, equipment in the reclamation operation would not be part of a nonmetallic mineral processing line and would not be subject to Subpart OOO.

If you have any questions about the determinations provided in this letter, please contact Mr. David McNeal of the EPA Region 4 staff at (404) 562-9102.

Sincerely,

R. Douglas Neeley
Chief
Air and Radiation Technology Branch Air, Pesticides and Toxics Management Division



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 0000082

Category: NSPS
EPA Office: Region 4
Date: 08/21/2000
Title: Rotary Lime Kilns at Mills Using Soda Pulping Process
Recipient: Jeryl Stewart
Author: R. Douglas Neeley

Subparts: Part 60, HH, Lime Manufacturing Plants
Part 60, UUU, Calciners and Dryers in Mineral Ind.

References: 60.340
60.730
60.731

Abstract:

Q: Will Subpart HH apply to a rotary lime kiln to be used to produce lime at a paper mill which uses the soda pulping process? A dryer will be installed to dry the feed material (lime mud) prior to being calcined in the kiln.

A: No. Because Subpart HH and the background documents for the regulation only relate to the production of lime from limestone and the emission standard is expressed in terms of particulate matter per quantity of "stone feed," Subpart HH will not apply to the kiln. The term "limestone" is not used in the regulation or the background documents to refer to lime mud which is produced in a pulping process.

Q: Will Subpart UUU apply to the new dryer and rotary lime kiln?

A: No. Subpart UUU applies to calciners and dryers at mineral processing plants. Because the definition of a "mineral processing plant" in Sec. 60.731 does not include facilities which produce lime, the dryer and rotary lime kiln will not be subject to Subpart UUU.

Letter:

August 21, 2000

4APT-ARB

Mr. Jeryl Stewart
Compliance Validation Program
Tennessee Division of Air Pollution Control
9th Floor, L & C Annex
401 Church Street
Nashville, Tennessee 37243-1531

SUBJ: New Source Performance Standards, Subparts HH and UUU

Dear Mr. Stewart:

We have received your July 25, 2000, letter requesting applicability determinations regarding New Source Performance Standards (NSPS), Subpart HH (Standards of Performance for Lime Manufacturing Plants) and Subpart UUU (Standards of Performance for Calciners and Dryers in Mineral Industries). In particular, you have requested determinations as to whether these standards will apply to a proposed rotary lime kiln which will be used to produce lime at the Willamette Industries Kingsport plant. As indicated in your letter, Willamette Industries is a paper mill utilizing the soda pulping process, and as part of a plant-wide upgrade, the company proposes to install a new rotary lime kiln at the site. A dryer will be installed to dry feed material (lime mud) prior to processing by the kiln. Based on our review of the regulations and the information you have submitted, which includes a July 20, 2000, letter from Willamette, we have determined that the rotary lime kiln will not be subject to Subpart HH. Since the dryer and lime kiln will not be part of a mineral processing plant, they will not be subject to Subpart UUU.

As described in your letter, the new rotary lime kiln proposed for the Willamette Industries Kingsport plant will convert lime mud (calcium carbonate) from the cooking liquor regeneration process into calcium oxide, for recirculation back into the cooking liquor regeneration process. Willamette has indicated that make-up material will be added to the system in the form of quicklime, and the kiln will not process any form of limestone.

Subpart HH is applicable to each rotary lime kiln used in the manufacture of lime. A rotary lime kiln is defined in Subpart HH as a unit with an inclined rotating drum that is used to produce a lime product from limestone by calcination. As indicated in Sec. 60.340(b), Subpart HH does not apply to facilities used in the manufacture of lime at kraft pulp mills. Lime kilns used at kraft pulp mills are, however, considered affected facilities under NSPS Subpart BB (Standards of Performance for Kraft Pulp Mills), and in Subpart BB a lime kiln is defined as "a unit used to calcine lime mud, which consists primarily of calcium carbonate, into quicklime, which is calcium oxide." As pointed out in your letter, an identical process to that described in the Subpart BB definition of a lime kiln will occur in the rotary lime kiln proposed by Willamette.

The background information document for Subpart HH (EPA Publication No. 450/2-77-007a, April 1977) indicates that "the proposed standards would not apply to lime kilns that process wet lime sludge, such as in kraft pulp mills." The background document indicates that standards of performance for emissions from these sources were proposed in the Federal Register on September 24, 1976 (41 FR 42012). However, neither the background information document nor the Subpart HH regulation specifically mention wet lime sludge from soda pulping processes. Although the rotary lime kiln at Willamette will not be covered by Subpart BB, there is no indication that Subpart HH was intended to apply to the processing of lime mud to regenerate lime in a soda pulping process. The term "limestone" is not used in Subpart HH or in the background documents to refer to lime mud which is produced in a pulping process. The background information document describes the basic process of lime production as consisting of (1) quarrying the limestone raw material, (2) preparing the limestone for kilns by crushing and sizing, (3) calcining the limestone, and (4) processing the quicklime further by hydration.

The particulate matter emission limit in Subpart HH is specified in terms of kilogram per megagram (or pound per ton) of "stone feed," which further implies that the standard was not intended to apply to rotary lime kilns which process lime mud. As discussed in the preamble for the proposed Subpart HH standard (published on May 3, 1977) regarding the use of a concentration versus a mass-per-unit-of-limestone standard, the feed rate of limestone into the kiln at lime manufacturing plants is measured routinely, which allows the emission rate to be calculated directly in terms of "mass-per-unit-of-feed." There is no indication that the standard was intended to apply to facilities which would process a wet lime sludge, which would require a determination of an equivalent stone feed rate.

Subpart UUU applies to calciners and dryers at mineral processing plants. Since the definition of a "mineral processing plant" provided in Sec. 60.731 does not include facilities which produce lime, the dryer and rotary lime kiln proposed by Willamette will not be subject to Subpart UUU.

If there are any questions regarding this letter, please contact Keith Goff of the Region 4 staff at (404)562-9137.

Sincerely yours,

R. Douglas Neeley
Chief
Air and Radiation Technology Branch Air, Pesticides, and Toxics Management Division



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 0200086

Category: NSPS
EPA Office: Region 4
Date: 10/09/2002
Title: Lightweight Aggregate Production Facilities
Recipient: Donald van der Vaart
Author: R. Douglas Neeley

Subparts: Part 60, OOO, Nonmetallic Mineral Processing
Part 60, UUU, Calciners and Dryers in Mineral Ind.

References: 60.670
60.671
60.730
60.731

Abstract:

Q: A facility mines and crushes argillite and then fires it in kilns to produce lightweight aggregate. Are the lightweight aggregate product crushers/grinders, conveyors, screeners, and storage bins which follow the kilns subject to Subpart OOO?

A: Yes. Even if no crushing or grinding takes place after the kilns, the subsequent material handling equipment would still be subject to Subpart OOO as it is part of the nonmetallic mineral production line in which crushing and grinding of raw material takes place. The lightweight aggregate product is a nonmetallic mineral. The facility should also consider the potential applicability of Subpart UUU to specific operations at the facility.

Letter:

Donald van der Vaart, PhD, PE
Supervisor
Air Permits
Division of Air Quality
North Carolina Department of Environment and
Natural Resources
1641 Mail Service Center
Raleigh, North Carolina 27699-1641

Dear Dr. van der Vaart:

We have received your July 22, 2002, letter requesting an applicability determination concerning New Source Performance Standards (NSPS) Subpart OOO - "Standards of Performance for Nonmetallic Mineral Processing Plants." The request relates to a lightweight aggregate manufacturing facility which includes the following processes: raw material mining, raw material crushing, screening, expansion (firing through kilns), product or "clinker" cooling, product crushing, screening, and storage. The raw material used is argillite, which is a form of slate. You have indicated that the initial raw material crushing capacity exceeds the 25 tons per hour (tph) applicability threshold specified in Sec. 60.670(c)(1), so the raw material crushers, grinders, conveyors, screeners, storage bins, etc., located prior to the kilns are subject to Subpart OOO. You have asked whether the product crushers, grinders, conveyors, screener, or storage bins located after the kilns are subject to Subpart OOO. Based on our review of the standard and the information you have supplied, such equipment is subject to Subpart OOO.

As further described in the process description provided by the company, raw material (argillite) for the lightweight aggregate manufacturing process is quarried and processed on-site through a series of crushing and screening operations. The raw material is then processed in one of three lightweight aggregate rotary kilns, where it is heated to temperatures of approximately 1,800o to 2,000o F. At those temperatures, the raw material expands, or bloats, to produce lightweight aggregate clinker. The expanded shale is processed into various construction products on-site through additional crushing and screening operations in the facility finish department. The lightweight aggregate kiln dust is captured in the kiln baghouses and transferred to the facility dust silo.

As indicated in the Subpart OOO background information document (EPA-450/3-83- 001a), nonmetallic mineral processing plants may include various processes such as washing, drying, calcining, or flotation operations, depending on the rock type and desired product. The background information document also discusses the production of lightweight aggregate. There is no indication in the background document that processes associated with the processing of lightweight aggregate would not be subject to the standard for nonmetallic mineral processing plants. Although lightweight aggregate (expanded slate) is structurally different from slate, it is still considered to be chemically equivalent to a nonmetallic mineral. While Subpart OOO does not specifically include lightweight aggregate as a unique category in the definition of a nonmetallic mineral, there is no indication that the intent of Subpart OOO was to differentiate it from naturally occurring slate.

The intent to regulate the processing of lightweight aggregate under Subpart OOO becomes more clear due to language in the preamble of NSPS Subpart UUU - "Standards of Performance for Calciners and Dryers in Mineral Industries." The preamble of the Subpart UUU proposed rule (Federal Register Vol. 51, No. 78, 4/23/86, page 15445) discusses the selection of affected facilities under Subpart UUU. As indicated in the preamble, the definition of affected facility under Subpart UUU was restricted to calciner or dryer process units. The preamble states that - "Selection of other affected facilities for the NSPS was not required because the equipment other than calciners and dryers, i.e., crushers, grinding mills, screening operations, bucket elevators, belt conveyors, bagging operations, storage bins, and enclosed truck or railcar loading stations, is already covered by the metallic and nonmetallic minerals NSPS." Also, while not specifically identified in the Subpart OOO definition of a "nonmetallic mineral," lightweight aggregate is considered a mineral and is identified as such in the Subpart UUU definition of a "mineral processing plant." Although the definition of a "nonmetallic mineral" under Subpart OOO focuses on naturally occurring minerals, the intent of the regulation was to cover all crushing operations at nonmetallic mineral processing plants including crushing operations that follow thermal processes which may have structurally altered the raw materials. Operations in the process you have described such as lightweight aggregate crushers/grinders, belt conveyors, screeners, and storage bins which are located after the kilns used to produce the lightweight aggregate are subject to regulation under Subpart OOO. Even if no crushing or grinding takes place after the kilns, the subsequent material handling equipment would still be subject to Subpart OOO since it is part of the nonmetallic mineral production line in which crushing and grinding of raw material takes place.

In addition to NSPS Subpart OOO, the applicability of NSPS Subpart UUU should also be considered for the facility you have described. As indicated above, Subpart UUU applies to calciners and dryers in a mineral processing plant. A "calciner" is defined in Subpart UUU as equipment used to remove combined (chemically bound) water and/or gases from mineral material through direct or indirect heating, and the definition includes expansion furnaces. The definition of a "mineral processing plant" in Subpart UUU includes facilities that process or produce lightweight aggregate. The kiln in the process you have described which is used for the expansion of argillite would therefore be considered an affected facility under Subpart UUU and would be subject to the requirements of that standard if the owner or operator commenced construction, modification, or reconstruction after April 23, 1986.

To ensure that this determination follows the intent of NSPS Subpart OOO, the determination has been prepared with assistance from the United States Environmental Protection Agency's Office of Enforcement and Compliance Assurance (OECA). If there are any questions regarding this letter, please contact Keith Goff of the Region 4 staff at (404)562-9137.

Sincerely,

R. Douglas Neeley
Chief
Air Toxics and Monitoring Branch Air, Pesticides, and Toxics Management Division

cc: Greg Fried; OECA



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 0300023

Category: NSPS
EPA Office: Region 4
Date: 01/16/2003
Title: Applicability to Expansion Furnace Preheater
Recipient: Brendan Davey
Author: Beverly Banister

Subparts: Part 60, UUU, Calciners and Dryers in Mineral Ind.

References: 60.730(a)
60.731

Abstract:

Q: Is a natural gas-fired preheater, which is used to improve the efficiency of a perlite expansion furnace, subject to Subpart UUU?

A: No. Based on site-specific information provided and the background document for the standard, the preheater described is not functionally equivalent to either a dryer or calciner.

Letter:

January 16, 2003

4APT-ATMB

Brendan Davey
Environmental Engineer
Asheville Regional Office
North Carolina Department of Environment and
Natural Resources
59 Woodfin Place
Asheville, North Carolina 28801-2482

Dear Mr. Davey:

We received from Miller Perlite, LLC the enclosed letter dated November 12, 2002, requesting an applicability determination concerning New Source Performance Standards (NSPS) Subpart UUU - "Standards of Performance for Calciners and Dryers in Mineral Industries." A determination has been requested as to whether a natural gas-fired perlite ore preheater used at the Miller Perlite facility in Morganton, North Carolina is subject to Subpart UUU. Based on our review of the regulation and the information supplied to us, we have determined that the preheater is not an affected facility under Subpart UUU.

The Miller Perlite facility in Morganton, North Carolina, operates a perlite expansion furnace. Miller Perlite purchases raw perlite ore from Grefco Minerals, Inc., an off-site ore processing plant. At Grefco Minerals, Inc., the perlite ore is dried at approximately 300oF to remove moisture before it is received by Miller Perlite. The Miller Perlite facility operates a preheater designed to increase the efficiency of the expansion furnace by reducing the temperature gradient and the retention time in the furnace. The preheater heats the raw perlite in the range of 300oF to 500oF prior to entering the expansion furnace. Expansion of perlite in the furnace occurs between 1,600oF and 1,900oF. Enclosed with this determination is a letter from Grefco Minerals, Inc., dated October 30, 2002, which describes the process used by Miller Perlite and the function of the preheater.

NSPS Subpart UUU applies to calciners and dryers at a mineral processing plant. A "calciner" is defined in Subpart UUU as equipment used to remove combined (chemically bound) water and/or gases from mineral material through direct or indirect heating, and the definition includes expansion furnaces. A "dryer" is defined in the regulation as the equipment used to remove uncombined (free) water from mineral material through direct or indirect heating. While a preheater such as the one used at the Miller Perlite facility is not specifically mentioned in Subpart UUU, the background information document for the standard discusses the use of preheaters at perlite expansion plants. As indicated in the background information document (EPA-450/3-85-025a), it is often necessary to have a preheater attached to the furnace to preheat the raw perlite before being injected into the furnace. The background information document also indicates that preheating the raw perlite reduces the amount of fines produced in the expansion process, which increases usable output and controls the uniformity of product density. When the perlite ore has reached a temperature of 760oC to 980oC (1,400oF to 1,800oF) in the expansion furnace, it begins to soften to a plastic state, and the entrapped combined water is released as steam causing the hot perlite particle to be expanded. While the discussion in the background information document acknowledges the use of preheaters in perlite expansion plants, the document does not imply that preheaters are functionally equivalent to either dryers or calciners or that they should be regulated as dryers or calciners. Based on the discussions in the background document for the standard and the site specific information you have provided concerning the preheater at the Miller Perlite facility, we have determined that the preheater is not subject to Subpart UUU. The expansion furnace would, however, be regulated by Subpart UUU as a calciner, if it was constructed, modified, or reconstructed after April 23, 1986.

This determination has been provided with assistance from the United States Environmental Protection Agency's Office of Enforcement and Compliance Assurance (OECA). If there are any questions regarding this letter, please contact Mr. Keith Goff of the EPA Region 4 staff at (404) 562-9137.

Sincerely,

Beverly H. Banister
Director
Air, Pesticides, and Toxics Management Division

Enclosure

cc: Greg Fried, OECA
Bob Miller, President
Miller Perlite, LLC



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 0400016

Category: NSPS
EPA Office: OECA
Date: 11/18/2003
Title: Subpart OOO and UUU Applicability to Lime Plants
Recipient: Christopher Pilla
Author: Michael Alushin
Comments:

Subparts: Part 60, OOO, Nonmetallic Mineral Processing
Part 60, UUU, Calciners and Dryers in Mineral Ind.

References: 60.671
60.730

Abstract:

Q: Is the processing of lime product at the Greer Lime Company in Riverton, West Virginia subject to 40 CFR part 60, subpart OOO?

A: No, equipment used to process lime product is not subject to New Source Performance Standards (NSPS) subpart OOO.

Q: Is a limestone dryer at the Greer Lime Company in Riverton, West Virginia subject to 40 CFR part 60, subpart UUU?

A: No, limestone is not a listed mineral in the definition of a "mineral processing plant," as defined in section 60.730, and therefore is not subject to NSPS subpart UUU.

Letter:

MEMORANDUM

SUBJECT: New Source Performance Standards Applicability Determination for the Greer Lime Company

FROM: Michael S. Alushin, Director
Compliance Assessment and Media Program Division Office of Compliance

TO: Christopher Pilla, Chief
Air Protection Branch
US EPA Region III

This memorandum is in response to your request for assistance regarding the August 28, 2003, letter from the West Virginia Department of Environmental Protection (WVDEP) requesting an applicability determination of the New Source Performance Standards (NSPS) for Nonmetallic Mineral Processing Plants (Subpart OOO) and for Calciners and Dryers (Subpart UUU), as they apply to processing equipment located at the Greer Lime Company (Greer Lime) in Riverton, West Virginia.

According to WVDEP, Greer Lime operates a lime manufacturing plant with a maximum capacity of 800 tons of limestone per hour or approximately 1.5 million tons of limestone per year. Located at the lime plant is equipment used to crush, grind, screen, convey and dry limestone raw material. Also located at the plant is processing equipment used to crush, grind, screen, and convey lime product following the lime kiln.

Greer Lime is seeking a Title V permit for the plant. In their permit application, Greer Lime asserts that the limestone crushing and grinding operations prior to the lime kiln are the only operations at the plant that are subject to NSPS Subpart OOO. Greer Lime contends that after the limestone is processed through the lime kiln to form lime product, the material no longer meets the definition of a nonmetallic mineral and, therefore, is not subject to NSPS Subpart OOO. Thus, Greer Lime argues that any processing equipment that handles only lime product is not subject to Subpart OOO. Upon review of the NSPS Subpart OOO background documents and previous applicability determinations issued by EPA, we agree that processing equipment that handles only lime product is not subject to NSPS Subpart OOO.

In the Title V permit application, Greer Lime also claims that their rotary dryer is not subject to Subpart UUU requirements because the rotary dryer does not meet the definition of an affected facility. The affected facility is "each calciner or dryer located at a mineral processing plant. . ." 40 CFR Section 60.730. Greer argues that the rotary dryer only dries limestone which is not a listed mineral in the definition of a mineral processing plant. 40 CFR Section 60.730. Based on the information provided by Greer Lime, EPA agrees that the rotary dryer is not subject to NSPS Subpart UUU.

If you have any further questions or concerns, please feel free to contact Gregory Fried of my staff, at (202) 564-7016

cc: Mamie Miller, Office of Compliance
Gregory Fried, Office of Compliance
Andrew Gordon, Office of General Counsel
James Hagedorn, EPA Region 3
Chris Pilla, EPA Region 3
Wayne Green, West Virginia Department of Environmental Protection
Richard Biondi, Associate Director, Air Enforcement Division, Office of Regulatory Enforcement



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 0400017

Category: NSPS
EPA Office: OECA
Date: 10/28/2003
Title: Sand Reclamation at Foundries
Recipient: Gary Mosher
Author: Michael Alushin
Comments: See related determinations filed as ADI Control Nos. 9700071 and 0000056.

Subparts: Part 60, UUU, Calciners and Dryers in Mineral Ind.

References: 60.730
60.731

Abstract:

Q: Are sand reclamation processes located at foundries subject to 40 CFR part 60, subpart UUU?

A: Yes, calciners or dryers used for sand reclamation at a foundry are subject to NSPS subpart UUU.

Letter:

Mr. Gary Mosher
Vice President Environmental Health & Safety
American Foundry Society, Inc.
505 State Street
Des Plaines, Illinois 60016-8399

Re: Applicability of the New Source Performance Standards (NSPS) for Calciners and Dryers in Mineral Industries (Subpart UUU) for the Reclamation Sand Process in the Foundry Industry

Dear Mr. Mosher:

This letter is in response to your request, dated August 1, 2003, for clarification regarding the application of the New Source Performance Standards (NSPS) for Calciners and Dryers in Mineral Industries (Subpart UUU) to the reclamation of spent foundry sand. Specifically, your August 1, 2003, letter requests that the United States Environmental Protection Agency (EPA) revisit an applicability determination issued by EPA Region 4 on January 5, 2000, that determined furnaces used in sand reclamation operations at foundries are subject to NSPS Subpart UUU, to ensure that it is consistent with the standard as promulgated. [Letter from Douglas Neeley, Chief, Air and Radiation Technology Branch, Division of Air Pollution Control to Jeryl W. Stewart, Tennessee Department of Environment and Conservation, Division of Air Pollution Control (4APT-ARB)].

In your August 1, 2003, letter, you argue that the intent of NSPS Subpart UUU, as referenced in several background documents, is to cover calciners and dryers in 17 mineral processing industries, none of which include foundries.

NSPS Subpart UUU applies to any "calciner and dryer at a mineral processing plant." 40 CFR Section 60.730(a). A "mineral processing plant" is defined as:

. . . 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.

40 CFR Section 60.731

Foundry operations are not included in this list of 17 mineral processing industries nor are they listed in the exclusions in 40 CFR Section 60.730(b). However, processing or production of industrial sand is specifically listed in the definition of a mineral processing plant. Moreover, the background information documents for NSPS Subpart UUU indicate that industrial sand is used at foundries. Therefore, EPA concludes that sand reclamation processes co-located at foundries are subject to NSPS Subpart UUU. Based on this finding, we support the Region 4 determination on January 5, 2000, that states calciners used for sand reclamation at foundries are subject to NSPS Subpart UUU. This determination is also consistent with a January 30, 1997, applicability determination issued by EPA Region 6, that found that reclamation of foundry sand is subject to Subpart UUU. [Letter to Jon. K Levett, Air Enforcement Affairs Supervisor, Tyler, TX, from John R. Hepola, Chief, Air Toxics and Inspection Coordination Branch, EPA Region 6, January 30, 1997].

In your August 1, 2003, letter, you further suggest that EPA provide proper rulemaking procedures to revise the subpart to include sand reclamation units at foundries if EPA finds that NSPS Subpart UUU applies. EPA finds that rulemaking is unnecessary as this applicability determination does not extend the scope of NSPS Subpart UUU. This subpart clearly states that the processing of industrial sand is included in the definition of a mineral processing plant. In addition, the background information documents, as well as in your August 1, 2003, letter, acknowledge that industrial sand is manufactured for use at foundries. Thus, the processing of industrial sand at foundries, also referred to as sand reclamation, is already included in NSPS Subpart UUU.

If you have any questions concerning this determination, please contact Gregory Fried at (202) 564-7016.

Very Truly Yours,

Michael S. Alushin, Director Compliance Assessment and Media Programs Division Office of Compliance

cc: David McNeal, EPA Region 4
Mamie Miller, Office of Compliance
Gregory Fried, Office of Compliance
Andrew Gordon, Office of General Counsel
Richard Biondi, Office of Regulatory Enforcement



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 0500025

Category: NSPS
EPA Office: Region 4
Date: 12/14/2004
Title: Processing of Fused Silica
Recipient: Heather Abrams
Author: Beverly Banister
Comments:

Subparts: Part 60, OOO, Nonmetallic Mineral Processing
Part 60, UUU, Calciners and Dryers in Mineral Ind.

References: 60.670(a)(1)

Abstract:

Q: Will 40 CFR part 60, subparts OOO and UUU, apply to a fused silica crucible manufacturing process using grinding mills and dryers and kilns at the Ceradyne facilities in Scottdale and Clarkston, Georgia?

A: No. Because fused silica is not a nonmetallic mineral, the processing of fused silica is not subject to NSPS subparts OOO and UUU.

Letter:

4APT-ATMB

Ms. Heather Abrams
Georgia Department of Natural Resources
Environmental Protection Division
Air Protection Branch
4244 International Parkway, Suite 120
Atlanta, Georgia 30354

Dear Ms. Abrams:

We have received your October 18, 2004, request for a determination concerning the applicability of New Source Performance Standards (NSPS) Subpart OOO - "Standards of Performance for Nonmetallic Mineral Processing Plants" and Subpart UUU - "Standards of Performance for Calciners and Dryers in Mineral Industries." The request relates to a fused silica crucible manufacturing process used at the Ceradyne, Inc. facilities in Scottdale and Clarkston, Georgia. In your letter, a determination is requested as to whether fused silica, which has the same chemical composition as quartz, quartzite, and industrial sand, is considered a nonmetallic mineral under Subparts OOO and UUU. You have also requested a determination as to whether grinding mills used by Ceradyne are affected facilities under Subpart OOO and whether dryers and kilns are affected facilities under Subpart UUU. Based on our review of the regulations and the information you have provided, we have determined that fused silica is not a nonmetallic mineral under Subparts OOO and UUU. Therefore, the grinding mills used by Ceradyne are not subject to Subpart OOO and the dryers and kilns are not subject to Subpart UUU.

As described to us, fused silica is a noncrystalline (amorphous) form of silicon dioxide (SiO₂) and is created from high purity sand that is electric arc melted at extremely high temperatures. Fused silica is described as lacking long-range order in its atomic structure, typical of glass, and its content of SiO₂ is typically 99.7 percent. The fused silica used by Ceradyne is purchased from suppliers. Fused silica pieces received by Ceradyne are emptied from supersacks into grinding mills, where they are combined with water to form a slurry with the solids content of 85 percent. The slurry is ground in a mill, in which grinding balls or slugs reduce the particle size of the silica pieces, to produce a fine slurry. The slurry is then pumped into molds to create a green crucible. Any silica adhering to the mold is sanded loose, and the silica dust is vented to a dust collector. Also, the green crucible is sanded to remove any uneven or rough edges and the silica dust generated is vented to the same dust collector. The green crucibles are dried in a cabinet dryer, and they are then cured in a shuttle kiln for four hours at 2,150°F. Fused silica is described by Ceradyne as having properties of high purity, low thermal expansion, and resistance to thermal shock which are necessary for the crucible product they manufacture.

NSPS Subpart OOO applies to the affected facilities identified in Sec. 60.670(a)(1) which are located in nonmetallic mineral processing plants. A "nonmetallic mineral processing plant" is defined in the standard as any combination of equipment that is used to crush or grind any of the nonmetallic minerals identified in the standard. The affected facility for Subpart UUU is each calciner or dryer at a mineral processing plant. The definition of a "mineral processing plant" is provided in Subpart UUU and includes any facility that processes or produces any one of the minerals listed in the standard, or processes or produces any concentrate or mixture of which the majority (>50 percent) is any of the listed minerals or a combination of those minerals.

Due to the properties of the fused silica received by Ceradyne, we have determined it is a refractory material rather than a nonmetallic mineral for purposes of regulation under NSPS Subparts OOO and UUU. Although the sand which is used to produce fused silica is a nonmetallic mineral under Subparts OOO and UUU, the fused silica produced from the sand is not. The applicability of Subpart OOO to refractory producing plants is discussed in the standard's background information document (EPA-450/3-83-001b; October 1984), which indicates that Subpart OOO will apply only to nonmetallic minerals used as raw materials at

refractory producing plants. The background document indicates the standard does not apply to the process by which finished refractory products are made, since those products generally don't fall under the definition of nonmetallic minerals.

While the term "refractory product" is not defined in NSPS Subparts OOO or UUU, it is defined in 40 CFR Part 63, Subpart SSSS - "National Emission Standards for Hazardous Air Pollutants for Refractory Products Manufacturing." A "refractory product" is defined in that standard as nonmetallic materials containing less than 50 percent carbon by weight and having those chemical and physical properties that make them applicable for structures, or as components of systems, that are exposed to environments above 538°C (1000°F). The definition also indicates that refractory products include, but are not limited to: refractory bricks, kiln furniture, crucibles, refractory ceramic fiber, and other materials used as linings for boilers, kilns, and other processing units and equipment where extremes of temperature, corrosion, and abrasion would destroy other materials. Also, a document supporting the Subpart SSSS regulation entitled "Refractories Manufacturing NESHAP: Industry Profile, Methodology, and Economic Impact Analysis" (March 2001) specifically lists fused silica as a type of refractory. Since the fused silica used by Ceradyne is a refractory and is not a nonmetallic mineral, the processing of fused silica is not regulated by NSPS Subparts OOO or UUU. If a nonmetallic mineral were processed by Ceradyne, the grinding operations described to us would be subject to Subpart OOO and drying and calcining operations would be subject to Subpart UUU.

This determination has been provided with assistance from the Environmental Protection Agency's Office of Enforcement and Compliance Assurance (OECA). If there are any questions regarding this letter, please contact Keith Goff of the Region 4 staff at (404) 562-9137.

Sincerely yours,

Beverly H. Banister
Director
Air, Pesticides, and Toxics
Management Division

cc: Greg Fried, OECA



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 0500052

Category: NSPS
EPA Office: Region 4
Date: 05/06/2005
Title: Alternative Monitoring and Test Waiver for Scrubber
Recipient: Barry Stephens
Author: Beverly Banister
Comments:

Subparts: Part 60, UUU, Calciners and Dryers in Mineral Ind.

References: 60.734(d)
60.735
60.735(b)
60.735(c)(3)
60.736(c)

Abstract:

Q1: Will EPA approve under 40 CFR part 60, subpart UUU, an alternative monitoring procedure for a spray tower scrubber at the Short Mountain Silica facility in Mooresburg, Tennessee? The spray tower will control emissions from a fluidized bed dryer. Rather than measuring the pressure loss of the gas stream through the scrubber and the scrubbing liquid flow rate, the company proposes to monitor the scrubbing liquid supply pressure and flow rate.

A1: Yes. The proposed alternative is acceptable under NSPS subpart UUU. Since there is little pressure drop of the gas stream as it passes through the spray tower, pressure drop is not a good indicator of the spray tower efficiency.

Q2: Will EPA waive the requirement under 40 CFR part 60, subpart UUU, to conduct a performance test for a rotary dryer which serves as a backup for the fluidized bed dryer? The rotary dryer will use the same scrubber used for the fluidized bed dryer, will be used infrequently, and will have half the airflow rate of the fluidized bed dryer.

A2: Yes. A performance test waiver is appropriate under NSPS subpart UUU.

Letter:

4APT-ATMB

Mr. Barry R. Stephens, P.E.
Director
Division of Air Pollution Control
Tennessee Department of Environment & Conservation 9th Floor, L & C Annex
401 Church Street
Nashville, TN 37243-1531

Dear Mr. Stephens:

We have received a request dated April 7, 2005, from Mr. Jeryl Stewart for a determination regarding an alternative monitoring procedure proposed by Short Mountain Silica (SMS) in Mooresburg, Tennessee. SMS dries sand by using a fluidized bed dryer which is subject to New Source Performance Standards (NSPS) Subpart UUU - "Standards of Performance for Calciners and Dryers in Mineral Industries." The request relates to the Subpart UUU monitoring requirements for a wet scrubber used to control particulate emissions from the dryer. Rather than measuring the pressure loss of the gas stream through the scrubber as required by Subpart UUU, the company has proposed to monitor the pressure of the scrubbing liquid going to the scrubber. Based on our review, we have determined the proposed alternative is acceptable. SMS has also requested a waiver from the requirement to conduct a performance test for a rotary dryer which serves as a backup for the fluidized bed dryer. The rotary dryer will use the same scrubber used for the fluidized bed dryer. We have determined that a performance test waiver is appropriate for the rotary dryer.

Owners or operators of affected facilities using a wet scrubber to comply with Subpart UUU are required by Sec. 60.734(d) to install, calibrate, maintain, and operate monitoring devices that continuously measure and record the pressure loss of the gas stream through the scrubber and the scrubbing liquid flow rate to the scrubber. As indicated in the alternative monitoring proposal, the scrubber used by SMS is a spray tower that uses high pressure nozzles which produce water droplets to capture particulate matter in the exhaust stream. The spray tower operates with a lower gas stream pressure drop than the type of scrubber the Subpart UUU monitoring requirements are based upon. Since there is little pressure drop of the gas stream as it passes through the spray tower, pressure drop is not a good indicator of the spray tower efficiency. As an alternative to monitoring the pressure drop of the gas stream through the scrubber and the liquid flow rate as required by Subpart UUU, the company has proposed to monitor the scrubbing liquid supply pressure and scrubbing liquid flow rate to assure continuous compliance. Based on our review, we have determined the proposal is acceptable.

The recordkeeping and reporting requirements of Subpart UUU at Sec. 60.735 will need to be met for the spray tower at SMS. As indicated in Sec. 60.735(c)(3), an exceedance is defined as a daily wet scrubber liquid flow rate that is less than 80 percent or greater than 120 percent of the average value recorded in accordance with Sec. 60.736(c) during the most recent performance test demonstrating compliance. Regarding the liquid supply pressure to the spray tower, the company will need to use a monitoring device which is accurate to within 5 percent

of the design scrubbing liquid supply pressure. An exceedance should be defined as any period in which the scrubbing liquid supply pressure is more than 20 percent below the average value determined in accordance with Sec. 60.736(c) during the most recent performance test demonstrating compliance. The requirement of Sec. 60.735(b) concerning the use of averages over a 2-hour period for each day will apply for the monitoring parameters.

In addition to the fluidized bed dryer (the primary dryer), SMS also has a rotary dryer which is subject to Subpart UUU. The rotary dryer is a backup dryer and will use the same spray tower and stack as the fluidized bed dryer. SMS has requested a waiver from the NSPS requirement for a performance test for the rotary dryer. The company has proposed to use the performance testing and the monitoring parameters established during the testing for the fluidized bed dryer to demonstrate compliance for the rotary dryer. The rotary dryer will be used infrequently, and it has approximately half the airflow rate of the fluidized bed dryer. As indicated in the proposal, if compliance can be demonstrated for the fluidized bed boiler when controlled with the spray tower, it is expected that the rotary dryer would likewise be in compliance. Using the compliance parameters determined from the testing of the fluidized bed dryer would likewise assure compliance of the rotary dryer. We have determined that a waiver from the performance test requirement for the rotary dryer is appropriate.

If there are any questions regarding this letter, please contact Mr. Keith Goff of the Region 4 staff at (404)562-9137.

Sincerely yours,

Beverly H. Banister
Director
Air, Pesticides, and Toxics
Management Division



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 0500056

Category: NSPS
EPA Office: CAMPD
Date: 04/29/2004
Title: Calciner and Dryers in the Reclamation of Foundry Sand
Recipient: Gary E. Mosher
Author: Michael S. Alushin
Comments:

Subparts: Part 60, UUU, Calciners and Dryers in Mineral Ind.

References: 60.731

Abstract:

Q: Are calciners or dryers used in the reclamation of foundry sand subject to NSPS Subpart UUU?

A: Yes. Calciner and dryers used in the reclamation of foundry sand are subject to NSPS Subpart UUU.

Letter:

Mr. Gary E. Mosher
Vice President - Environmental Health & Safety
American Foundry Society, Incorporated
505 State Street
Des Plaines, Illinois 60016-8399

Re: Applicability of the New Source Performance Standards for Calciners and Dryers in Mineral Industries (Subpart UUU) for the Reclamation Sand Process in the Foundry Industry

Dear Mr. Mosher:

This letter is in response to your request, dated January 8, 2004, for an applicability determination regarding the New Source Performance Standards (NSPS) for Calciners and

Dryers in Mineral Industries (Subpart UUU), as they apply to 'calciners' or 'dryers' used in the reclamation of spent foundry sand.

In your January 8, 2004, letter, the American Foundry Society (AFS) claims that 'calciners' and 'dryers' used for sand reclamation at foundries do not meet the definitions of 'calciners' and 'dryers' in 40 CFR Section 60.731 and, therefore, are not subject to NSPS Subpart UUU regulation. NSPS Subpart UUU definitions for 'calciners' and 'dryers' are provided below:

1. Calciner means the equipment used to remove combined (chemically bound) water and/or gases from mineral material through direct or indirect heating. This definition includes expansion furnaces and hearth furnaces.

2. Dryer means the equipment used to remove uncombined (free) water from mineral material through direct or indirect heating.

Specifically, AFS claims that 'calciners' and 'dryers' in sand reclamation processes are used to:

. . . remove and destroy the solid remains of core/mold binder materials from sand grains; these units are NOT operated to remove "combined (chemically bound) water and or gases" or "uncombined (free) water" from the spent foundry sand.

Furthermore, AFS states that:

Although some foundries may in some instances, incidentally remove water from the recycled sands, the primary purpose remains the removal of the solid binder material.

Thus, AFS believes that 'calciners' and 'dryers' in sand reclamation processes are not subject to NSPS Subpart UUU since they do not meet the definitions provided above.

Based on a review of the information provided in your January 8, 2004, letter, the United States Environmental Protection Agency finds that while the primary purpose of the 'calciners' and 'dryers' used in the reclamation of foundry sand may be to remove solid binder materials, that does not exclude them from the definitions of 'calciner' and 'dryer' in 40 CFR Section 60.731. The definitions of 'calciner' and 'dryer' in 40 CFR Section 60.731 do not specify that the primary purpose (emphasis added) must be to remove combined and/or uncombined water.

Review of two foundry sand reports indicate that water content of clay-bonded "green" sand, commonly used in the metal casting industry, is in the range of 2 to 5 percent not including additional water that may exist in the resins and binders. Thus, we believe that the use of 'calciners' and 'dryers' in the reclamation of foundry sand will result in the removal of combined and/or uncombined water. As a result, we believe the 'calciners' and 'dryers' in question do satisfy the definition of 'calciners' or 'dryers' in 40 CFR Section 60.731 and are subject to NSPS Subpart UUU.

If you have any questions concerning this determination, please contact Gregory Fried at (202) 564-7016.

Very truly yours,

s / M. S. ALUSHIN

Michael S. Alushin, Director
Compliance Assessment and Media Programs Division Office of Compliance

cc: David McNeal, EPA Region 4
Mamie R. Miller, Office of Compliance (OC)
Gregory Fried, OC
Richard Vetter, Office of General Counsel
Carol Holmes, Office of Regulatory Enforcement (ORE)
Vishnu Katari, ORE



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 0500077

Category: NSPS
EPA Office: Region 3
Date: 03/04/2003
Title: Kyanite Processing
Recipient: Biesterveld, Matthew D.
Author: Katz, Judy
Comments:

Subparts: Part 60, UUU, Calciners and Dryers in Mineral Ind.

References: 60.737
60.671

Abstract:

Q: Does 40 CFR part 60, subpart UUU, apply to rotary calciners that are used in the production of mullite with kyanite as the raw material at Kyanite Mining Corporation (KMC) facilities?

A: No. NSPS subpart UUU applies to calciners and dryers at "mineral processing plants," i.e., a facility that processes or produces one or more of the seventeen specifically named minerals listed in 40 CFR 60.731, their concentrates, or mixtures which contain greater than 50 percent of any of these listed minerals. EPA understands that silica is formed as a by-product during the kyanite calcining process at KMC in quantities that do not constitute the majority (greater than 50 percent) of any of the minerals processed or produced at KMC.

Letter:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Mr. Matthew D. Biesterveld, P.E.
Environmental Engineer
Commonwealth of Virginia
Department of Environmental Quality
South Central Regional Office
7705 Timberlake Road
Lynchburg, Virginia 24502

Re: NSPS Subpart UUU-Standards of Performance for Calciners and Dryers in Mineral Industries

Dear Mr. Biesterveld,

This is in response to a January 28, 2002 letter received by Mr. Chris Pilla of the United States Environmental Protection Agency (EPA) Region III, from the Virginia Department of Environmental Quality (VADEQ). That letter requests a formal determination by EPA regarding the applicability of New Source Performance Standards (NSPS) 40 CFR Part 60, Subpart UUU- Standards of Performance for Calciners and Dryers in Mineral Industries to rotary calciners used by Kyanite Mining Corporation (KMC). In brief, KMC uses rotary calciners at very high temperatures to convert kyanite ($\text{Al}_2\text{O}_3 \cdot \text{SiO}_2$) to mullite ($3\text{Al}_2\text{O}_3 \cdot \text{SiO}_2$), with some silica (SiO_2) produced as a by-product.

Subpart UUU applies to calciners and dryers at "mineral processing plants" that produce one or more of 17 listed minerals, their concentrates, or mixtures which consist of greater than 50 percent of any of the listed minerals. See 40 C.F.R. 60.731. Neither kyanite nor mullite are among the 17 minerals specifically listed in the definition of "mineral processing plant" in Section 60.731. Kyanite is specifically listed as a nonmetallic mineral in another NSPS regulation, Section 60.671 of 40 CFR Part 60, Subpart OOO-Standards of Performance for Nonmetallic Mineral Processing Plants. Fifteen of the 17 Subpart UUU-listed minerals also appear on the Subpart OOO list. Importantly, a significant number of Subpart OOO-listed minerals, including kyanite, do not appear in the Subpart UUU list. Because the two lists are not co-extensive, we conclude that certain kyanite processing operations are regulated under Subpart OOO, and consequently, we cannot conclude that KMC's kyanite processing facility is regulated under Subpart UUU due to the use and production of kyanite/mullite.

Furthermore, although we agree that several of the 17 specifically named minerals listed in Section 60.731 of Subpart UUU can be generically referred to as "aluminum silicates" (e.g. ball clay, bentonite, etc.) and that both kyanite and mullite are encompassed by the generic term "aluminum silicates," this does not alter the conclusion of the preceding paragraph. The Section 60.731 definition does not have a catchall provision to encompass all kinds of "aluminum silicates" as a regulated generic category of minerals. Significantly, the Section 60.731 definition does regulate some minerals based on generic category terms rather than as more specific types. For instance, Section 60.731 regulates facilities that process the generic category of "magnesium compounds." We therefore believe that only those aluminum silicates specifically listed by name are fairly encompassed by the Subpart UUU list. Neither kyanite nor mullite are listed at Section 60.731.

We also note that the definition in Section 60.731 includes industrial sand (a term which we believe encompasses "silica"). Silica is formed as a by-product during the kyanite calcining process at KMC. However, we understand that silica does not comprises the majority (>50%) of any of the minerals used or produced at KMC (according to the information provided, one metric ton of kyanite yields about 0.88 metric tons of mullite and 0.12 metric tons of silica, i.e., silica comprises about 12% of KMC's production). Therefore, KMC would not meet the Subpart UUU definition of a "mineral processing plant," based on the proportion of silica by-product generated at KMC. Based on the information reviewed, we cannot conclude that 40 CFR Part 60, Subpart UUU applies to the KMC rotary calciners.

This response has been prepared in consultation with the EPA Region III Office of Regional Counsel (ORC), the EPA Office of Air Quality Planning and Standards (OAQPS) , the EPA Office of Enforcement and Compliance Assurance (OECA), and the VADEQ. If you have any questions, please contact Theresa Horgan of my staff at (215) 814-2126.

Sincerely,

Judith M. Katz, Director
Air Protection Division

cc. Mr. David Skelly, Virginia DEQ
Mr. Bill Neuffer, OAQPS
Mr. Gregg Fried, OECA
Mr. Neil Bigioni, Esq., EPA
Ms. Gerallyn Valls, EPA



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 0500084

Category: NSPS
EPA Office: Region 4
Date: 05/22/2003
Title: Alternative Opacity Monitoring
Recipient: Aldridge, Michael
Author: Banister, Beverly
Comments:

Subparts: Part 60, UUU, Calciners and Dryers in Mineral Ind.
Part 60, WWW, Municipal Solid Waste Landfills

Abstract:

Q: Does EPA approve use of an alternative path length correction factor, under 40 CFR part 60, subpart UUU, based on width rather than equivalent diameter for the continuous opacity monitoring system on three rectangular exhaust stacks at the 3M facility in Moncure, North Carolina?

A: Yes. EPA approves this request. EPA finds the alternative path length correction factor is acceptable under NSPS subpart UUU because of the high bias in the opacity data created by using equivalent diameter.

Letter:

Michael Y. Aldridge, Supervisor
Stationary Source Compliance
Division of Air Quality
NC Department of Environment & Natural Resources 1641 Mail Service Center
Raleigh, North Carolina

Dear Mr. Aldridge:

Thank you for your letter of May 2, 2003, which requested a determination regarding a proposal to use an alternative path length correction factor (PLCF) for continuous opacity monitoring systems (COMS) installed on three dryer exhaust stacks at a 3M, Incorporated plant in Moncure, North Carolina. These dryers are subject to 40 CFR Part 60, Subpart UUU (Standards of Performance for Calciners and Dryers in Mineral Industries), and a PLCF must be applied to the opacity monitoring results for each dryer because the COMS for these units are installed in ductwork upstream of the respective exhaust stacks. Each of the three dryers has a rectangular stack, and we concluded that basing the PLCF on the width for each of these stacks would be an acceptable alternative to basing the PLCF on each stack's equivalent diameter. Details regarding the basis for this determination are provided in the remainder of this letter.

In cases where a COMS is installed in a location that has different dimensions than the point where emissions from an affected facility vents to the atmosphere, a PLCF must be applied to the COMS data. This requirement is promulgated in Section 12.7 of 40 CFR Part 60, Appendix B, Performance Specification 1-Specifications and Test Procedures for Continuous Opacity Monitoring Systems in Stationary Sources. Performance Specification 1 incorporates American Society for Testing and Materials (ASTM) Method D6216-98 by reference, and Section 3.2.22.1 in this ASTM method specifies the use of the stack equivalent diameter (i.e., two times the length multiplied by the width divided by the sum of the length and the width) to calculate PLCF for rectangular ducts.

Your May 2, 2003, letter presented information demonstrating that using the equivalent diameter of the rectangular ducts at 3M to calculate the PLCF would result in opacity values that are significantly higher than they would be if PLCF were based upon the stack's path length for U.S. Environmental Protection Agency (EPA) Method 9 readings. This difference in opacity results is due to the fact that Method 9 requires that readings be made approximately perpendicular to the long axis of the duct for rectangular stacks. Since the path length for readings made perpendicular to the long axis of a rectangular stack is equal to the duct's width, the path length for Method 9 readings will always be shorter than the stack's equivalent diameter unless the duct is square. In the case of square ducts, the path length for readings made perpendicular to either axis of the stack will be the same as the path length of the duct's equivalent diameter. Since the opacity of a plume increases as its path length increases, COMS results corrected using the equivalent diameter for a rectangular duct will be higher than those corrected using the path length for Method 9 unless the duct is square.

The three dryers subject to Subpart UUU at 3M are the C&S Dryer, the L1 Dryer, and the L2 Dryer. The dimensions of the C&S Dryer are 24 inches by 39.5 inches, and the dimensions of both the L1 and L2 Dryers are 20 inches by 53.5 inches. Based upon the dimensions of the stack for the C&S Dryer, the calculated opacity using a PLCF based upon the stack's equivalent diameter would be 15.3 percent when the calculated opacity using a PLCF based upon the stack's Method 9 path length is equivalent to the applicable standard (i.e., 10 percent) under Subpart WWW. Based upon the dimensions of the stacks for the L1 and L2 Dryers, the calculated opacity using a PLCF based upon the stacks' equivalent diameter would be 14.2 percent when the calculated opacity using a PLCF based upon the stacks' Method 9 path length is 10 percent. Therefore, opacity results will be biased high by between 42 and 53 percent compared to corresponding Method 9 results at the level of the applicable standard if the PLCF used to correct opacity data at 3M is based upon the equivalent diameter of the company's dryer

stacks.

If a PLCF based upon the equivalent diameter for the dryer stacks at 3M is used to correct opacity data, the high bias in the results relative to corresponding Method 9 readings would cause the company to report opacity excess emissions in some circumstances where the opacity at the stack exit is actually below the applicable standard. If a PLCF based upon the width of the dryer stacks at 3M is used to correct opacity data, there would be no high bias in the results relative to Method 9 readings, and avoiding this high bias would prevent the over-reporting of excess emissions. By eliminating this high bias in opacity results, it would be easier to cite COMS data as credible evidence of opacity violations at 3M's Moncure plant if the PLCF is based upon width of the company's rectangular exhaust stacks. Therefore, basing the PLCF on the Method 9 path length for the rectangular stacks at 3M would be an acceptable alternative to using the stacks' equivalent diameter to calculate the PLCF.

If you have any questions about the determination provided in this letter, please contact Mr. David McNeal of the EPA Region 4 staff at (404) 562-9102.

Sincerely,

Beverly H. Banister
Director
Air, Pesticide and Toxics



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 0500123

Category: NSPS
EPA Office: Region 4
Date: 05/06/2005
Title: Alternative Monitoring Plan for Fluidized Bed Dryer
Recipient: Stephens, Barry R.
Author: Banister, Beverly H.
Comments:

Subparts: Part 60, UUU, Calciners and Dryers in Mineral Ind.

References: 60.734(d)
60.735
60.735(b)
60.735(c)(3)
60.736(c)

Abstract:

Q1: Does EPA approve an alternative monitoring procedure, under 40 CFR part 60, subpart UUU, for a spray tower scrubber at the Short Mountain Silica Company in Mooresburg, Tennessee?

A1: Yes. EPA approves the proposed alternative under NSPS subpart UUU to monitor the scrubbing liquid supply pressure and scrubbing liquid flow rate rather than measuring the pressure loss of the gas stream through the scrubber and the scrubbing liquid flow rate. Because there is little pressure drop of the gas stream as it passes through the spray tower, pressure drop is not a good indicator of spray tower efficiency.

Q2: Does EPA waive the requirement, under 40 CFR part 60, subpart UUU, to conduct a performance test for a rotary dryer which serves as a backup for the fluidized bed dryer at the Short Mountain Silica Company in Mooresburg, Tennessee?

A2: Yes. EPA approves the performance test waiver under NSPS subpart UUU because demonstration of compliance for the fluidized bed dryer also shows an acceptable level of compliance assurance for the rotary dryer.

Letter:

4APT-ATMB

Mr. Barry R. Stephens, P.E.
Director
Division of Air Pollution Control
Tennessee Department of Environment & Conservation 9th Floor, L & C Annex
401 Church Street
Nashville, TN 37243-1531

Dear Mr. Stephens:

We have received a request dated April 7, 2005, from Mr. Jeryl Stewart for a determination regarding an alternative monitoring procedure proposed by Short Mountain Silica (SMS) in Mooresburg, Tennessee. SMS dries sand by using a fluidized bed dryer which is subject to New Source Performance Standards (NSPS) Subpart UUU - "Standards of Performance for Calciners and Dryers in Mineral Industries." The request relates to the Subpart UUU monitoring requirements for a wet scrubber used to control particulate emissions from the dryer. Rather than measuring the pressure loss of the gas stream through the scrubber as required by Subpart UUU, the company has proposed to monitor the pressure of the scrubbing liquid going to the scrubber. Based on our review, we have determined the proposed alternative is acceptable. SMS has also requested a waiver from the requirement to conduct a performance test for a rotary dryer which serves as a backup for the fluidized bed dryer. The rotary dryer will use the same scrubber used for the fluidized bed dryer. We have determined that a performance test waiver is appropriate for the rotary dryer.

Owners or operators of affected facilities using a wet scrubber to comply with Subpart UUU are required by Sec. 60.734(d) to install, calibrate, maintain, and operate monitoring devices that continuously measure and record the pressure loss of the gas stream through the scrubber and the scrubbing liquid flow rate to the scrubber. As indicated in the alternative monitoring proposal, the scrubber used by SMS is a spray tower that uses high pressure nozzles which produce water droplets to capture particulate matter in the exhaust stream. The spray tower operates with a lower gas stream pressure drop than the type of scrubber the Subpart UUU monitoring requirements are based upon. Since there is little pressure drop of the gas stream as it passes through the spray tower, pressure drop is not a good indicator of the spray tower efficiency. As an alternative to monitoring the pressure drop of the gas stream through the scrubber and the liquid flow rate as required by Subpart UUU, the company has proposed to monitor the scrubbing liquid supply pressure and scrubbing liquid flow rate to assure continuous compliance. Based on our review, we have determined the proposal is acceptable.

The recordkeeping and reporting requirements of Subpart UUU at Sec. 60.735 will need to be met for the spray tower at SMS. As indicated in Sec. 60.735(c)(3), an exceedance is defined as a daily wet scrubber liquid flow rate that is less than 80 percent or greater than 120 percent of the average value recorded in accordance with Sec. 60.736(c) during the most recent performance test demonstrating compliance. Regarding the liquid supply pressure to the spray tower, the company will need to use a monitoring device which is accurate to within ± 5 percent

of the design scrubbing liquid supply pressure. An exceedance should be defined as any period in which the scrubbing liquid supply pressure is more than 20 percent below the average value determined in accordance with Sec. 60.736(c) during the most recent performance test demonstrating compliance. The requirement of Sec. 60.735(b) concerning the use of averages over a 2-hour period for each day will apply for the monitoring parameters.

In addition to the fluidized bed dryer (the primary dryer), SMS also has a rotary dryer which is subject to Subpart UUU. The rotary dryer is a backup dryer and will use the same spray tower and stack as the fluidized bed dryer. SMS has requested a waiver from the NSPS requirement for a performance test for the rotary dryer. The company has proposed to use the performance testing and the monitoring parameters established during the testing for the fluidized bed dryer to demonstrate compliance for the rotary dryer. The rotary dryer will be used infrequently, and it has approximately half the airflow rate of the fluidized bed dryer. As indicated in the proposal, if compliance can be demonstrated for the fluidized bed boiler when controlled with the spray tower, it is expected that the rotary dryer would likewise be in compliance. Using the compliance parameters determined from the testing of the fluidized bed dryer would likewise assure compliance of the rotary dryer. We have determined that a waiver from the performance test requirement for the rotary dryer is appropriate.

If there are any questions regarding this letter, please contact Mr. Keith Goff of the Region 4 staff at (404)562-9137.

Sincerely yours,

Beverly H. Banister
Director
Air, Pesticides, and Toxics
Management Division

applicability is provided in the preamble to the proposed Subpart UUU regulation (51 FR 15441; April 23, 1986). The preamble describes apron dryers and tunnel dryers as being used infrequently and as typically being uncontrolled at existing facilities. The preamble also indicates that uncontrolled particulate emission levels from apron dryers and tunnel dryers were lower than the Subpart UUU emission limit which was being proposed for other mineral dryers. Therefore, apron dryers and tunnel dryers were eliminated from the source category during development of the standard.

The tile dryer at Florim uses natural gas burners to heat formed tiles by convection until a residual moisture content of less than one percent is obtained. The tiles are automatically loaded into baskets which are conveyed by a chain through a series of drying zones within the dryer. The description provided indicates that the tile dryer at Florim operates in a manner which is typical of tunnel dryers used in the ceramic tile industry. Emission testing of the Florim tile dryer conducted in 1998 indicated an average uncontrolled particulate matter emission concentration of 0.0015 grain/dscf, which is considerably lower than the Subpart UUU emission limit of 0.025 grain/dscf. Based on our review, we have determined that the tile dryer at Florim is a tunnel dryer and is not subject to Subpart UUU.

If there are any questions regarding this letter, please contact Mr. Keith Goff of the Region 4 staff at (404)562-9137.

Sincerely,

Beverly A. Spagg
Acting Director
Air, Pesticides, and Toxics
Management Division



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 0600020

Category: NSPS
EPA Office: Region 4
Date: 04/03/2006
Title: Opacity Monitoring Exemption
Recipient: Wylie, Dwight K.
Author: Neeley, R. Douglas
Comments:

Part 60, UUU Calciners and Dryers in Mineral Ind.

References: 60.734(a)
 60.734(b)
 60.734(c)

Abstract:

Q: Does EPA approve an exemption from opacity monitoring under 40 CFR part 60, subpart UUU, for a flash dryer that uses baghouses to control emissions as it dries product at the DuPont DeLisle titanium dioxide production facility in Pass Christian, Mississippi?

A: Yes. EPA finds that because the dryer has a particulate matter emission rate of less than 11 tons/year, an exemption from the opacity monitoring requirement of NSPS subpart UUU is appropriate.

Letter:

4APT-ATMB

Mr. Dwight K. Wylie, P.E.
Chief
Office of Pollution Control
Mississippi Department of Environmental Quality
P.O. Box 10385
Jackson, MS 39289-0385

Dear Mr. Wylie:

We have received a March 24, 2006, request from Mr. Jerry Cain for a determination concerning New Source Performance Standards (NSPS), Subpart UUU - "Standards of Performance for Calciners and Dryers in Mineral Industries." The request relates to the Subpart UUU opacity monitoring requirements for the Line 2 Product Dryer at the DuPont DeLisle Plant in Pass Christian, Mississippi. Due to the low particulate matter (PM) emission rate from the dryer (less than 11 tons/year), the company has requested an exemption from the Subpart UUU requirements for opacity monitoring. Based on our review of the request and previous Environmental Protection Agency (EPA) determinations, we have decided that an exemption from opacity monitoring is appropriate for the Line 2 Product Dryer.

As described in the request, the Line 2 Product Dryer at the DuPont titanium dioxide production facility

currently has permit limits for PM of 1.5 lb/hour and 6.57 tons/year. Stack tests performed during 2004 indicated PM emission rates of 0.0013 gr/dscf and 0.0030 gr/dscf, which were well below the Subpart UUU emission limit of 0.025 gr/dscf. The two stack tests correspond with annual emission rates of 1.59 tons/year and 3.91 tons/year, respectively. Emissions from the Line 2 Product Dryer, a flash dryer, are controlled by three baghouses. Subpart UUU at Section 60.734(a) requires the use of a continuous monitoring system to measure and record the opacity of emissions, if a dry control device is used to comply with the standard. Although exceptions to this requirement are provided for certain types of dryers and calciners in Section 60.734(b) and (c), no exceptions are provided for titanium dioxide flash dryers.

At the time Subpart UUU was promulgated, EPA had determined that opacity monitoring was unnecessary for affected facilities that emit less than 11 tons of PM per year, and a list of calciners and dryers that are specifically exempt from opacity monitoring requirements because their particulate emission rates were known to be less than 11 tons/year is provided in Section 60.734(c). In several determinations issued following the promulgation of Subpart UUU, EPA has indicated that the exemption in Section 60.734(c) may be extended to any calciner or dryer that has been demonstrated to have a PM emission rate of less than 11 tons/year. Based upon the precedents established in these previous determinations, we have determined that an exemption from the opacity monitoring requirement is appropriate for the Line 2 Product Dryer at the DuPont DeLisle Plant. Also, since the authority to implement Subpart UUU in the State of Mississippi has been delegated to your agency, any company that supplies you with information demonstrating that PM emissions from a calciner or dryer using a dry control device are less than 11 tons/year would qualify for an opacity monitoring exemption. EPA Region 4 does not need to make a case-by-case determination granting an opacity monitoring exemption to each Subpart UUU facility that emits less than 11 tons of PM per year.

If there are any questions concerning this letter, please contact Mr. Keith Goff of the Region 4 staff at (404) 562-9137.

Sincerely,

R. Douglas Neeley
Acting Director
Air, Pesticides, and Toxics
Management Division

cc: Jerry Cain
Mississippi Department of
Environmental Quality



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 0600024

Category: NSPS
EPA Office: Region 4
Date: 02/27/2006
Title: Titanium Dioxide Ore Dryers and Product Dryers
Recipient: Wylie, Dwight K.
Author: Kemker, Carol L.
Comments:

Part 60, UUU Calciners and Dryers in Mineral Ind.

References: 60.730(a)
 60.730(b)
 60.731

Abstract:

Q: Does EPA find that 40 CFR part 60, subpart UUU, applies to the Line 2 ore dryer and product dryer at the DuPont DeLisle Plant in Pass Christian, Mississippi, where the facility uses a chlorination-oxidation process to manufacture titanium dioxide pigment?

A: Yes. EPA finds that although the chlorination-oxidation process is exempt from NSPS subpart UUU, the ore dryer and product dryer at the DuPont plant are not part of the chlorination-oxidation process. Thus, the dryers are subject to NSPS subpart UUU.

Letter:

4APT-ATMB

Mr. Dwight K. Wylie, P.E.
Chief
Office of Pollution Control
Mississippi Department of Environmental Quality
P.O. Box 10385
Jackson, Mississippi 39289-0385

Dear Mr. Wylie:

We have received a September 9, 2005, request from Mr. Jerry Cain for a determination concerning the applicability of New Source Performance Standards (NSPS), Subpart UUU - "Standards of Performance for Calciners and Dryers in Mineral Industries." The request relates to the applicability of Subpart UUU at the DuPont DeLisle Plant in Pass Christian, Mississippi. DuPont manufactures titanium dioxide pigment and uses a chlorination-oxidation process. Since the chlorination-oxidation process is exempt from applicability under Subpart UUU, the applicability of the standard to the Line 2 Ore Dryer and Line 2 Product Dryer has been questioned. Based on our review of the information provided, we have determined that the ore dryer and product dryer are not part of the chlorination-oxidation process at DuPont. Therefore, the two dryers are subject to Subpart UUU.

The DuPont DeLisle Plant manufactures titanium dioxide pigment using a chloride-ilmenite process, and two process lines (Line 1 and Line 2) are used at the plant. The applicability of Subpart UUU has been questioned for Line 2, since it was constructed after the applicability date of the standard (April 23, 1986). At the DuPont titanium dioxide processing plant, raw materials (ilmenite ore, coke, and chlorine) are reacted in a fluidized bed reactor where titanium dioxide in the ore is converted to titanium tetrachloride by a chlorination reaction. The titanium tetrachloride produced in the chlorinator is then oxidized in a second reactor to form titanium dioxide. The titanium dioxide is then processed in the finishing area to give the product its desired properties. The Line 2 Ore Dryer at the DeLisle Plant is used to dry ore prior to being sent to the chlorination reactor, and about ten percent of the ore fed to the dryer is recycled ore from the chlorination process. The Line 2 Product Dryer is used to dry the wet pigment cake which is received from the pigment finishing area. The Prevention of Significant Deterioration permit application from DuPont includes a process description which indicates the mineral processing plant includes other combustion units, such as process heaters, in addition to the ore dryer and pigment dryer.

As indicated at Sec. 60.730(a), the affected facility under Subpart UUU is each calciner and dryer at a mineral processing plant. A "calciner" is defined in Sec. 60.731 as equipment used to remove combined (chemically bound) water and/or gases from mineral material through direct or indirect heating, and the definition includes expansion furnaces and multiple hearth furnaces. A "dryer" is defined as equipment used to remove uncombined (free) water from mineral material through direct or indirect heating. A "mineral processing plant" is defined in Sec. 60.731 as "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." Subpart UUU at 60.730(b) excludes from applicability certain processes and process units which are used at mineral processing plants, and one of the excluded processes is the chlorination-oxidation process in the titanium dioxide industry. However, Subpart UUU at Sec. 60.730(b) does not exclude an entire mineral processing plant from applicability if one of the listed processes or process units is used.

The rationale used in the development of NSPS Subpart UUU is provided in the preamble to the proposed and final standard and in the background information documents for the standard. An explanation concerning the processes and process units excluded from applicability (i.e., Sec. 60.730(b)) is provided in the preamble to the proposed Subpart UUU regulation (51 FR 15438; April 23, 1986). According to the preamble, all mineral industries were reviewed in 1981 to determine which industries had process equipment that could be considered dryers or calciners. Based on the review, the Environmental Protection Agency (EPA) determined that chlorination-oxidation processes in the titanium dioxide industry did not involve the use of calciners or dryers to remove water. For that reason, the chlorination-oxidation process was eliminated from the source category.

Further discussion of the production of titanium dioxide is provided in the background information document for NSPS Subpart UUU (EPA-450/3-85-025a; October 1985), which was developed after the 1981 study which eliminated the chlorination-oxidation process from the source category (i.e., calciners and dryers used in mineral industries). The background document provides a discussion of the processes used in the production of titanium dioxide. These processes include the chloride process, in which the chlorination-oxidation process is used, and the sulfate process. The background document also provides a discussion of the use of dryers and calciners in chloride and sulfate processes. In the chloride process, which is used by the DuPont DeLisle Plant, the background information document indicates that dryers are used for ore drying and pigment drying. The background information document also includes emission test results for dryers used in titanium dioxide processing plants which use the chloride process. Therefore, ore and product dryers in plants using the chloride process were evaluated during the development of Subpart UUU and were not excluded from applicability. Ore and product dryers were not considered to be part of the chlorination-oxidation process.

DuPont indicates that the Line 2 Ore Dryer and Line 2 Product Dryer are not subject to Subpart UUU, because the dryers are integral and necessary components of the continuous chlorination-oxidation process used to manufacture titanium dioxide. DuPont indicates the titanium dioxide manufacturing operation at the DeLisle Plant involves a continuous process, beginning with raw material unloading and storage and ending with final product storage. Therefore, the company argues that all operations in the entire mineral processing plant (including operations such as raw material unloading, raw

material/product storage, and raw material/product drying) are part of a chlorination-oxidation process.

The exemption in Sec. 60.730(b) does not apply to an entire titanium dioxide processing plant if the chlorination-oxidation process is used. The exemption only applies to the chlorination-oxidation process, since that process was determined to not include the use of calciners or dryers. The Line 2 Ore Dryer and Line 2 Product Dryer are not located in the chlorination-oxidation process at the DuPont DeLisle Plant. Therefore, we have determined that the two dryers are subject to Subpart UUU. The exemption of the chlorination-oxidation process prevents the applicability of Subpart UUU to other combustion units, such as process heaters, which are located in the chlorination-oxidation process at DuPont.

To support their position that the ore and product dryers in Line 2 are not subject to Subpart UUU, DuPont has also brought to our attention a February 16, 2000, applicability determination from EPA Region 6 regarding the Louisiana Pigment Company in Westlake, Louisiana. That determination relates to a scrub solids calciner at a titanium dioxide processing plant which uses a chlorination-oxidation process. The scrub solids calciner is used to form hardened TiO₂ granules with a defined particle size. This is achieved by utilizing a chemical reaction on the surface of the particles under controlled chemical/physical conditions, which consist of a reaction temperature of 900°C and a continuous movement of particles. The determination indicates that the scrub solids calciner is exempt from Subpart UUU, because it is utilized in the chlorination-oxidation process. While the scrub solids calciner used at Louisiana Pigment Company was determined to be part of a chlorination-oxidation process, the Line 2 Ore Dryer and the Line 2 Product Dryer at the DuPont DeLisle Plant are not located in the chlorination-oxidation process. The drying of ore prior to entering the chlorination-oxidation process and the drying of pigment after it is produced in a chlorination-oxidation process are both regulated by Subpart UUU.

This determination has been provided with assistance from the EPA's Office of Enforcement and Compliance Assurance (OECA). If there are any questions concerning this letter, please contact Mr. Keith Goff of the Region 4 staff at (404)562-9137.

Sincerely yours,

Carol L. Kemker
Acting Director
Air, Pesticides, and Toxics
Management Division

cc: Jerry Cain; Mississippi Department of Environmental Quality Greg Fried; OECA



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 0700004

Category: NSPS
EPA Office: Region 4
Date: 10/26/2006
Title: Titanium Dioxide Spray Dryers
Recipient: Stephens, Barry R.
Author: Banister, Beverly H.
Comments:

Part 60, UUU Calciners and Dryers in Mineral Ind.

References: 60.731
 60.734(b)
 60.734(c)
 64.1
 64.10(a)

Abstract:

Q: Are the fabric filters used to control titanium dioxide spray dryers at the DuPont facility in New Johnsonville, Tennessee, considered dry control devices and therefore, required to meet the 40 CFR part 60, subpart UUU, opacity monitoring requirements? The company's argument that these are not subject is based on language from the Compliance Assurance Monitoring (CAM) rule at 40 CFR part 64, which exempts "inherent process equipment" from the CAM rule definition of "control device."

A: Yes. The opacity monitoring requirements in 40 CFR 60.734(b) apply to the titanium dioxide spray dryers controlled with fabric filters. The provisions of the CAM rule do not reduce or eliminate the monitoring requirements of existing regulations.

Letter:

4APT-ATMB

Mr. Barry R. Stephens, P.E.
Director
Division of Air Pollution Control
Tennessee Department of Environment & Conservation 9th Floor, L&C Annex
401 Church Street
Nashville, Tennessee 37243-1531

Dear Mr. Stephens:

This letter is in response to a June 20, 2006, request from Mr. Jeryl Stewart for a determination concerning the applicability of New Source Performance Standards (NSPS) Subpart UUU "Standards of Performance for Calciners and Dryers in Mineral Industries." The request relates to titanium dioxide (TiO₂) spray dryers at the DuPont TiO₂ production facility in New Johnsonville, Tennessee. Specifically,

the request seeks a determination as to whether the TiO₂ spray dryers are subject to opacity monitoring requirements under NSPS Subpart UUU. Based on the information provided, we find that the spray dryers are subject to the opacity monitoring requirements in 40 CFR Section 60.734(b). Details concerning this determination are provided below.

DuPont uses a chloride process to manufacture TiO₂ pigment at the New Johnsonville facility and uses spray dryers to dry the TiO₂ pigment. Particulate matter emissions from the TiO₂ spray dryers are regulated by NSPS Subpart UUU. However, DuPont asserts that the emissions from the spray dryers are exempt from NSPS Subpart UUU monitoring requirements. Since the fabric filters installed on the spray dryers recover TiO₂ which is produced in their plant, DuPont claims the fabric filters are "process product collectors" which are integral to the manufacturing process. DuPont claims that the fabric filters are not air pollution control equipment and are not dry control devices. Therefore, DuPont argues that they are not required to conduct the emissions monitoring required by Section 60.734(b) for dry control devices.

NSPS Subpart UUU at Section 60.731 defines a "control device" as "air pollution control equipment used to reduce particulate matter emissions released to the atmosphere from one or more affected facilities." Regardless of whether the particulate matter collected in fabric filters is product or waste, the fabric filters installed on the TiO₂ spray dryers at DuPont control particulate matter emissions. Therefore, the TiO₂ spray dryers in question are subject to the monitoring provisions in NSPS Subpart UUU. Section 60.734(b) specifically identifies TiO₂ spray dryers as being subject to emissions monitoring and requires daily Method 9 readings of the spray dryer exhaust.

The intention of the Environmental Protection Agency (EPA) to regulate TiO₂ spray dryers and require compliance monitoring for fabric filters controlling emissions from those dryers is documented in the background information document (BID) for NSPS Subpart UUU (EPA-450/3-85-025a; October 1985). The BID includes a discussion of processes used in the production of TiO₂. One of those processes is the chloride process, which is used at the DuPont New Johnsonville plant. The BID indicates that dryers are used in the chloride process for ore drying and pigment drying, and the most commonly used pigment dryers are spray dryers (as used at the DuPont New Johnsonville plant). The BID also includes emission test results for fabric filters used to control emissions from spray dryers in TiO₂ plants using the chloride process. A discussion of fabric filters in the BID indicates that they are used to control particulate matter emissions, as well as for product recovery. Therefore, TiO₂ spray dryers (i.e., product dryers) in plants using the chloride process were evaluated during the development of Subpart UUU and were not excluded from applicability. There is no language in the BID or in the Subpart UUU standard indicating that the use of air pollution control equipment to reduce particulate matter emissions which consist of a plant's product (i.e., TiO₂ in the case of DuPont) would exempt an affected facility from the emissions monitoring requirements in Subpart UUU. Although NSPS Subpart UUU provides a list of facilities exempt from monitoring in 40 CFR Section 60.734(c), the list does not include TiO₂ spray dryers using fabric filters. As mentioned previously in this letter, TiO₂ spray dryers are specifically identified in Section 60.734(b) which requires daily Method 9 readings of the spray dryer exhaust.

Although the incoming request from DuPont dated June 7, 2006, does not specifically reference the Compliance Assurance Monitoring (CAM) rule at 40 CFR Part 64, the June 20, 2006, letter from Mr. Stewart indicates that DuPont references provisions from the CAM rule to support their argument. Mr. Stewart's request indicates that the fabric filters used to recover TiO₂ product may qualify as "inherent process equipment," as defined in 40 CFR Section 64.1. Mr. Stewart also notes that "inherent process equipment" is exempt from the definition of a "control device" provided in Section 64.1. Based on these definitions, Mr. Stewart seeks clarification on whether fabric filters identified as "inherent process equipment" under the CAM rule qualify as "control devices" under NSPS Subpart UUU.

While we agree that some fabric filters could fall within the definition of "inherent process equipment" in the CAM rule, the applicability and implementation of NSPS Subpart UUU requirements does not rely on definitions provided in the CAM rule. In fact, there are several references in Part 64 indicating that CAM rule requirements do not supersede the requirements of other regulations. The "Limited Purpose of Part 64" is explained in the preamble to the CAM rule (62 FR 54904; October 22, 1997), which states:

Part 64 is intended to provide a reasonable means of supplementing existing regulatory provisions that are not consistent with the statutory requirements of titles V and VII of the 1990 Amendments to the Act. The EPA believes that the CAM approach is a reasonable approach commensurate with this rule. The Agency does not believe that existing

monitoring requirements that are more rigorous than part 64 should be reduced or that monitoring imposed in future regulatory actions necessarily should be guided by part 64. If existing requirements are more rigorous than Part 64, those requirements should continue to exist unaffected by Part 64. This point is made explicitly in several instances in the final rule.

One instance where the above mentioned point is explicitly made is in the "Savings provisions" of the CAM rule, at Section 64.10(a), which states the following with regard to other regulatory requirements:

Nothing in this part shall: (1) Excuse the owner or operator of a source from compliance with any existing emission limitation or standard, or any existing monitoring, testing, reporting or recordkeeping requirement that may apply under federal, state, or local law, or any other applicable requirements under the Act. The requirements of this part shall not be used to justify the approval of monitoring less stringent than the monitoring which is required under separate legal authority and are not intended to establish minimum requirements for the purpose of determining the monitoring to be imposed under separate authority under the Act, including monitoring in permits issued pursuant to title I of the Act. The purpose of this part is to require, as part of the issuance of a permit under title V of the Act, improved or new monitoring at those emissions units where monitoring requirements do not exist or are inadequate to meet the requirements of this part.

Based on the above citations, it is clear that EPA did not intend for the CAM rule to eliminate the monitoring requirements of existing regulations, including NSPS Subpart UUU. Thus, we have determined that the CAM rule does not exempt an NSPS Subpart UUU affected facility from compliance monitoring requirements. We find no reason to exempt an affected facility under NSPS Subpart UUU from monitoring requirements based on language provided in the CAM rule.

Finally, DuPont argues that their fabric filters are not subject to NSPS Subpart UUU monitoring requirements, since the fabric filters are used "primarily" for a purpose other than air pollution control. The NSPS Subpart UUU definition of "control device" does not require that air pollution control equipment be used "primarily" to reduce particulate matter emissions in order to be considered a control device. Enclosed is an April 29, 2004, EPA determination (Control No. 0500056 on the Applicability Determination Index) indicating that the primary purpose of a piece of equipment is not relevant in determining whether it meets the Subpart UUU definitions of "calciner" or "dryer." In a similar manner, the primary purpose of a control device (i.e., whether it is used to reduce emissions or recover product) is not a consideration in Subpart UUU. Since the fabric filters at DuPont control particulate matter emissions from the product dryers, the fabric filters meet the Subpart UUU definition of a "control device." Therefore, the monitoring requirements in Section 60.734(b) apply to the DuPont product dryers.

This determination has been provided with assistance from the EPA's Office of Enforcement and Compliance Assurance (OECA). If there are any questions concerning this letter, please contact Mr. Keith Goff of the Region 4 staff at (404) 562-9137.

Sincerely,

Beverly H. Banister
Director
Air, Pesticides, and Toxics
Management Division

Enclosure

cc: Jeryl Stewart; Tennessee Department
of Environment & Conservation
David H. Alexander; DuPont
Greg Fried; OECA

P.O. Box 21566
8725 Old Mooringsport Road
Shreveport, LA 71120

Dear Mr. Dean:

This letter is in response to your August 8, 1996 letter to the Louisiana Department of Environmental Quality (LDEQ) and the Environmental Protection Agency (EPA) concerning a New Source Performance standards (NSPS) clarification of applicability. Your request pertains to a new calcining oven at Spherical Catalyst Manufacturing (SCM) Line 1 which is currently subject to the applicable provisions of NSPS, 40 CFR Part 60 Subpart UUU, at the UOP Shreveport Plant located in Shreveport, Louisiana.

In your letter, you stated that the existing calcining ovens and drying ovens at the Shreveport Plant are used to produce alumina and silica/alumina spheres which are then used as catalyst support material. You also stated that the new SCM Line 1 Calciner will be used for the same purpose. You further stated that the Shreveport Plant does not process minerals, but that the alumina processed at the facility is produced synthetically using a combination of pure aluminum, hydrochloric acid, and/or aluminum hydroxychloride solution as the raw feed materials. You concluded by stating that the Shreveport Plant produces synthetic alumina rather than the mineral form of alumina listed in Subpart UUU.

As you are aware, alumina is one of the compounds listed in NSPS, Subpart UUU, 40 CFR 60.731 to regulate mineral processing. Since the Shreveport Plant does not process minerals, we approve your determination that the new SCM Line 1 Calciner at the UOP Shreveport Plant is not subject to the NSPS Subpart UUU.

This approval, based on the information submitted to LDEQ and EPA Region 6, is for the new SCM Line 1 Calciner at the Shreveport Plant and further described in your letter dated August 8, 1996. If any information is found that would reverse this determination, then it could become invalid and a new determination would be needed. This affected facility determination is specific to the above referenced facility located in Shreveport, Louisiana. Affected facility and applicability determinations for other facilities and/or process units subject to NSPS are to be addressed on a request-by-request basis. Also, this determination was coordinated with EPA's Office of Compliance in Washington, D.C. and with EPA's Emission Standards Division, Minerals and Inorganic Chemicals Group in Research Triangle Park, North Carolina.

Should you need any additional information regarding this matter, please contact me at (214) 665-7220, or Mr. Tony Robledo of my staff at (214) 665-8182.

Sincerely yours,

Chief
Air/Toxics and Inspection
Coordination Branch

cc: Jim Courville, LDEQ
Richard Bromley, LDEQ
(Northwest Regional Office)
Bill Neuffer (MD-13)
Keith Brown (2223A)



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 0800007

Category: NSPS
EPA Office: Region 4
Date: 10/26/2006
Title: Method 9 Test Waiver
Recipient: Overcash, Keith
Author: Banister, Beverly H.
Comments:

Part 60, UUU Calciners and Dryers in Mineral Ind.

References: 60.8(b)(4)
 60.672(e)

Abstract:

Q: Does EPA approve the use of an alternative performance test method, under 40 CFR part 60, subpart UUU, to verify compliance with the applicable opacity limit for rotary sand dryers located inside of buildings at two Triangle Brick Company plants in Moncure, North Carolina and Wadesboro, North Carolina, if no visible emissions are detected during a 75-minute EPA Method 22 observation period on the exterior of the buildings?

A: Yes. EPA finds that the proposed performance testing procedures, consisting of Method 22 observations made on the exterior of the buildings where they are located, would be acceptable in lieu of EPA Method 9 for rotary sand dryers located inside of buildings. The EPA Method 22 procedures are similar to a compliance option under 40 CFR part 60, subpart OOO (Standards of Performance for Nonmetallic Mineral Processing Plants), allow for affected facilities located inside buildings. 40 CFR Â§ 60.8(b)(4) allows for the requirement for an initial performance test to be waived when an owner or operator demonstrates through other means that an affected facility is in compliance.

Letter:

Keith Overcash, Director
Division of Air Quality
North Carolina Department of Environment & Natural Resources
1641 Mail Service Center
Raleigh, NC 27699-1641

Dear Mr. Overcash:

This letter is in response to a letter in which Michael Aldridge of your staff requested a determination regarding a proposal to use an alternative method to verify compliance with the applicable opacity limit for rotary sand dryers used at two Triangle Brick Company (Triangle) plants in North Carolina. The plants covered by this request are located in Moncure, North Carolina and Wadesboro, North Carolina, and the sand dryers at both plants are subject to 40 CFR Part 60, Subpart UUU "Standards of Performance for Calciners and Dryers in Mineral Industries." These sand dryers are subject to an opacity limit of 10 percent under Subpart UUU, and the compliance testing method specified for this

limit under the rule is the U.S. Environmental Protection Agency (EPA) Method 9.

As an alternative to using EPA Method 9 to verify opacity compliance for its sand dryers, Triangle proposed to make observations in accordance with EPA Method 22 on the exterior of the buildings in which the dryers are located. Provided that no visible emissions are observed during EPA Method 22 testing on the exterior of the buildings where the dryers are located, a waiver of the requirement to conduct Method 9 testing on the dryers located inside the building would be acceptable to EPA Region 4. Details regarding Triangle's proposal and the basis for our determination are provided in the remainder of this letter.

Triangle's proposal to base opacity compliance for its sand dryers on the results of Method 22 observations made on the exterior of the buildings where they are located is similar to a compliance option that 40 CFR Part 60, Subpart OOO (Standards of Performance for Nonmetallic Mineral Processing Plants) allows for affected facilities located inside buildings. Under this option promulgated at 40 CFR Sec. 60.672(e), owners and operators can use EPA Method 22 observations made on the outside of a building to verify compliance for the affected facilities located inside the building. The total Method 22 observation time required when this compliance option is chosen is 75 minutes (15 minutes for each side of the building and 15 minutes for the roof).

Under provisions in 40 CFR Sec. 60.8(b)(4), the requirement for an initial performance test can be waived when an owner or operator demonstrates through other means that an affected facility is in compliance. Based upon the similarity between the opacity compliance testing procedures proposed by Triangle and those in 40 CFR Sec. 60.672(e), waiving the requirement to conduct Method 9 testing inside of the buildings where Triangle's sand dryers are located would be acceptable to EPA Region 4 if no visible emissions are detected during 75 minutes of Method 22 observations made on the exterior of each building that houses the sand dryers at the two plants in question. If any visible emissions are detected during the Method 22 observation period, it will be necessary for Triangle to determine compliance with the applicable opacity limit by collecting three hours of Method 9 data inside the building(s) where visible emissions are detected.

If you have any questions about the determination provided in this letter, please contact Mr. David McNeal of the EPA Region 4 staff at (404) 562-9102.

Sincerely,

Beverly H. Banister
Director
Air, Pesticides and Toxics
Management Division

cc: Michael Y. Aldridge



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 0800028

Category: NSPS
 EPA Office: Region 6
 Date: 09/12/1996
 Title: Synthetic Alumina Applicability Determination
 Recipient: Curtis Dean
 Author: John R. Hepola
 Comments:

Part 60, UUU Calciners and Dryers in Mineral Ind.

References: 60.730
60.731

Abstract:

Q1: Does EPA considered any of the material used as a feedstock on the Spherical Catalyst Manufacturing (SCM) Line 1 at UOP's Shreveport, Louisiana, plant, a "mineral" as term is used in the definition of "mineral processing plant," under NSPS subpart UUU?

A1: No. EPA finds that none of the feed materials used on SCM Line 1 (pure aluminum, hydrochloric acid, and/or aluminum hydroxychloride solution) is a "mineral," as the term is used in the definition of "mineral processing plant," under at 40 CFR 60.731.

Q2: Does synthetic alumina produced on the Spherical Catalyst Manufacturing (SCM) Line 1 at UOP's Shreveport, Louisiana, plant, using a combination of pure aluminum, hydrochloric acid, and/or aluminum hydroxychloride solution, meet the definition of a "mineral," as the term is used in NSPS CFR subpart UUU in the definition of the affected facility: each calciner and dryer at a "mineral processing plant," located in NSPS subpart UUU at 40 CFR 60.730?

A2: No. EPA finds that the synthetic alumina produced on SCM Line 1 does not meet the definition of "mineral."

Q3: Is SCM Line 1, located at UOP's Shreveport, Louisiana, plant, processing a "mineral," as the term is used in 40 CFR part 60, subpart UUU, or producing a "mineral," as the term is used in the definition of the affected facility (each calciner and dryer at a "mineral processing plant") in subpart UUU, potentially subject to NSPS part 60, subpart UUU?

A3: No. EPA finds that SCM Line 1 cannot be subject to subpart UUU, because it neither processes a "mineral," nor does it produce a "mineral," and, therefore, it does not meet the NSPS subpart UUU definition of a "mineral processing plant"

Letter:

September 12, 1996

Mr. Curtis Dean

UOP Shreveport Plant
P.O. Box 21566
8725 Old Mooringsport Road
Shreveport, LA 71120

Dear Mr. Dean:

This letter is in response to your August 8, 1996 letter to the Louisiana Department of Environmental Quality (LDEQ) and the Environmental Protection Agency (EPA) concerning a New Source Performance standards (NSPS) clarification of applicability. Your request pertains to a new calcining oven at Spherical Catalyst Manufacturing (SCM) Line 1 which is currently subject to the applicable provisions of NSPS, 40 CFR Part 60 Subpart UUU, at the UOP Shreveport Plant located in Shreveport, Louisiana.

In your letter, you stated that the existing calcining ovens and drying ovens at the Shreveport Plant are used to produce alumina and silica/alumina spheres which are then used as catalyst support material. You also stated that the new SCM Line 1 Calciner will be used for the same purpose. You further stated that the Shreveport Plant does not process minerals, but that the alumina processed at the facility is produced synthetically using a combination of pure aluminum, hydrochloric acid, and/or aluminum hydroxychloride solution as the raw feed materials. You concluded by stating that the Shreveport Plant produces synthetic alumina rather than the mineral form of alumina listed in Subpart UUU.

As you are aware, alumina is one of the compounds listed in NSPS, Subpart UUU, 40 CFR Sec. 60.731 to regulate mineral processing. Since the Shreveport Plant does not process minerals, we approve your determination that the new SCM Line 1 Calciner at the UOP Shreveport Plant is not subject to the NSPS Subpart UUU.

This approval, based on the information submitted to LDEQ and EPA Region 6, is for the new SCM Line 1 Calciner at the Shreveport Plant and further described in your letter dated August 8, 1996. If any information is found that would reverse this determination, then it could become invalid and a new determination would be needed. This affected facility determination is specific to the above referenced facility located in Shreveport, Louisiana. Affected facility and applicability determinations for other facilities and/or process units subject to NSPS are to be addressed on a request-by-request basis. Also, this determination was coordinated with EPA's Office of Compliance in Washington, D.C. and with EPA's Emission Standards Division, Minerals and Inorganic Chemicals Group in Research Triangle Park, North Carolina.

Should you need any additional information regarding this matter, please contact me at (214) 665-7220, or Mr. Tony Robledo of my staff at (214) 665-8182.

Sincerely yours,

Chief
Air/Toxics and Inspection
Coordination Branch

cc: Jim Courville, LDEQ
Richard Bromley, LDEQ
(Northwest Regional Office)
Bill Neuffer (MD-13)
Keith Brown (2223A)



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 0800037

Category: NSPS
EPA Office: Region 5
Date: 02/07/2008
Title: Alternative Monitoring for Calciner
Recipient: Dawn Krueger
Author: George Czerniak
Comments:

Part 60, UUU Calciners and Dryers in Mineral Ind.

References: 60.734(d)
 60.735(c)

Abstract:

Q: Does EPA approve an alternative monitoring plan, under 40 CFR part 60, subpart UUU, to monitor the nozzle pressure of a Venturi scrubber instead of the pressure loss of the gas stream through the Venturi scrubber at 3M's Cottage Grove, Minnesota, facility?

A: Yes. EPA finds that 3M Company has demonstrated that the nozzle pressure is a reasonable alternative under NSPS subpart UUU to the pressure loss of the gas stream through the Venturi scrubber.

Letter:

Dawn J. Krueger, Manager
Environmental Operations
3M Company
P.O. Box 33331
St. Paul, Minnesota 55133-3331

Dear Ms. Krueger:

On December 12, 2007, 3M Company requested approval from the United States Environmental Protection Agency for an alternative monitoring request pertaining to two kilns located at 3M's Cottage Grove, Minnesota, facility that are subject to the Standards of Performance for Calciners and Dryers in Mineral Industries (Calciner/Dryer NSPS). 3M requested that it monitor the nozzle pressure of its Venturi scrubber instead of the pressure loss of the gas stream through the Venturi scrubber. For the reasons set forth below, EPA approves 3M's request.

Facility Background

On December 6, 1991, 3M commenced construction of two calciners, as defined in the Calciner/Dryer NSPS, at a facility that processes an alumina mineral. Minnesota Pollution Control Agency (MPCA) Air Emission Permit Number 16300017002 designates the calciners as EU 008 and EU 009 (Kilns 1 and 2). The Permit designates the combined emissions from EU 008 and EU 009 as EU 010. 3M uses a

Venturi scrubber followed by a series of six packed bed towers to control nitrogen oxide and particulate matter emissions from EU 010. 3M continuously monitors the scrubbing system inlet pressure and liquid pressure among other parameters. As required by 40 C.F.R. § 60.734(d), 3M also continuously monitors the scrubbing liquid flow rate.

On October 18, 2007, Pace Analytical Services, on behalf of 3M, measured the PM emission concentration from EU 010 using Reference Method 5 in 40 C.F.R. 60, Appendix A. During the PM performance test, 3M operated Kilns 1 and 2 at their maximum operating rates. The average PM emission concentration was 0.0009 grain per dry standard cubic foot (gr/dscf). The PM emission standard set forth in 40 C.F.R. § 60.732(a) is 0.040 gr/dscf.

Discussion

3M requested that it monitor the Venturi scrubber's nozzle pressure instead of the pressure loss of the gas stream through the Venturi scrubber as 40 C.F.R. § 60.734(d) requires. In a January 29, 2008, e-mail from you to Charles Hall, of my staff, you clarified that the nozzle pressure is also known as the scrubbing system liquid pressure. Analogous to 40 C.F.R. § 60.735(c)(3), 3M recommended that any instance where the scrubbing system liquid pressure is more than 20 percent below the average value constitute an exceedance which 3M would report. During the October 18, 2007, PM performance test, 3M demonstrated the average scrubbing system liquid pressure and average scrubbing liquid flow rate that correspond with compliance with the PM emission standard. Consequently, EPA believes that the scrubbing system liquid pressure is a reasonable alternative to the pressure loss of the gas stream through the Venturi scrubber. EPA concurs with 3M's recommendation that any instance where the scrubbing system liquid pressure is more than 20 percent below the average value constitute an exceedance which 3M would report. Therefore, pursuant to 40 C.F.R. § 60.13(i), EPA, by authority duly-delegated to the undersigned, approves 3M's request to monitor the scrubbing system liquid pressure of its Venturi scrubber instead of the pressure loss of the gas stream through the Venturi scrubber.

Please direct any questions regarding this letter to Charles Hall, of my staff, at (312) 3533443.

Sincerely yours,

George Czerniak, Chief
Air Enforcement and Compliance Assurance Branch

cc: Air Quality Permits Document Coordinator, MPCA



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 0800052

Category: NSPS
EPA Office: Region 5
Date: 09/06/2007
Title: Alternative Monitoring for Wet Scrubber
Recipient: Michael Burke
Author: George T. Czerniak
Comments:

Part 60, UUU Calciners and Dryers in Mineral Ind.

References: 60.13

Abstract:

Q: Does EPA approve an alternative monitoring plan for 40 CFR part 60, subpart UUU requirements at the Criterion Catalysts & Technologies (Criterion) facility in Michigan City, Indiana? Criterion requests approval to continuously monitor the gas flow rate entering or exiting the wet scrubber in lieu of continuously monitoring the gas phase pressure drop across the scrubber.

A: Yes, conditionally. EPA concurs that the gas phase pressure drop is not an appropriate continuous monitoring parameter for a wet scrubber that does not use a Venturi design for particulate matter emission control. Pursuant to NSPS subpart UUU, EPA approves this alternative monitoring plan subject to the conditions specified in EPA's response letter to Criterion on September 6, 2007.

Letter:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

SEP 06 2007
REPLY TO THE ATTENTION OF
AE- 17J

Mr. Michael Burke
Plant Manager
Criterion Catalysts & Technologies, LP
1800 E. US 12
Michigan City, Indiana 46360-2098

Re: Alternative Monitoring Request for NSPS Part 60, Subpart UUU

Dear Mr. Burke:

Thank you for your letter, dated August 6, 2007, to the United States Environmental Protection Agency

(U.S. EPA), requesting approval of an alternative monitoring plan (AMP) to that found in the requirements of the New Source Performance Standards (NSPS) Part 60, Subpart UUU (Standards of Performance for Calciners and Dryers in Mineral Industries). Specifically, Criterion Catalysts & Technologies (Criterion) requests approval to continuously monitor the gas flow rate entering or exiting the wet scrubber in lieu of continuously monitoring the gas phase pressure drop across the scrubber. In addition, Criterion commits to continuously monitoring the scrubbing liquid flow rate to the scrubber which is also a requirement of 40 CFR Part 60, Subpart UUU.

40 CFR Sec. 60.13 states that after receipt and consideration of written application, U.S. EPA may approve alternatives to any monitoring procedures or requirements of Part 60.

Criterion operates a spray dryer system that is subject to the NSPS Subpart UUU. The spray dryer system is equipped with three baghouses followed by a non-Venturi type wet scrubber. Although the facility currently relies on the baghouses to meet the particulate matter emission standard and a continuous opacity monitoring system to meet the monitoring requirements of Subpart UTJU, the facility wants to incorporate the wet scrubber into its compliance approach to gain greater operational flexibility. For subject dryers equipped with wet scrubbers, the monitoring provisions of 40 CFR Sec. 60.734(d) require owners or operators to install, calibrate, maintain and operate monitoring devices that continuously measure and record the pressure drop of the gas stream through the scrubber and the scrubber liquid flow rate. Criterion explains in its August 6, 2007, letter that the gas phase pressure drop has limited impact on the performance of a non-Venturi type scrubber and therefore is not an appropriate continuous monitoring parameter.

U.S. EPA concurs with Criterion that the gas phase pressure drop is not an appropriate continuous monitoring parameter for a wet scrubber that does not use a Venturi design for particulate matter emission control. In addition, U.S. EPA believes that the ratio of scrubbing liquid to flue gas treated (liquid-to-gas ratio) is an appropriate monitoring parameter for a wet scrubber. Therefore, pursuant to 40 CFR Sec. 60.13, U.S. EPA approves the following alternative continuous monitoring system (CMS) plan for the scrubber on Criterion's spray dryer:

1. Criterion must install, operate and maintain continuous monitoring system(s) to measure and record the ratio of total liquid (or scrubbing liquid) flow rate to the scrubber to the gas flow rate entering or exiting the scrubber (flue gas treated). This ratio of scrubbing liquid to flue gas treated is the "liquid-to-gas ratio." The continuous monitoring system(s) must be installed such that representative measurements of emissions or process parameters from the affected facility are obtained. The monitoring system(s) must meet the requirements of the General Provisions of Part 60. Additional procedures for location of the continuous monitoring system(s) which are contained in the applicable Performance Specifications of Appendix B of Part 60 must be used. 40 CFR Sec. 60.13 requires, among other things, that each CMS complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period (i.e., the liquid-to-gas ratio must be recorded each successive 15-minute period). The CMS must determine and record the hourly average liquid-to-gas ratio of all recorded readings from four or more data points equally spaced over each one-hour period. The owner or operator must determine and record once each day, from the recordings of the continuous monitoring device(s), an arithmetic average over a two-hour period of the liquid-to-gas ratio.
2. Within 180 days of startup of the wet scrubber, Criterion must conduct a performance test for particulate matter at the spray dryer in accordance with 40 C.F.R. Sec. 60.8. The performance test must consist of three test runs and the sampling time of each test run must be at least two hours. Criterion must notify U.S. EPA at least 30 days prior to conducting the performance test to allow U.S. EPA to review the protocol and to have an observer present during the test. During the performance testing, and using the continuous monitoring system(s), Criterion must measure and record the liquid-to-gas ratio at least every 15 minutes during the entire performance test and record the average liquid-to-gas ratio during each test run and the arithmetic average liquid-to-gas ratio of the three test runs. The operating limit established during the performance test must represent the conditions in existence when the wet scrubber and baghouses are being properly operated and maintained to meet the emission limitation.
3. Criterion must maintain records of the ratio of the scrubbing liquid to flue gas treated at the facility for at least two years.
4. Criterion must submit reports of exceedances of the liquid-to-gas ratio semiannually to U.S. EPA and

the Indiana Department of Environmental Management as required by 40 CFR Sec. 60.735.

Exceedances are defined as follows:

a. Any two hour period when the average liquid-to-gas ratio is less than 80 percent of the arithmetic average liquid-to-gas ratio of the three test runs of the most recent performance test that demonstrated compliance with the particulate matter standard in 40 CFR Part 60, Subpart UUU. In addition, it is important to note that in Criterion's case, the baghouses are essential to achieve compliance with the particulate matter emission rate. Stack testing performed by Criterion shows that the baghouses achieve 98 percent efficiency of particulate removal. Therefore, the baghouses must also have monitoring systems in place that continuously monitor emissions and operations. 40 CFR Sec 60.734(a) states, among other things, that with the exception of process units which use wet scrubbers to comply with the mass emission standard of Subpart UUU, the owner or operator who uses a dry control device to comply with the mass emission standard of Subpart UUU must install, calibrate, maintain and operate a continuous monitoring system to measure and record the opacity of emissions discharged into the atmosphere from the control device. We do not believe that the exception noted above applies to Criterion because the scrubber alone is not being used to comply with the mass emission standard. Therefore, Criterion must comply with both 40 CFR Sec. 60.734(a), which contains the monitoring requirements that apply to Criterion's baghouses and 40 CFR Sec. 60.734(d), which contains the monitoring requirements that apply to Criterion's wet scrubber.

Via this letter, we are approving an AMP for Criterion's wet scrubber which satisfies the requirements of 40 C.F.R. Sec. 60.734(d). Now Criterion must determine how it will comply with the monitoring provisions of Sec. 60.734(a) for the baghouses. For a baghouse, 40 CFR Sec. 60.734(a) requires the installation of a continuous opacity monitor to measure and record the opacity of emissions to the atmosphere. However, in the case of Criterion, it may not be feasible to measure the opacity at the outlet of the scrubber due to the interference from water from the wet scrubber. Therefore, Criterion may request alternative monitoring procedures to either continuously measure the opacity between the baghouses and the scrubber, or to measure alternative parameters. 40 CFR Sec. 60.13(i) specifically states that alternative monitoring procedures can be requested in the event that a monitoring system would not provide accurate measurements due to interference caused by liquid water; when alternative locations for installing continuous monitoring systems would enable accurate and representative measurements; or when the proposed continuous monitoring system adequately demonstrates a definite and consistent relationship between its measurements and the measurements of opacity. In any event, any proposed alternative monitoring plan should include a justification for the request and a description of the parameters you plan to measure and their proposed values for demonstrating compliance, the measurement techniques, the monitoring frequency, and the averaging time.

If you have any questions regarding this letter, please contact Linda H. Rosen, of my staff, at (312) 886-6810.

Sincerely yours,

George T. Czerniak, Chief
Air Enforcement and Compliance Assurance Branch

cc: Craig Henry, Acting Section Chief
Office of Enforcement- Air Section
Indiana Department of Environmental Management



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 0900004

Category: NSPS
 EPA Office: Region 5
 Date: 07/26/2007
 Title: Spray Dryer Equipped with Baghouse and Wet Scrubber
 Recipient: Burke, Michael
 Author: Czerniak, George T.
 Comments: See related applicability determinations filed as ADI Control Nos. 0900005 and 0900006.

Part 60, A	General Provisions UUU	Calciners and Dryers in Mineral Ind.
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References:	60.13 60.734
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Abstract:

Q: Does EPA approve an alternative monitoring plan under 40 CFR part 60, subpart UUU, for Criterion Catalyst's spray dryer system equipped with a baghouse system followed by a non-Venturi type wet scrubber located in Michigan City, Indiana? Criterion Catalyst seeks to monitor continuously the fuel flow rate to the spray dryer process heater and the feed rate to the spray dryer in lieu of continuously monitoring the gas phase pressure drop across the scrubber.

A: No. EPA does not approve the requested alternative monitoring plan under NSPS subpart UUU. Although EPA agrees with Criterion Catalyst that the pressure drop may not be an appropriate monitoring parameter for a wet scrubber that does not use a Venturi design, Criterion Catalyst has not made adequate demonstration that the feed rate to the dryer or the fuel flow rate to the process heater correlate to the gas flow to the scrubber or relate to the performance of the scrubber.

Letter:

AE-17J

Mr. Michael Burke
 Plant Manager
 Criterion Catalysts & Technologies, LP
 1800 E. US 12
 Michigan City, Indiana 46360-2098

Dear Mr. Burke:

Re: Alternative Monitoring Request for NSPS Part 60, Subpart UUU

Dear Mr. Burke:

Thank you for your letter, dated June 20, 2007, to the United States Environmental Protection Agency (U.S. EPA), requesting approval of an alternative monitoring plan (AMP) to the requirements of the New Source Performance Standards (NSPS) Part 60, Subpart UUU (Standards of Performance for Calciners and Dryers in Mineral Industries). Specifically, Criterion Catalysts & Technologies (Criterion) requests approval to continuously monitor the fuel flow rate to the spray dryer process heater and the feed rate to the spray dryer in lieu of continuously monitoring the gas phase pressure drop across the scrubber. Criterion asserts that fuel flow rate and feed rate correlate to the gas flow rate to the scrubber. In addition, Criterion commits to continuously monitoring the scrubbing liquid flow rate to the scrubber which is also a requirement of 40 CFR Part 60, Subpart UUU.

40 CFR Sec. 60.13 states that after receipt and consideration of written application, U.S. EPA may approve alternatives to any monitoring procedures or requirements of Part 60.

Criterion operates a spray dryer system that is subject to the NSPS Subpart UUU. The spray dryer system is equipped with a baghouse followed by a non-Venturi type wet scrubber. Although the facility currently operates a baghouse to meet the particulate matter emission standard and a continuous opacity monitoring system to meet the monitoring requirements of Subpart UUU, the facility wants to incorporate the wet scrubber into its compliance approach to gain greater operational flexibility. For subject dryers equipped with wet scrubbers, the monitoring provisions of 40 CFR Part 60, Subpart UUU (Sec. 60.734(d)) require owners or operators to install, calibrate, maintain and operate monitoring devices that continuously measure and record the pressure drop of the gas stream through the scrubber and the scrubber liquid flow rate. Criterion explains in its June 20, 2007, letter that the gas phase pressure drop has limited impact on the performance of a non-Venturi type scrubber and therefore is not an appropriate continuous monitoring parameter.

U.S. EPA concurs with Criterion that the gas phase pressure drop is not an appropriate continuous monitoring parameter for a wet scrubber that does not use a Venturi design for particulate matter emission control. In addition, U.S. EPA believes that the ratio of scrubbing liquid to flue gas treated (liquid-to-gas ratio) is an appropriate monitoring parameter for a wet scrubber. However, U.S. EPA does not believe you have made adequate demonstration that the feed rate to the dryer and the fuel flow rate to the process heater correlate to the gas flow to the scrubber or directly relate to the performance of the scrubber. In order for the liquid-to-gas ratio to be used as an alternative parameter, the gas flow treated (i.e., gas flow rate entering or exiting the wet scrubber) needs to be continuously monitored. Therefore, your proposed AMP is denied.

Since the gas phase pressure drop is not an appropriate parameter for a non-Venturi type scrubber and the monitoring of the scrubber liquid flow rate alone will not be acceptable, Criterion will need to propose a different AMP for consideration by U.S. EPA. If you have any questions regarding this letter, please contact Linda H. Rosen, of my staff, at (312) 886-6810.

Sincerely yours,

George T. Czerniak, Chief
Air Enforcement and Compliance Assurance Branch

cc: Craig Henry, Acting Section Chief
Office of Enforcement-Air Section
Indiana Department of Environmental Management



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 0900005

Category: NSPS
 EPA Office: Region 5
 Date: 09/06/2007
 Title: Spray Dryer Equipped with Baghouse and Wet Scrubber
 Recipient: Burke, Michael
 Author: Czerniak, George T.
 Comments: See related applicability determinations filed as ADI Control Nos. 0900004 and 0900006.

Part 60, A	General Provisions UUU	Calciners and Dryers in Mineral Ind.
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References:	60.8
	60.13
	60.734
	60.735
	60.736

Abstract:

Q: Does EPA approve an alternative monitoring system (AMS) plan to comply with the mass emission standard under 40 CFR part 60, subpart UUU, for Criterion Catalyst's spray dryer equipped with a baghouse system and wet scrubber located in Michigan City, Indiana? Criterion Catalyst seeks to monitor continuously the liquid-to-gas ratio in lieu of the pressure drop across the scrubber.

A: EPA conditionally approves Criterion Catalyst's AMS plan under NSPS subpart UUU to monitor continuously the liquid-to-gas ratio in lieu of the pressure drop across the scrubber to comply with the mass emission standard. In addition, Criterion Catalyst must have continuous monitoring systems in place for the baghouse system since in this case the baghouses are essential to achieving compliance with the particulate matter (PM) emission standard, and Criterion Catalyst does not meet the exception in 40 CFR 60.734(a).

Letter:

AE-17J

Mr. Michael Burke
 Plant Manager
 Criterion Catalysts & Technologies, LP
 1800 E. US 12
 Michigan City, Indiana 46360-2098

Re: Alternative Monitoring Request for NSPS Part 60, Subpart UUU

Dear Mr. Burke:

Thank you for your letter, dated August 6, 2007, to the United States Environmental Protection Agency (U.S. EPA), requesting approval of an alternative monitoring plan (AMP) to that found in the requirements of the New Source Performance Standards (NSPS) Part 60, Subpart UUU (Standards of Performance for Calciners and Dryers in Mineral Industries). Specifically, Criterion Catalysts & Technologies (Criterion) requests approval to continuously monitor the gas flow rate entering or exiting the wet scrubber in lieu of continuously monitoring the gas phase pressure drop across the scrubber. In addition, Criterion commits to continuously monitoring the scrubbing liquid flow rate to the scrubber which is also a requirement of 40 CFR Part 60, Subpart UUU.

40 CFR Sec. 60.13 states that after receipt and consideration of written application, U.S. EPA may approve alternatives to any monitoring procedures or requirements of Part 60.

Criterion operates a spray dryer system that is subject to the NSPS Subpart UUU. The spray dryer system is equipped with three baghouses followed by a non-Venturi type wet scrubber. Although the facility currently relies on the baghouses to meet the particulate matter emission standard and a continuous opacity monitoring system to meet the monitoring requirements of Subpart UUU, the facility wants to incorporate the wet scrubber into its compliance approach to gain greater operational flexibility. For subject dryers equipped with wet scrubbers, the monitoring provisions of 40 CFR Sec. 60.734(d) require owners or operators to install, calibrate, maintain and operate monitoring devices that continuously measure and record the pressure drop of the gas stream through the scrubber and the scrubber liquid flow rate. Criterion explains in its August 6, 2007, letter that the gas phase pressure drop has limited impact on the performance of a non-Venturi type scrubber and therefore is not an appropriate continuous monitoring parameter.

U.S. EPA concurs with Criterion that the gas phase pressure drop is not an appropriate continuous monitoring parameter for a wet scrubber that does not use a Venturi design for particulate matter emission control. In addition, U.S. EPA believes that the ratio of scrubbing liquid to flue gas treated (liquid-to-gas ratio) is an appropriate monitoring parameter for a wet scrubber. Therefore, pursuant to 40 CFR Sec. 60.13, U.S. EPA approves the following alternative continuous monitoring system (CMS) plan for the scrubber on Criterion's spray dryer:

1. Criterion must install, operate and maintain continuous monitoring system(s) to measure and record the ratio of total liquid (or scrubbing liquid) flow rate to the scrubber to the gas flow rate entering or exiting the scrubber (flue gas treated). This ratio of scrubbing liquid to flue gas treated is the "liquid-to-gas ratio." The continuous monitoring system(s) must be installed such that representative measurements of emissions or process parameters from the affected facility are obtained. The monitoring system(s) must meet the requirements of the General Provisions of Part 60. Additional procedures for location of the continuous monitoring system(s) which are contained in the applicable Performance Specifications of Appendix B of Part 60 must be used. 40 CFR Sec. 60.13 requires, among other things, that each CMS complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period (i.e., the liquid-to-gas ratio must be recorded each successive 15-minute period). The CMS must determine and record the hourly average liquid-to-gas ratio of all recorded readings from four or more data points equally spaced over each one-hour period. The owner or operator must determine and record once each day, from the recordings of the continuous monitoring device(s), an arithmetic average over a two-hour period of the liquid-to-gas ratio.

2. Within 180 days of startup of the wet scrubber, Criterion must conduct a performance test for particulate matter at the spray dryer in accordance with 40 C.F.R. Sec. 60.8. The performance test must consist of three test runs and the sampling time of each test run must be at least two hours. Criterion must notify U.S. EPA at least 30 days prior to conducting the performance test to allow U.S. EPA to review the protocol and to have an observer present during the test. During the performance testing, and using the continuous monitoring system(s), Criterion must measure and record the liquid-to-gas ratio at least every 15 minutes during the entire performance test and record the average liquid-to-gas ratio during each test run and the arithmetic average liquid-to-gas ratio of the three test runs. The operating limit established during the performance test must represent the conditions in existence when the wet scrubber and baghouses are being properly operated and maintained to meet the emission limitation.

3. Criterion must maintain records of the ratio of the scrubbing liquid to flue gas treated at the facility

for at least two years.

4. Criterion must submit reports of exceedances of the liquid-to-gas ratio semi-annually to U.S. EPA and the Indiana Department of Environmental Management as required by 40 CFR Sec. 60.735. Exceedances are defined as follows:

a. Any two hour period when the average liquid-to-gas ratio is less than 80 percent of the arithmetic average liquid-to-gas ratio of the three test runs of the most recent performance test that demonstrated compliance with the particulate matter standard in 40 CFR Part 60, Subpart UUU.

In addition, it is important to note that in Criterion's case, the baghouses are essential to achieve compliance with the particulate matter emission rate. Stack testing performed by Criterion shows that the baghouses achieve 98 percent efficiency of particulate removal. Therefore, the baghouses must also have monitoring systems in place that continuously monitor emissions and operations. 40 CFR Sec. 60.734(a) states, among other things, that with the exception of process units which use wet scrubbers to comply with the mass emission standard of Subpart UUU, the owner or operator who uses a dry control device to comply with the mass emission standard of Subpart UUU must install, calibrate, maintain and operate a continuous monitoring system to measure and record the opacity of emissions discharged into the atmosphere from the control device. We do not believe that the exception noted above applies to Criterion because the scrubber alone is not being used to comply with the mass emission standard. Therefore, Criterion must comply with both 40 CFR Sec. 60.734(a), which contains the monitoring requirements that apply to Criterion's baghouses and 40 CFR Sec. 60.734(d), which contains the monitoring requirements that apply to Criterion's wet scrubber.

Via this letter, we are approving an AMP for Criterion's wet scrubber which satisfies the requirements of 40 C.F.R. Sec. 60.734(d). Now Criterion must determine how it will comply with the monitoring provisions of Sec. 60.734(a) for the baghouses. For a baghouse, 40 CFR Sec. 60.734(a) requires the installation of a continuous opacity monitor to measure and record the opacity of emissions to the atmosphere. However, in the case of Criterion, it may not be feasible to measure the opacity at the outlet of the scrubber due to the interference from water from the wet scrubber. Therefore, Criterion may request alternative monitoring procedures to either continuously measure the opacity between the baghouses and the scrubber, or to measure alternative parameters. 40 CFR Sec. 60.13(i) specifically states that alternative monitoring procedures can be requested in the event that a monitoring system would not provide accurate measurements due to interference caused by liquid water; when alternative locations for installing continuous monitoring systems would enable accurate and representative measurements; or when the proposed continuous monitoring system adequately demonstrates a definite and consistent relationship between its measurements and the measurements of opacity. In any event, any proposed alternative monitoring plan should include a justification for the request and a description of the parameters you plan to measure and their proposed values for demonstrating compliance, the measurement techniques, the monitoring frequency, and the averaging time.

If you have any questions regarding this letter, please contact Linda H. Rosen, of my staff, at (312) 886-6810.

Sincerely yours,

George T. Czerniak, Chief
Air Enforcement and Compliance Assurance Branch

cc: Craig Henry, Acting Section Chief
Office of Enforcement-Air Section
Indiana Department of Environmental Management



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 0900006

Category: NSPS
 EPA Office: Region 5
 Date: 11/05/2008
 Title: Spray Dryer Controlled by Baghouse-Scrubber System
 Recipient: Burke, Michael
 Author: Czerniak, George T.
 Comments: See related applicability determinations filed as ADI Control Nos. 0900004 and 0900005.

Part 60, A	General Provisions UUU	Calciners and Dryers in Mineral Ind.
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References:	60.8
	60.13
	60.734
	60.735
	60.736

Abstract:

Q: Does EPA approve Criterion Catalyst's request, under 40 CFR part 60, subpart UUU, to monitor continuously at its spray dryer system in Michigan City, Indiana, the opacity of exhaust gases in the ductwork between the baghouse system and scrubber as an alternative to monitoring the opacity at the outlet of the scrubber?

A: Yes. Because the opacity at the scrubber outlet cannot be measured accurately with a monitor due to interference caused by liquid water, EPA approves the use of a continuous opacity monitoring system (COMS) under NSPS subpart UUU for the measurement of the opacity of the exhaust gases in the ductwork between the baghouse system and scrubber.

Letter:

AE-17J

Mr. Michael Burke
 Plant Manager
 Criterion Catalysts & Technologies, LP
 1800 E. US 12
 Michigan City, Indiana 46360-2098

Re: Alternative Monitoring Plan for NSPS Part 60, Subpart UUU

Dear Mr. Burke:

Thank you for your letters dated January 31, 2008, July 14, 2008, July 30, 2008, and October 14, 2008, and numerous follow up electronic mail to and phone calls with the U.S. Environmental Protection Agency, regarding your request for approval of an alternative to the monitoring requirements found in the Standards of Performance for Calciners and Dryers in Mineral Industries ("NSPS"), 40 CFR Part 60, Subpart UUU. Criterion Catalysts & Technologies ("Criterion") operates a spray dryer system that is subject to the NSPS. The spray dryer system is equipped with three baghouses ("baghouse system") followed by a non-Venturi type wet scrubber. In a previous letter dated September 6, 2007, EPA approved an alternative monitoring plant ("AMP") for Criterion's wet scrubber. In that letter, EPA informed Criterion that since the facility is relying on the baghouse system in addition to the scrubber to achieve compliance with the particulate matter emission limit in the NSPS at 40 CFR Sec. 60.732, the facility needs to comply with the monitoring requirements in 40 CFR Sec. 60.734(a) for the baghouse system or request approval of an AMP.

Via the January 31, 2008, letter, Criterion requested to continuously monitor the opacity of exhaust gases in the ductwork between the baghouse system and scrubber as an alternative to monitoring the opacity at the outlet of the scrubber. According to Criterion, the opacity of the emissions at the outlet of the scrubber cannot be measured accurately with an opacity monitor due to interference caused by liquid water in the exhaust gases from the wet scrubber. Criterion conducted stack testing in November and December 2007 to establish alternative parameters for its baghouse system and scrubber and has used this data to support its request to EPA for approval of its proposed AMP for the baghouse system.

Scrubber System

Criterion must comply with the AMP memorialized in the September 6, 2007, letter from EPA to Criterion. Regarding the average value of the liquid-to-gas ("L/G") ratio determined from the November and December 2007 performance testing, Criterion should compute the arithmetic average L/G ratio of all six test runs (measured at least every 15 minutes) to establish the L/G ratio average value. Following this requirement, the L/G ratio average value is 0.005972 gallons per minute scrubbing liquid per pounds of gas per hour, based on data from the November and December 2007 performance testing and emailed to Ms. Linda Rosen, of my staff, on October 2 and 13, 2008. Exceedances of the L/G operating parameter would be defined as any two hour period when the average L/G ratio is less than 80 percent of the average L/G ratio from all measurements of the test runs in the most recent performance test that demonstrates compliance, or in this case, 0.004778.

Baghouse System

40 CFR Sec. 60.13(i) specifically states that alternative monitoring procedures can be requested in the event that a monitoring system would not provide accurate measurements due to interference caused by liquid water; when alternative locations for installing continuous monitoring systems would enable accurate and representative measurements; or when the proposed continuous monitoring system adequately demonstrates a definite and consistent relationship between its measurements and the measurements of opacity.

Based on the information provided by Criterion, EPA approves Criterion's operation of a continuous opacity monitor system ("COMS") for the measurement of the opacity of the exhaust gases in the ductwork between the baghouse system and the scrubber.¹ Criterion must install, calibrate, maintain, and operate such COMS in accordance with the requirements of 40 CFR Part 60, including the General Provisions of Part 60 and the applicable Performance Specifications in Appendix B of Part 60. Per 40 CFR Sec. 60.13(e)(1), all COMS must complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive six-minute period. Criterion must determine and record the average opacity from at least 720 or more data points (20 six-minute recorded averages) equally spaced over each two-hour period.

To establish the average opacity baseline value, Criterion must conduct performance testing in accordance with 40 CFR Secs. 60.8 and 60.736. The performance test must consist of at least three test runs and the sampling time of each test run must be at least two hours. The COMS must complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive six-minute period. The COMS must determine and record the average opacity from 720 or more data points (20 six-minute recorded averages) equally spaced over each two-hour test run. Criterion must then determine the arithmetic average opacity value from three (or more) test runs. The opacity established during the performance test must represent the conditions in existence when the wet scrubber and baghouses are being properly operated and

maintained to meet the emission limitation.

Criterion conducted performance testing on the spray dryer in November and December 2007 which demonstrated compliance with the particulate matter emission standard of 40 CFR Part 60, Subpart UUU. The facility conducted six two-hour test runs and conducted continuous opacity monitoring during each two-hour test run. The facility recorded the average six-minute opacity values over each two-hour test run period and determined the average opacity (from 20 six-minute averages) for each test run.

As requested by Criterion and for this performance test only, EPA will allow Criterion to use only the first three test runs from the November 2007 test to determine the average opacity value for the following reasons: (1) the November 2007 resulted in higher emission values than the December 2007 test and these higher emission rates demonstrated compliance with Subpart UUU; and (2) Criterion produces the product made in the November 2007 test about 65 percent of the time. In the future, Criterion must calculate the average opacity value from all valid test runs of a compliant performance test unless the federal or state regulatory agencies determine otherwise.

The arithmetic average opacity value for the three November 2007 test runs was 9.32 percent. The opacity at the monitor was calculated from the opacity at the stack by correcting the data for the differences in path lengths between the monitor (4 inches) and the stack (3 inches). Using Equation 1-7 in 40 CFR Part 60, Appendix B, Performance Specification 1, the opacity at the monitor for the November 2007 test, averaged over the three runs, is 12.17 percent. EPA then approved Criterion's use of a statistical analysis to determine the opacity value corresponding to the 99 percent Upper Confidence Level ("UCL") of a normal distribution of average opacity values.² The monitor opacity value that corresponds to the 99 percent UCL of the data is 14.02 percent. Based on the November 2007 performance test, EPA approves the use of 14.02 percent as the baseline average opacity value by which excess opacity is calculated. Excess opacity will be defined as any and all two-hour periods during which the average opacity between the baghouse system and the scrubber, measured at the monitor, is greater than the arithmetic average opacity of at least three test runs of the most recent performance test that demonstrated compliance with the particulate matter emission standard in 40 CFR Part 60, Subpart UUU (in this case 14.02 percent opacity). Criterion must submit reports of opacity exceedances to EPA and IDEM as required by 40 CFR Sec. 60.735 and must follow the recordkeeping and reporting requirements of 40 CFR Sec. 60.735. Per the NSPS, Criterion must maintain records of the opacity measured by the COMS for at least two years.

EPA has the right to rescind approval of this AMP if, among other things, information is obtained which contradicts assumptions or data submitted by Criterion, or if process or control operating conditions prove to be different than those used to establish this AMP. This AMP approval is site-specific to Criterion's NSPS spray dryer system located in Michigan City, Indiana.

If you have any questions regarding this letter, please contact Linda H. Rosen, of my staff, at (312) 886-6810.

Sincerely yours,

George T. Czerniak
Chief
Air Enforcement and Compliance Assurance Branch

cc: Craig Henry, Acting Section Chief
Office of Enforcement-Air Section
Indiana Department of Environmental Management

Phil Perry, Chief
Office of Air Quality
Indiana Department of Environmental Management

¹ Criterion has requested of EPA that the opacity at the monitor, rather than the stack, be used as the operating parameter value. EPA agrees that this is appropriate because the gases between the baghouse and scrubber are enclosed in the duct and have not been emitted to the stack.

² The equation is [Average Opacity + (T Test Value X Standard Deviation/Square Root of Number of Samples)]. In this case, the average opacity is 12.17, the t test value is 2.391 (from statistical tables

based on 59 degrees of freedom), the standard deviation is 6.0024, and the number of samples is 60.



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 9400008

Category: NSPS
EPA Office: Region 6
Date: 12/09/1993
Title: Subpart UUU-Research Calciners
Recipient: Steve Knis
Author: Stanley Meiburg

Subparts: Part 60, UUU, Calciners and Dryers in Mineral Ind.

References: 60.730

Abstract:

Can a research calciner be exempt from NSPS subpart UUU?

No. There is no exemption provided for research calciners in subpart UUU. This calciner meets the definition of an affected facility and is subject to all requirements of NSPS subpart UUU.

Letter:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

December 9, 1993

Mr. Steve Knis
Senior Environmental Specialist
DOW U.S.A.
The Dow Chemical Company
2301 N. Brazosport Blvd.
Freeport, Texas 77541-3257

Re: Request for Determination of Applicability of NSPS UUU to Research Calciner, Dow Chemical Company

Dear Mr. Knis:

EPA has evaluated Dow's request letter dated September 2, 1993, in which you requested determination of applicability of NSPS 40 C.F.R. Part 60 Subpart UUU, for the research calciner at Dow Chemical Company, Freeport, Texas.

Based upon information furnished in Dow's letters dated December 21, 1992, and September 2, 1993, and conversations held with Becky Holland and yourself, Dow has a calciner that was constructed, modified or reconstructed after April 23, 1986, at its mineral (Magnesium Chloride) processing plant which processes or produces greater than 50 percent magnesium and magnesium compound. NSPS Subpart UUU applies to each calciner and dryer at a mineral processing plant, that was constructed, modified or reconstructed after April 23, 1986. A mineral processing plant as defined in 60.731 means, 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.....magnesium compound....and vermiculite. Therefore, the conclusion made by Becky Holland of Dow in the December 21, 1992, letter is correct. The calciner being operated as part of your research project is subject to Subpart UUU and all applicable provisions therein.

In response to the second part of your request regarding performance compliance testing, EPA cannot waive the testing requirement on the basis of the rationale provided. Since the calciner was not a part of the affected facility at the time of the Boiler and Industrial Furnace (BIF) compliance testing, a performance test is required in accordance with 40 C.F.R. 60.736(b)(1) and (2). If a wet scrubber is used to control emissions, the visible emissions standard would not apply. Instead, 60.736(c) shall be used to determine compliance with the particulate standards. Monitoring and reporting of the operating parameters of wet scrubbers (pressure drop and liquid flow rate) would be required to indicate that the control device is properly operated and maintained on a routine basis.

If you should have any questions regarding this letter or need additional information, you may contact Ms. Agatha Bell Benjamin, P.E., of my staff at (214) 655-7292.

sincerely yours,

signed

A. Stanley Meiburg
Director
Air, Pesticides & Toxics Division (6T)

Enclosure

cc: E. Gregg Collier, Group Leader
Environmental Air Group
Dow Chemical Company

Jeanne Philquist, Manager
Compliance Section
TNRCC

Allen Parker, Regional Manager
TNRCC
Bellaire, Texas

John Rasnic
Director
SSCD

Belinda Breidenbach



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 9600025

Category: NSPS
EPA Office: Region 6
Date: 06/26/1996
Title: Alt. Opacity Monitoring, Subpart UUU
Recipient: Garnett, Nancy
Author: Hepola, John

Subparts: Part 60, A, General Provisions
Part 60, UUU, Calciners and Dryers in Mineral Ind.

References: 60.11
60.732
60.736
60.8

Abstract:

Q: Will EPA approve a continuous particulate monitoring system at a newly constructed Subpart UUU dryer as an alternative to continuous opacity monitoring or daily Method 9 visible emissions monitoring?

A: EPA approves the alternative monitoring system for a period of two to three years. During this time, the alternative monitoring system may provide the necessary data and operational experience allowing us to approve the system permanently. The system shall provide data to oversee compliance with the 10 percent opacity limit required in 40 CFR section 60.732(b).

Letter:

June 28, 1996

Ms. Nancy Garnett, P.E.
Texas Industries, Inc.
1341 W. Mockingbird Lane
Dallas, TX 75247-6913

Dear Ms. Garnett:

This letter is in response to your March 12, 1996 request to the Texas Natural Resource Conservation Commission (TNRCC) for approval of an alternate opacity monitoring method under Subpart UUU of the New Source Performance Standard (NSPS) at Texas Industries' (TXI's) Austin Green Sakrete Plant. On May 6, 1996, the TNRCC forwarded your request to the Environmental Protection Agency (EPA) Region 6 for our review and response. The EPA has reviewed your request, and we are providing this response.

EPA conditionally approves Texas Industries' use of the continuous particulate monitoring system at the newly constructed dryer as an alternative to continuous opacity monitoring or daily Method 9 visible emissions monitoring. We approve the alternative monitoring system for a period of two to three years. During this time, the alternative monitoring system may provide the necessary data and operational experience allowing us to approve the system permanently. The system shall provide data to oversee compliance with the 10 percent opacity limit required in 40 CFR section 60.732(b).

Initial compliance with the 10 percent opacity limit shall be determined by performance testing in accordance with 60.8 and 60.11. Conduct opacity observations in accordance with Reference Method 9 of Appendix A to 40 CFR part 60. In addition, you are required to conduct compliance testing with the particulate matter standard of 0.092 g/dscm required in 60.732(a). Reference Method 5 shall provide the performance test procedure as directed in 60.736(b)(1). Please be advised of the time constraints for performance testing detailed in 60.8(a).

Soon after installation of the continuous particulate matter monitor, EPA requires certification of the system. The EPA has not established a procedure to certify a continuous particulate matter monitor to read opacity. We understand that you are currently working with the TNRCC to develop such a certification procedure. We would like to work with both you and the TNRCC to develop a certification procedure.

The installation and operation of a continuous particulate matter monitoring system on your newly constructed dryer provides a unique opportunity to evaluate the system's ability to measure particulate matter continuously. You are not required to conduct performance testing of the system to determine its ability to measure particulate matter. However, we encourage you to explore the opportunity while using Reference Method 5 to measure particulate matter. We will contact you to further discuss the possibilities.

If you have any questions regarding this response to your March 12, 1996 request to the TNRCC, please contact Daniel Meyer of my staff at (214) 665-7233.

Sincerely,

/s/

John R. Hepola
Chief
Air/Toxics and Inspection
Coordination Branch

cc: Scott Throwe (OECA)
John Survis (TNRCC)
Jeanne Philquist (TNRCC)



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 9600060

Category: NSPS
EPA Office: METD
Date: 10/30/1995
Title: Monitoring Requirements
Recipient: Regional Directors
Author: Rasnic, John

Subparts: Part 60, UUU, Calciners and Dryers in Mineral Ind.

References: 60.734

Abstract:

Q. Can dryers and calciners used to process alumina at metal catalyst production and reprocessing facilities be exempt from the monitoring requirements of Subpart UUU?

A. To the extent that metal catalyst production facilities can show their potential emissions to be less than 11 tons, they are exempt from monitoring requirements; various monitoring requirements apply to those in larger size categories.

Letter:

MEMORANDUM

SUBJECT: Applicability of NSPS Subpart UUU to Metal Catalyst Producers and Processors

FROM: John B. Rasnic, Director
Manufacturing, Energy and Transportation Division Office of Compliance

TO: Director, Air, Pesticides and Toxics Management Division, Regions I and IV Director, Air and Waste Management Division, Region II Director, Air, Radiation and Toxics Division, Region III Director, Air and Radiation Division, Region V Director, Air, Pesticides and Toxics Division, Region VI Director, Air and Toxics Division, Regions VII, VIII, IX, X Regional Counsels I-X

The purpose of this memorandum is to address an issue concerning Subpart UUU, Standards of Performance for Calciners and Dryers in Mineral Industries. Specifically, an inquiry was sent to the Agency requesting that dryers and calciners used to process alumina at metal catalyst production and reprocessing facilities be exempted from the monitoring requirements of Subpart UUU.

The preamble to the final rule describes the analysis process followed in the rule's development. Emissions from the operation of the industry's equipment were analyzed, and a cost study was performed to determine the appropriateness of installing a Continuous Opacity Monitoring System (COMS), or of requiring a Method 9 visible emissions test. On the basis of this analysis, it was determined that units with potential emissions equal to or greater than 22.7 Mg/yr (25 tons/yr) must install COMS. Units with emissions less than 22.7 Mg/yr (25 tons/yr) but greater than 10.0 Mg/yr (11 tons/yr) may perform daily visible emission observations. Finally, the preamble states that units with emissions less than 10.0 Mg/yr (11 tons/yr) should be exempt from any opacity monitoring requirements. Section 60.734(c) of the regulation provides a list of specific equipment types appropriate to this last category.

Consequently, metal catalyst production and reprocessing facilities that process alumina and emit less than 10.0 Mg/yr (11 tons/year) are exempt from the monitoring requirements of Subpart UUU. Metal catalyst production facilities subject to Subpart UUU must keep available appropriate documentation sufficient to establish that their emissions are less than 11 tons.

If you have any questions, please contact Keith Brown of my staff at (202) 564-7124.

cc: Ken Durkee, OAQPS
Bill Neuffer, OAQPS



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 9600084

Category: NSPS
EPA Office: METD
Date: 05/29/1996
Title: Opacity and Particulate Monitor
Recipient: Hepola, John
Author: Rasnic, John

Subparts: Part 60, UUU, Calciners and Dryers in Mineral Ind.

References: 60.732
60.734

Abstract:

Q: Will EPA approve an alternative monitoring system which is capable of monitoring both opacity and mass particulate matter emissions at a Subpart UUU source?

A: Yes, the source may use the alternative system for 2 to 3 years to allow EPA and the state to evaluate the reliability of the system. EPA believes the system may provide valuable information regarding compliance with mass particulate emissions as well as opacity.

Letter:

MEMORANDUM

SUBJECT: Texas Industries' Alternative Particulate Matter Monitoring Proposal

FROM: John B. Rasnic, Director
Manufacturing, Energy and Transportation Division
Office of Compliance

TO: John Hepola, Chief
Air, Toxics and Inspection Coordination Branch
Region VI

This memorandum is in response to Texas Industries'(TXI) request to the Texas Natural Resource Conservation Commission for an alternative method to monitor particulate matter emissions from a dryer subject to 40 CFR Part 60, Subpart UUU - Standards of Performance for Calciners and Dryers in the Minerals Industry. As an alternative to conducting Reference Method 9 to determine compliance with an

opacity limit, TXI is interested in installing a continuous particulate monitor which can monitor opacity and mass particulate matter.

Although, TXI's primary interest is to use this monitor in lieu of Method 9, we believe the system's ability to monitor mass particulate matter emissions can also provide us valuable information regarding compliance with mass standards. Since many of the rules being developed under section 112 of the Clean Air Act include mass emission standards for particulate matter, we are interested in monitoring systems that may be capable of continuously monitoring particulate mass emissions. Therefore, we will allow TXI to use this monitoring system for a specified period after which time we will evaluate the reliability of the system.

We recently allowed a Coors facility in Tennessee to install a similar particulate matter monitor for the purpose of receiving first hand information about these systems. In that situation, we recommended that the Agency conditionally approve the alternative monitoring system for a period of time (2 to 3 years) to provide the necessary data and operational experience which would allow us to approve the system permanently. I recommend that we proceed in the same fashion and conditionally allow TXI to install the continuous particulate concentration monitoring system to oversee compliance with the 10 percent opacity limit required in 40 CFR section 60.732(b). We recommend that TXI be required to conduct Reference Method 9 testing as part of an initial certification. In addition, any Reference Method 5 tests that TXI performs should be evaluated against the monitoring system's mass particulate readings to assess the effectiveness of the system. We suggest that your office coordinate with OAQPS to determine what information they may need to assist them in their ongoing efforts in evaluating this type of monitoring system.

As you indicated in your memorandum, initial certification and ongoing quality assurance procedures would be necessary for this alternative system. TXI should work with the monitoring vendor to submit proposed procedures for the Agency for review.

I believe that consideration of these alternative monitoring systems will be a valuable first step in moving the Agency toward continuous monitoring of particulate matter mass emissions. We look forward to working with you on this effort. If you have any questions, please contact Scott Throwe of my staff at (202) 564-7013.



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 9600085

Category: NSPS
EPA Office: METD
Date: 08/03/1995
Title: Opacity and Particulate Monitor
Recipient: Smith, Winston
Author: Rasnic, John

Subparts: Part 60, UUU, Calciners and Dryers in Mineral Ind.

References: 60.732

Abstract:

Q: Will EPA approve an alternative monitoring system which is capable of monitoring both opacity and mass particulate matter emissions at a Subpart UUU source?

A: Yes, the source may use the alternative system for 2 to 3 years to allow EPA and the state to evaluate the reliability of the system. EPA believes the system may provide valuable information regarding compliance with mass particulate emissions as well as opacity.

Letter:

MEMORANDUM

SUBJECT: Coors Technical Ceramics Company Alternative Opacity Monitoring Proposal

FROM: John B. Rasnic, Director
Manufacturing, Energy and Transportation Division
Office of Compliance

TO: Winston A. Smith, Director
Air, Pesticides, and Toxics
Management Division
Region IV

The purpose of this memorandum is to respond to your July 11, 1995, memorandum regarding a request for comments on a proposal to use a continuous particulate concentration monitor in place of a continuous opacity monitor (COM). The alternative is being requested for the Coors Technical Ceramics Company in Oak Ridge, Tennessee, which is subject

to 40 CFR Part 60, Subpart UUU - Standards of Performance for Calciners and Dryers in the Minerals Industry. Section 60.734(a) of 40 CFR requires the installation of an in-stack opacity monitor for affected facilities utilizing dry control devices. Opacity is monitored in Subpart UUU as a means for ensuring that the particulate control device continues to operate properly. Since Subpart UUU has both an opacity and mass particulate matter limit, we have the latitude to consider this type of monitoring system.

We agree with Region IV that using a monitor that can directly measure particulate concentration has advantages over using an opacity monitor. As you stated in your memorandum, if the alternative system provides accurate results, data from the system would be a better indicator of particulate compliance than data from an opacity monitor. In addition, since many of the rules being developed under section 112 of the Clean Air Act include mass emission standards for particulate matter, we are interested in monitoring systems that may be capable of directly monitoring particulate mass emissions. For these reasons, we would be interested in allowing Coors to use this monitoring system for a specified period after which time we would evaluate the monitoring system against periodic opacity readings and particulate testing results.

In an effort to better understand the capabilities of the monitoring system in question, we have had several discussions with your staff, Coors, the State of Tennessee, The Office of Air Quality Planning and Standards (OAQPS), and the monitoring system vendor BHA. We believe that the monitoring system has the capabilities to be an acceptable alternative monitoring system. Therefore, we recommend that the Agency conditionally approve the alternative monitoring system for a period of time (2 to 3 years) which is sufficient to provide the necessary data and operational experience which would allow us to approve the system permanently. Coors would be allowed to install the continuous particulate concentration monitoring system to oversee compliance with the mass particulate limit of 0.092 grams per dry standard cubic meter required in 40 CFR section 60.732(a). Coors would be required to conduct periodic Reference Method 9 tests as an alternative to a COM to monitor compliance with the 10 percent opacity limit required in 40 CFR section 60.732(b). In addition, we recommend that Coors be required to conduct Reference Method 5 testing as part of an initial certification and subsequently conduct Method 5 tests on at least an annual basis as a method of evaluating the effectiveness of the system. We suggest that your office coordinate with OAQPS to determine what information they may need to assist them in their ongoing efforts in evaluating this type of monitoring system.

As you indicated in your memorandum, initial certification and ongoing quality assurance procedures would be necessary for this alternative system. We agree that it would be appropriate for Coors and BHA to submit proposed procedures for the Agency for review.

I believe that consideration of this alternative monitoring system will be a valuable first step in moving the Agency toward direct monitoring of particulate matter mass emissions. We look forward to working with you on this effort. If you have any questions, please contact Scott Throwe of my staff at (202) 564-7013.



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 9700021

Category: NSPS
EPA Office: Region 4
Date: 10/21/1994
Title: Tilecera-Subpart UUU Applicability
Recipient: Walton, John
Author: Smith, Winston

Subparts: Part 60, OOO, Nonmetallic Mineral Processing
Part 60, UUU, Calciners and Dryers in Mineral Ind.

References: 60.731

Abstract:

Q. Is a ceramic tile manufacturing facility subject to either Subpart 000 or Subpart UUU?

A. The facility is not subject to Subpart 000 since no crushing or grinding takes place there. However, the spray dryer at the facility is subject to Subpart UUU since it processes minerals that are covered by this subpart. Sources for which EPA did not establish a separate source category may be regulated as part of another source category. The regulations do not distinguish between primary, secondary, and tertiary nonmetallic mineral processing, so the fact that the facility processes refined minerals does not preclude it from being covered by Subpart UUU. The economic hardship alleged by the facility to be associated with controls for its particular process cannot be used as a justification for exempting its spray dryer from Subpart UUU.

Letter:

4APT-AEB OCT 2 1 1994

Mr. John W, Walton
Director
Division of Air Pollution Control
Tennessee Department of Environment and Conservation L & C Annex, 9th Floor 401
Church Street Nashville, TN 37243-1531

SUBJ: Request by TileCera, Inc. (TI), Clarksville, TN for Determination of Applicability of New Source Performance Standards (NSPS), Subpart OOO and Subpart UUU

Dear Mr. Walton:

This is to acknowledge TI's September 19, 1994, letter, requesting a formal Environmental Protection Agency (EPA) determination regarding the applicability of NSPS 40 CFR Part 60, Subpart OOO (Standards of Performance of Nonmetallic Mineral Processing Plants), and Subpart UUU (Standards of Performance for Calciners and Dryers in Mineral Industries) to their Clarksville facility. We have reviewed their request and based on the information provided by the company, we have determined that NSPS Subpart OOO is not applicable to this facility. However, we have determined that the spray dryer at this facility is subject to NSPS Subpart UUU.

In its attempt to demonstrate that neither subpart is applicable to operations at this facility, the company has presented three arguments. Each argument is summarized below and followed by our response:

Argument I:

"In 1982, EPA determined that ceramic clay manufacturing industries did not constitute a source category which caused or contributed significantly to air pollution under 42 U.S.C. 7411(b)(1)(A). Therefore, ceramic tile manufacturing facilities cannot be subject to NSPSs under 7411(b)(1)(B)." TI contends that: (a) In establishing a sequence for promulgating NSPS for major source categories, the Administrator was required to prioritize these categories based upon the air pollutant emitted by the category, its threat to the public health and the mobility and competitive nature of each category as it relates to the need for NSPS.

(b) On August 21, 1979, the Administrator promulgated a "Priority List" of categories of major stationary sources as required by 7411(f) Ceramic Clay Manufacturing was ranked 47th on this list.

(c) In August of 1980, EPA published a document entitled "Source Category Survey Ceramic Clay Industry" (Survey). The stated purpose of this Survey was to "... determine the need for NSPS for the ceramic clay industry in accordance with 7411." The Survey focused on six industries which also included ceramic wall and floor tile manufacturing. The Survey concluded with the recommendation to the Administrator that no new NSPS be developed for the ceramic clay industry.

(d) In accordance with the recommendation of the Survey, the Administrator on January 8, 1982, deleted from the "Priority List", along with 11 other categories, Category "No. 47", "Ceramic Clay Manufacturing." There has been no action by the Administrator since that time to place "Ceramic Clay Manufacturing" back on the "Priority List" as a significant contributor to air pollution.

Response to Argument I:

The fact that the Administrator deleted "Ceramic Clay Manufacturing from the "Priority List" indicates it may not have warranted regulation as a separate source category. This does not, however, prevent this source category from being regulated as part of another source category. For example, regulations for calciners and dryers cover many industries which are not regulated as separate source categories. Therefore, the deletion of ceramic clay manufacturing from the priority list in 1982 does not prevent the spray dryer at TileCera from being regulated under NSPS Subpart UUU.

Argument II:

"Even if the Administrator is not legally barred from applying NSPSs to the industries in the ceramic clay manufacturing category, Subparts 000 and UUU do not apply to "Ceramic Clay Manufacturing" at TileCera." Concerning these subparts, TileCera states that: (a) Subpart 000: Facilities to which Subpart 000 standards apply are those facilities which are essentially engaged in the "crushing" or "grinding of nonmetallic minerals into a refined product. The company contends that there is no "crushing" or "grinding" at TileCera; therefore, it is not subject to the provisions of this subpart.

(b) Subpart UUU: The affected facility to which this subpart apply is each calciners and dryer at a mineral processing plant. However, TileCera claims that the background information document (BID) prepared in conjunction with the promulgation of Subpart UUU (BID-UUU), describes in great detail the manufacturing process of these 17 targeted industries. Each description is of a process resulting in the production of refined minerals for use in construction or other manufacturing processes. Each process is generally described as the downsizing of a mined mineral from large chunks to a refined product. The processes involve the use of crushers, grinders, hammer mills and screening devices in the downsizing process.

Consequently, TileCera cites two reasons why it does not consider their facility as being subject to this subpart. First, the "Ceramic Clay Manufacturing" category was not included in the list of six categories for which the standards are stated to specifically apply. Second, the "Ceramic Clay Manufacturing" category, as more fully set forth, is composed of industries which, unlike those targeted by Subpart UUU, do not produce a refined mineral product, or a product from an unrefined mineral, such as brick refractories. The company contends that they are a secondary mineral processing facility and therefore, the spray dryer at TileCera is not subject to this subpart.

Response to Argument II:

(a) Subpart 000: We concur with the company's conclusion that Subpart 000 would not be applicable to TileCera's Clarksville plant, if no "crushing or grinding" takes place in the manufacturing processes at the Clarksville facility.

(b) Subpart UUU: Although it is TI's opinion that the "Ceramic Clay Manufacturing category was not included in the list of six categories for which the standards are stated to specifically apply, we believe the spray dryer at TileCera is subject to Subpart UUU, since it dries (processes) minerals that are covered by this subpart. In a memo dated May 19, 1993, (a copy of the memo is enclosed), it was determined that the regulations do not distinguish between primary, secondary, or tertiary nonmetallic mineral processing. Therefore, we have determined that the fact TileCera processes refined materials does not preclude the company from being regulated under Subpart UDU .

Argument III:

"Irrespective of the Administrators authority to promulgate NSPSs for industries within the "ceramic clay manufacturing" category or the applicability of Subparts 000 and UUU to the category, the subparts do not apply to TileCera's facility". To support this argument TileCera states the following:

(a) Subpart OOO. The company has concluded that it has not "constructed" an "affected facility" covered by Subpart OOO, since there is no "crushing" or "grinding" occurring at this facility.

(b) Subpart UUU. Again, the company restates that it does not downsize mined minerals by "crushing or grinding" as normally associated with the process of producing a refined mineral product. Rather, several pre-processed refined mineral products are homogenized and blended with water on a ball mill, followed by spray drying.

Secondly, though TileCera employs a dryer in its manufacturing process, it does not consider this dryer as being subject to the provisions of this subpart. The reason for this conclusion, according to TileCera, is that the purpose of this dryer is completely different than that utilized in the production of refined minerals. According to TI, water is added to the minerals in the ball mill to form a homogenous mixture. The material or slip produced in the ball mill is later pumped into the spray dryer where water is removed under a controlled environment to form a prill. The prill is later pressed into tile forms and put into a vertical dryer prior to glazing and kilning.

Finally, the company claims that the cost per annual ton of particulate matter reduced to meet emission standards in 60.732(a) is significantly disproportional to that of the average nonmetallic mineral processing plant. The company estimates a capital investment of \$595,056 to install control devices resulting in an annual cost of \$4,055 per ton of particulate matter removed, if it is required to meet the NSPS standard of 0.025 gr/dscf, rather than the current limitation of about 0.041 gr/dscf. The economic analysis performed by EPA in developing Subpart UUU was estimated to be \$1,217 per ton of particulate matter removed.

Response to Argument III:

(a) Subpart OOO: Again, we concur with the company's conclusion that TileCera is not an "affected facility" covered by NSPS Subpart OOO because there is no "crushing or grinding" at the facility.

(b) Subpart UUU: The company's conclusion that it is not downsizing mineral materials by "crushing or grinding" before drying has no bearing on the drying operation itself. The "crushing or grinding" of mineral materials before drying is not a prerequisite for the spray dryer being subject to this subpart.

The spray dryer at TileCera would be subject to Subpart UUU, if it is removing uncombined water from mineral material through direct or indirect heating, regardless of the type of product it produces. Subpart UUU does not regulate the crushing or grinding of mineral material, rather it regulates the calcining and drying of the minerals listed in the definition of "Mineral Processing Plant" at 40 CFR 60.731.

During the development of NSPS Subpart UUU, EPA performed an economic analysis and it was determined that it is economically feasible for a new source to comply with the standards contained in this subpart. EPA does not use a case-by-case economic analysis to determine applicability of a subpart to new sources once an NSPS has been promulgated. Therefore, the cost of installing a high efficiency fabric filter at TileCera cannot be used as a justification to exempt the spray dryer from complying with the provisions of Subpart UUU.

If you have any questions or comments regarding the determination provided in this letter, please contact Mr. Mirza P. Baig of my staff at (404) 347-3555, voice mail extension 4147.

Sincerely yours,

Jewell A. Harper
Chief
Air Enforcement Branch
Air, Pesticides and Toxics
Management Division

Enclosure



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 9700038

Category: NSPS
EPA Office: Region 4
Date: 03/29/1996
Title: Opacity Monitor Placement-Fluid Bed Dryer
Recipient: Wylie, Dwight
Author: Harper, Jewell

Subjects: Part 60, UUU, Calciners and Dryers in Mineral Ind.

References: 60.734

Abstract:

Q. Will EPA approve the use of a biennial particulate stack test in lieu of using a COM or daily Method 9 tests at a fluid bed dryer subject to Subpart UUU?

A. No. If the presence of water in the stack from the scrubber used to neutralize gases after the baghouse interferes with the approved monitoring methods, the company should use a COM between the baghouse and the scrubber. A biennial stack test would not provide enough information on how the baghouse, on which compliance depends, is working.

Letter:

4ATP-AEB Mar 29, 1996

Mr. Dwight K. Wylie, P.E.
Chief
Air Quality Division
Office of Pollution Control
Mississippi Department of Environmental Quality P.O. Box 10385 Jackson, Mississippi
39289-0385

SUBJ: Alternative Opacity Monitoring Proposal for a Dryer in the Synthetic Rutile Recovery Plant Operated by the Kerr-McGhee Chemical Corporation, Hamilton, Mississippi

Dear Mr. Wylie:

This letter is in response to your February 28, 1996, request for comments on the referenced proposal. The pollution control system for the dryer in the synthetic utile recovery plant at Kerr-McGhee consists of a baghouse for particulate emissions followed by a caustic scrubber in which acid gases are neutralized. Because of water droplet interference in the exhaust stack after the scrubber, Kerr-McGhee is proposing to conduct a biennial particulate stack test in lieu of installing and operating a continuous opacity monitor (COM). After considering this proposal, Region 4 has determined that if the company cannot collect visible emission data at the scrubber exhaust stack on a daily basis, it should install, certify, and operate a COM between the baghouse and the scrubber.

According to your letter, the fluid bed dryer at the Kerr-McGhee facility in Hamilton, Mississippi is used for drying material containing titanium dioxide and is subject to 40 C.F.R. Part 60, Subpart UUU (Standards of Performance for Calciners and Dryers in the Mineral Industries). Under the monitoring provisions in 40 C.F.R. 60.734, owners or operators of titanium dioxide fluid bed dryers that use a dry control device for particulate emissions may monitor control device performance by either installing and operating a COM or by collecting 18 minutes of VE data each operating day using U.S. Environmental Protection Agency Method 9. If a wet scrubber is used to control particulate emissions from a calciners or dryer subject to Subpart UUU, 40 C.F.R. 60.734(d) requires that equipment to continuously monitor scrubber pressure drop and liquid flow rate be installed and operated.

Since particulate emissions at Kerr-McGhee are controlled with dry control system (i.e., the baghouse), the company must either install a COM or collect VE data on a daily basis. The company contends that neither of these options is appropriate due to the presence of water droplets in the stack and a steam plume at the stack exit. As an alternative to the monitoring required under Subpart UUU, the company is proposing to conduct a biennial particulate stack test to confirm that the baghouse is operating properly. To support this approach, the company also indicates that emissions during a stack test conducted at the facility (0.004 gr/dscf) were well below the applicable standard of 0.025 gr/dscf.

After considering the monitoring alternative proposed by Kerr-McGhee, Region 4 has concluded that it should not be approved because it will not provide as much information on the operation of the scrubber as either of the monitoring options under Subpart UUU. If a COM is used for monitoring, data is obtained continuously, and if VE data is used for monitoring the performance of the control system, readings are obtained on a daily basis. Under the Kerr-McGhee proposal, however, data to confirm proper operation of the baghouse would be obtained only once every two years.

Although Region 4 agrees that emissions during the stack test conducted on the dryer were low, we believe that these emissions were low due to the high efficiency of the baghouse at the plant. According to the information in the alternative monitoring proposal from Kerr-McGhee, the efficiency of the baghouse exceeds 99.9 percent. Based upon the results of the stack test and an assumed baghouse efficiency of 99.9 percent during the test, the facility would be out of compliance with the particulate emission standard in Subpart UUU if the baghouse efficiency drops below 99.375 percent. In addition, although the particulate emission rate during the stack test conducted at the facility was low (0.12 lb/hr), Region 4 does not consider the dryer to be an insignificant source since an emission rate of 0.12 lb/hr after controls corresponds to an uncontrolled emission rate of 120 lb/hr (525 tons/yr) at a control device efficiency of 99.9 percent.

Because compliance with the emission standard in Subpart UUU is so dependent on the performance of the baghouse, Region 4 does not believe that a biennial stack test is frequent enough to verify that the control system is operating properly. Therefore, if collecting VE data on a daily basis at the exit of the caustic scrubber is not an option, Kerr-McGhee should install, certify, and operate a COM between the baghouse and the scrubber. Installing the monitor in this location will avoid interference due to water droplets and will allow the company to document that its primary particulate control device (i.e., the baghouse) is operating properly on a continuous basis.

If you have any questions about the determination provided in this letter, please contact Mr. David McNeal of my staff at 404/347-3555, extension 4158.

Sincerely yours,

Jewell A. Harper
Chief
Air Enforcement Branch
Air, Pesticides and Toxics
Management Division

cc: Jay Barkley, MS DEQ



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 9700049

Category: NSPS
EPA Office: Region 4
Date: 09/07/1995
Title: Particulate Monitor as Alt. Opacity Monitoring
Recipient: Walton, John
Author: Harper, Jewell

Subparts: Part 60, A, General Provisions
Part 60, UUU, Calciners and Dryers in Mineral Ind.

References: 60.732
60.734
60.8

Abstract:

Q. Will EPA approve the use of a continuous particulate concentration monitor as an alternative to the opacity monitor required by Subpart UUU?

A. Yes. The use of the particulate monitor will be approved for a period of two or three years so that data can be collected and a determination made about whether the system should be approved permanently.

Letter:

4APT-AEB Sep 01, 1995

Mr. John W. Walton, P.E.
Technical Secretary
Tennessee Air Pollution Control Board
Tennessee Department Environment and Conservation L & C Annex, 9th Floor 401 Church Street Nashville, Tennessee 37243-1531

SUBJ: Opacity Monitoring Alternative Proposed by Coors Technical Ceramics Company, Oak Ridge, Tennessee

Dear Mr. Walton:

This letter is in response to your June 15, 1995, request for a determination regarding an opacity monitoring alternative proposed by the referenced company. Coors operates a spray dryer that is subject to 40 C.F.R. Part 60, Subpart UUU (Standards of Performance for Calciners and Dryers in the Mineral Industries), and as an alternative to installing an opacity monitor required under 40 C.F.R. 60.734(a), the company is seeking approval to use a continuous particulate concentration monitor.

The U.S. Environmental Protection Agency (EPA) has reviewed the Coors proposal and is willing to conditionally approve the use of the alternative monitor for a specified period of time (two to three years) for the purpose of collecting data and operational information that can be used as a basis for determining whether the system should be approved permanently. EPA is willing to consider conditional approval of the alternative system because the Agency believes that particulate concentration monitors have the potential to directly measure particulate mass emissions. As conditions for obtaining approval to install and test the alternative monitoring system, Coors must submit for EPA approval a monitoring plan addressing the following issues:

1. The plan must specify the duration of the conditional approval during which the company will collect emissions and operational data to support permanent approval of the alternative. As mentioned above, EPA believes that a two to three year period will be adequate for collecting this information.
2. The plan must identify initial and ongoing quality assurance (QA) procedures for the alternative monitoring system. To ensure reliable day-to-day operation of the alternative system, EPA believes that the plan should contain provisions for daily QA activities.
3. The plan must contain provisions for conducting particulate emissions stack tests in order to determine the relationship between particulate concentrations and monitoring data. The initial test conducted under the provisions of 40 C.F.R. 60.8(a) can be used for this purpose, and EPA believes that at a minimum, additional particulate tests must be conducted on an annual basis in order to assess the ongoing performance of the monitor.
4. The plan must contain provisions for performing EPA Method 9 visible emissions observations on a periodic basis. The basis for this requirement is that the alternative monitoring system will not supply data in terms of the applicable opacity standard for which continuous monitoring is required under Subpart UUU.
5. In addition to excess emission reports based upon EPA Method 9 readings, the plan must contain provisions for reporting any excess emissions measured with the alternative system. For reporting purposes, excess emissions for the alternative system will be defined as any three-hour period during which the average particulate concentration in the stack exceeds the emission limit in 40 C.F.R. 60.732(a).

If you have any questions about the determination provided in this letter, please contact Mr. David McNeal of my staff at 404/347-3555, extension 4158.

Sincerely yours,

Jewell A. Harper
Chief
Air Enforcement Branch
Air, Pesticides and Toxics
Management Division

cc: Mr. Jeryl Stewart, TN DEC



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 9700071

Category: NSPS
EPA Office: Region 6
Date: 01/30/1997
Title: Subpart UUU-Calciner with de minimis emiss.
Recipient: Levett, Jon
Author: Hepola, John

Subparts: Part 60, UUU, Calciners and Dryers in Mineral Ind.

References: 60.734

Abstract:

Q: Will EPA grant an exemption from the opacity monitoring requirement for a Subpart UUU calciner?

A: EPA determines that the calciner is not subject to the opacity monitoring provisions of NSPS Subpart UUU due to the manner in which the unit operates. The unit operates in a manner that produces a de minimis level of emissions. Stack testing data provided indicates an annual particulate matter loading of less than 0.0032 tons for the calciner.

Letter:

January 30, 1997

Mr. Jon K. Levett
Air Enforcement Affairs Supervisor
Box 2027
Tyler, TX 75710

Re: Request for Exemption from NSPS Subpart UUU Opacity Monitoring Requirement

Dear Mr. Levett:

This letter is in response to your November 22, 1996 letter to Mr. Daniel Meyer of EPA Region 6 requesting an exemption from opacity monitoring requirements of New Source Performance Standards (NSPS) part 60, Subpart UUU, Standards of Performance for calciners and Dryers in Mineral Industries. We understand Tyler Pipe operates a calciner at its Core and Green Sand Reclamation Facility in Tyler, Texas. The calciner is subject to NSPS Subpart UUU.

We have reviewed the information provided in your November 22, 1996 submission. We understand Tyler Pipe utilizes a two-stage baghouse filtration system to control particulate matter emissions from the calciner. The information provided in your submission (the March 19 and 20, 1996 stack test results, the March 20, 1996 Method 9 opacity observations, and the calciner production records) indicates that the particulate matter emissions controls are functioning properly.

In addition to providing the aforementioned source-specific information in your submission, you also provided highlights of the preamble to the final rule published in the September 28, 1992 Federal Register. Notably, the preamble states that units with emissions less than 11 tons per year (after control) should be exempt from any opacity monitoring requirements. The March 1996 stack testing data indicates an annual particulate matter loading of less than 0.0032 tons for the calciner.

Section 60.734(c) provides a list of specific equipment types appropriate to the opacity monitoring exemption. The type of calciner that Tyler Pipe operates at its Core and Green Sand Reclamation Facility is not noted at 60.734(c). This exclusion, however, does not preclude the calciner from an opacity monitoring exemption. An October 30, 1995 memorandum (see enclosure) from John B. Rasnic, of the Office of Compliance, reinforces the conditions for opacity monitoring exemptions as stated in the preamble.

Based upon the information provided to EPA Region 6 in your November 22, 1996 submittal, Tyler Pipe is not subject to the opacity monitoring provisions of NSPS Subpart UUU due to the manner in which the unit operates. The unit operates in a manner that produces a de minimis level of emissions. Note, the facility must keep and have available appropriate documentation sufficient to establish that the calciner emissions are less than 11 ton per year.

If you have questions or comments regarding this determination, please contact Mr. Daniel Meyer, of my staff, at 281-983-2125.

Sincerely yours,

/s/

John R. Hepola
Chief
Air/Toxics & Inspection
Coordination Branch

Enclosure

cc: Mr. Keith Brown (OECA)
Mr. Gregg Orr (TNRCC)
Mr. Dean Morrill (TNRCC)
Mr. Daniel Meyer (6EN-ASH)



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 9700130

Category: NSPS
EPA Office: Region 4
Date: 05/01/1995
Title: Subpart UUU Applicability
Recipient: Wylie, Dwight K.
Author: Harper, Jewell A.

Subparts: Part 60, UUU, Calciners and Dryers in Mineral Ind.

References: 60.731

Abstract:

Q: Is a plant that uses a particular type of Opal C.T. clay subject to NSPS Subpart UUU?

A: The plant is exempt from the requirements of Subpart UUU if it uses only that particular type of clay, which exhibits certain characteristics.

Letter:

DATE: MAY 01 1995

Dwight K. Wylie, P.E.
Chief
Air Quality Division
Bureau of Pollution Control
Mississippi Department of Environmental Quality
P.O. Box 10385
Jackson, Mississippi 39289

SUBJ: Finalizing the Applicability Determination of New Source Performance Standards (NSPS), Subpart UUU (Standards of Performance for Calciners and Dryers in Mineral Industries), for Super Dry Industries, Inc. (SDI), Shuqualak, Mississippi

Dear Mr. Wylie:

This is to acknowledge your February 15, 1995, letter, providing the Environmental Protection Agency (EPA) with the results of the chemical analysis of Opal C.T. Clay, a mineral that is mined at SDI. After reviewing the information enclosed with your letter, it appears that Opal C.T. Clay is not one of the minerals listed under 60.731. Therefore, the referenced facility would not be subject to Subpart UUU when it is processing Opal C.T. Clay.

In our previous letter dated September 30, 1994, we had requested more information about the chemical composition of Opal C.T. Clay processed by SDI in order to finalize a determination regarding the applicability of Subpart UUU. The company submitted the Opal C.T. Clay samples for analysis to Professor William Reynolds at the University of Mississippi's Department of Geology. The exhibit "A" is an x-ray diffractogram of the sample. The x-ray trace indicates this material to be pure Opal C T. with a minor amount of quartz and mica (muscovite).

Exhibit "B" is a chemical analysis of six Opal C.T. Clay samples taken from exposures of the Tallahatta formation in the vicinity South and West of Meridian, Mississippi. Results of the analysis indicates that Opal C.T. Clay consists primarily of:

Silica (SiO₂) 70-80%
Alumina (Al₂O₃) 7-11%
Ferric Oxide (Fe₂O₃) 1-3%
Volatiles (LOI) 5-10%
Bonded Water 1.8-4.3%
Absorbed Water 2.4-5.2%

All other oxides and elements occur in trace amounts only.

In their letter dated December 21, 1994, SDI states that it intends to use only Opal C.T. Clay from their mines in the Meehan Junction area (near Meridian, Mississippi) and not fuller's earth as a raw material for producing oil dry or cat litter. Therefore, SDI would be exempt from the requirements of Subpart UUU, if it processes only Opal C.T. Clay from Meehan Junction, and their clay samples are analyzed on a frequent basis.

If you have any questions or comments regarding the determination provided in this letter, please contact Mr. Mirza P. Baig of my staff at 404/347-3555, voice mail number 4147.

Sincerely yours,

Jewell A. Harper
Air Enforcement Branch
Air, Pesticides & Toxics Management Division

cc: Jay H. Barkley, MS Dept. of Envr. Quality



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 9800041

Category: NSPS
EPA Office: Region 4
Date: 04/03/1997
Title: Flue Gas Desulfurization Byproduct
Recipient: Gore, Ronald
Author: Neeley, R. Douglas

Subparts: Part 60, OOO, Nonmetallic Mineral Processing
Part 60, UUU, Calciners and Dryers in Mineral Ind.

Abstract:

Q: Is a byproduct of flue gas desulfurization which has the same chemical composition as gypsum ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$) considered equivalent to gypsum and therefore regulated by Subparts OOO and UUU? The byproduct would be used in the manufacture of gypsum wallboard.

A: Yes. For purposes of regulation under Subparts OOO and UUU, the term "nonmetallic mineral" includes any substance which has the same chemical composition as a nonmetallic mineral specified in the regulations. Since the flue gas desulfurization byproduct has the same chemical composition as gypsum and will be processed in the same manner as naturally occurring gypsum, there is no justification for the exclusion of the byproduct from applicability under Subparts OOO and UUU.

Letter:

April 3, 1997

4APT-ARB

Mr. Ronald W. Gore
Chief
Air Division
Alabama Dept. of Environmental
Management
1751 Congressman W.L. Dickinson Dr.
Montgomery, AL 36109-2608

SUBJ: New Source Performance Standards (NSPS), Subparts OOO and UUU

Dear Mr. Gore:

We have received your February 25, 1997, letter requesting an applicability determination regarding New Source Performance Standards (NSPS), Subpart OOO (Standards of Performance for Nonmetallic Mineral Processing Plants) and NSPS, Subpart UUU (Standards of Performance for Calciners and Dryers in Mineral Industries). In particular, your letter requests a determination regarding whether a byproduct of flue gas desulfurization which has the same chemical composition as gypsum ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$) should be considered equivalent to gypsum and therefore regulated by Subparts OOO and UUU. Based on our review, we have determined that the byproduct of flue gas desulfurization as described to us would be considered gypsum for purposes of regulation under Subparts OOO and UUU.

As described in your letter, a gypsum board manufacturing facility owned by U.S. Gypsum Company will use as raw material a byproduct of flue gas desulfurization from a nearby electric utility plant. Even though the byproduct has the same chemical composition as gypsum, U.S. Gypsum claims that it is not gypsum since it is not mined and is not a mineral.

The Subpart OOO and UUU regulations identify gypsum as a nonmetallic mineral, and the processing of gypsum in affected facilities is therefore covered by these regulations. Although the term "nonmetallic mineral" typically relates to naturally occurring substances, for purposes of regulation under Subparts OOO and UUU the term nonmetallic mineral also includes any substance which has the same chemical composition as a nonmetallic mineral specified in the regulations and which is processed in a manner similar to that used for the naturally occurring substance. Since the flue gas desulfurization byproduct has the same chemical composition as gypsum and will presumably be processed in the same manner as naturally occurring gypsum in the manufacture of gypsum board, there is no justification for the exclusion of the byproduct from applicability under Subparts OOO and UUU. Any process operations which are designated as "affected facilities" in Subparts OOO and UUU and which are used to process gypsum or a substance with the same chemical composition will be subject to the requirements of those regulations. The intent of the Subpart OOO and UUU regulations is to control emissions from the processing of certain types of materials in the operations which are identified as affected facilities. The actual source of those materials has no relevance with regard to the emissions from the affected facilities.

If there are any questions regarding the contents of this letter, please contact Keith Goff of my staff at (404)562-9137.

Sincerely yours,

R. Douglas Neeley
Chief
Air and Radiation Technology
Branch
Air, Pesticides, and Toxics
Management Division



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 9800068

Category: NSPS
EPA Office: Region 4
Date: 01/15/1998
Title: Determining Dryer Excess Emissions
Recipient: DuBose, Richard
Author: Beals, Brian

Subparts: Part 60, UUU, Calciners and Dryers in Mineral Ind.

References: 60.735

Abstract:

Q: Subpart UUU requires the use of differential pressure across the scrubber during the most recent compliance test as the basis for excess emissions from a clay dryer. Is it acceptable for a company to use the differential pressure data collected during several compliance tests performed over the last 5 years instead of using only the last results?

A: Yes, it is acceptable to use the results of more than one test, although, the specific data in question should be examined and any data point that corresponds to an emission rate barely below the applicable limit should not be used.

Letter:

January 15, 1998

4APT-ARB

MEMORANDUM

SUBJECT: Alternative Excess Emission Monitoring Proposal for Scrubber Used to Control Particulate Emissions from a Clay Dryer at the Big Rivers Industries-Livlite Division, Livingston, Alabama

FROM: Brian L. Beals, Chief
Preconstruction/Hazardous Air Pollution Section
Air and Radiation Technology Branch

TO: Richard S. Dubose, Chief
Air Enforcement Section
Air & EPCRA Enforcement Section

Thank you for your letter of September 11, 1997, regarding your request for comments on the referenced alternative monitoring proposal that the Livlite Division of Big Rivers Industries submitted to the Alabama Department of Environmental Management (ADEM) on July 10, 1997. This alternative monitoring proposal is for the scrubber used to control particulate emissions from a clay dryer that is subject to 40 C.F.R. Part 60, Subpart UUU - Standards of Performance for Calciners and Dryers in Mineral Industries. According to 40 C.F.R. 60.735, the differential pressure across a scrubber during the most recent compliance test is used as the basis for excess emission monitoring conducted under Subpart UUU. In its alternative monitoring proposal, however, Big Rivers Industries is requesting approval to base its excess emission monitoring upon scrubber differential pressure information collected during several compliance tests conducted between 1993 and 1997, rather than upon the results of only the latest test. Attached is a table summarizing the results of the testing conducted since 1993.

After reviewing the test results summarized in the attached table, we have concluded that basing the excess emission monitoring for the clay dryer at Big Rivers upon the results of more than one test is acceptable. We also believe, however, that the results of the testing conducted in June 1993 should not be used to define the range of acceptable pressure drops for the scrubber. The basis for this position is that the average emission rate during the testing conducted in June 1993 was just barely below the applicable limit. Therefore, using the process data from this testing which occurred nearly five years ago will not provide adequate assurance that the dryer is operating in compliance with the applicable emission standard.

The basis for the conclusion that it is reasonable to let Big River base its excess emission monitoring upon the results from a series of tests is that the scrubber pressure drop is dependent upon a number of factors (gas flow rate, water flow rate, and the size of the venturi opening). Therefore, in the case of Big Rivers where a number of tests have been conducted under slightly different operating conditions, it is reasonable to base the excess emission monitoring upon the results of any tests that show an acceptable margin of compliance. With the exception of the June 1993 test, during which the particulate emission rate was 98 percent of the applicable limit, the margin of compliance associated with the testing conducted at Big Rivers has been high enough for the scrubber differential pressure from any of them to be used for setting the limits used to define excess emissions.

The net effect of preventing Big Rivers from using the results the June 1993 for defining excess emissions is that it will raise the bottom end of the range of acceptable scrubber pressure drops from the 11.95 inches of water proposed by the company to a value of 12.54 inches water. 40 C.F.R. 60.735(c)(2) defines excess emissions as a 2-hour period during which the average scrubber pressure drop is less than 90 percent of the value during the most recent test in which compliance was demonstrated. Since the lowest pressure drop during any of the Big Rivers tests with a reasonable margin of compliance was 13.93 inches of water, the corresponding pressure drop used for identifying excess emissions would be 12.54 inches of water (i.e., 13.93 x 0.90).

The determination in this letter is based upon the testing that has been conducted at Big Rivers thus far. The results of all future testing on the scrubber used to control emission from the clay dryer at the company should be reviewed to by ADEM determine if changes in process conditions or scrubber operation might warrant revisions to the range of scrubber drops which are considered acceptable. Depending upon the results of future testing, it may be necessary to revise the range of acceptable pressure drops upward or downward, and ADEM should be encouraged to consult the Region whenever changes to the alternative monitoring approach discussed in this memorandum are considered.

If you have any questions regarding the determination provided in this memorandum, please contact David McNeal on extension 2-9102.



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 9800074

Category: NSPS
EPA Office: Region 4
Date: 04/22/1997
Title: Data Collection Requirements
Recipient: Owen, Timothy
Author: Smith, Winston

Subparts: Part 60, A, General Provisions
Part 60, UUU, Calciners and Dryers in Mineral Ind.

References: 60.13
60.734
60.735

Abstract:

Q: Should the daily two-hour period over which operating data are collected from a scrubber used to control emissions from an NSPS Subpart UUU facility be from the same two-hour period each day or can the time period over which the data are collected vary? What is the minimum number of data points that can be used to calculate the average scrubber pressure drop and liquid flow rate?

A: Since Subpart UUU does not specify the time period over which the operating data are collected, source owners and operators have some flexibility when choosing the two-hour period used for excess emission monitoring. Data must, however, be collected under normal operating conditions. A minimum of four data points per hour must be used for calculating the average pressure drop and liquid flow rate.

Letter:

April 22, 1997

4APT-ARB

Mr. Timothy S. Owen
Chief
Engineering Services Branch
Air Division
Alabama Department of Environmental
Management
1751 Congressman W.L. Dickinson Drive
Montgomery, Alabama 36109-2608

SUBJ: Monitoring Requirements Under 40 C.F.R. Part 60, Subpart UUU - Standards of Performance for Calciners and Dryers in Mineral Industries

Dear Mr. Owen:

This letter is in response to your March 12, 1997, request for a determination regarding wet scrubber monitoring requirements for facilities subject to Subpart UUU. Under the provisions of 40 C.F.R. 60.734(d), owners and operators of Subpart UUU facilities that use wet scrubbers to control particulate emissions are required to install, calibrate, maintain, and operate monitoring devices that continuously measure the scrubber pressure drop and scrubbing liquid flow rate. 40 C.F.R. 60.735(b) requires that owners and operators of Subpart UUU facilities subject to these monitoring requirements record the arithmetic average of the scrubber pressure drop and flow rate over a two-hour period once each day. The average scrubber pressure drop and flow rates determined in accordance with this monitoring are compared to operating conditions during the most recent performance test in which compliance was demonstrated in order to identify periods of excess emissions.

The first question in your letter is whether the two-hour period over which scrubber operating parameters are averaged should be the same two-hour period every day or a random two-hour period that could vary each day. After considering this issue, Region 4 has determined that since Subpart UUU does not specify the two-period over which scrubber monitoring data is to be collected each day, source owners and operators have some flexibility regarding the time period over which they collect the required data. Scrubber operating data must, however, be collected under normal source operating conditions. Therefore, scrubber parameter data from hourly periods in which operation is not normal as a result of startup, shutdown, or malfunction cannot be used for calculating the average scrubber pressure drops or liquid flow rates that are the basis for wet scrubber excess emission monitoring under Subpart UUU. In addition, if the operating capacity of an affected facility normally fluctuates significantly over the course of a day, Region 4 recommends that the scrubber monitoring data used to identify excess emissions be collected when the facility is operating within ten percent of its normal maximum operating rate. The basis for this recommendation is that since potential emissions will be highest at the maximum operating capacity of an affected facility, verifying that the control system is operating properly under "worst case" conditions will help minimize emissions.

Your letter also asked for a determination regarding how two-hour averages should be calculated for facilities that have continuous monitoring devices and for a determination regarding the number of readings per hour that must be collected in order to calculate the two-hour averages used for excess emission monitoring under Subpart UUU. When calculating the two-hour averages used for excess emission monitoring under Subpart UUU, all of the valid data collected by the continuous monitoring systems in the averaging period should be used to calculate the results. In accordance with the provisions of 40 C.F.R. 60.13(e), at least one data point must be collected every 15 minutes. Therefore, the equipment used to monitor scrubber pressure drops and flow rates under Subpart UUU must obtain a minimum of four readings per hour.

If you have any questions about the determination provided in this letter, please contact Mr. David McNeal of my staff at 404/562-9102.

Sincerely yours,

Winston A. Smith
Director
Air, Pesticides and Toxics
Management Division



U.S. Environmental Protection Agency Applicability Determination Index

Control Number: 0800052

Category: NSPS
EPA Office: Region 5
Date: 09/06/2007
Title: Alternative Monitoring for Wet Scrubber
Recipient: Michael Burke
Author: George T. Czerniak
Comments:

Part 60, UUU Calciners and Dryers in Mineral Ind.

References: 60.13

Abstract:

Q: Does EPA approve an alternative monitoring plan for 40 CFR part 60, subpart UUU requirements at the Criterion Catalysts & Technologies (Criterion) facility in Michigan City, Indiana? Criterion requests approval to continuously monitor the gas flow rate entering or exiting the wet scrubber in lieu of continuously monitoring the gas phase pressure drop across the scrubber.

A: Yes, conditionally. EPA concurs that the gas phase pressure drop is not an appropriate continuous monitoring parameter for a wet scrubber that does not use a Venturi design for particulate matter emission control. Pursuant to NSPS subpart UUU, EPA approves this alternative monitoring plan subject to the conditions specified in EPA's response letter to Criterion on September 6, 2007.

Letter:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

SEP 06 2007
REPLY TO THE ATTENTION OF
AE- 17J

Mr. Michael Burke
Plant Manager
Criterion Catalysts & Technologies, LP
1800 E. US 12
Michigan City, Indiana 46360-2098

Re: Alternative Monitoring Request for NSPS Part 60, Subpart UUU

Dear Mr. Burke:

Thank you for your letter, dated August 6, 2007, to the United States Environmental Protection Agency

(U.S. EPA), requesting approval of an alternative monitoring plan (AMP) to that found in the requirements of the New Source Performance Standards (NSPS) Part 60, Subpart UUU (Standards of Performance for Calciners and Dryers in Mineral Industries). Specifically, Criterion Catalysts & Technologies (Criterion) requests approval to continuously monitor the gas flow rate entering or exiting the wet scrubber in lieu of continuously monitoring the gas phase pressure drop across the scrubber. In addition, Criterion commits to continuously monitoring the scrubbing liquid flow rate to the scrubber which is also a requirement of 40 CFR Part 60, Subpart UUU.

40 CFR Sec. 60.13 states that after receipt and consideration of written application, U.S. EPA may approve alternatives to any monitoring procedures or requirements of Part 60.

Criterion operates a spray dryer system that is subject to the NSPS Subpart UUU. The spray dryer system is equipped with three baghouses followed by a non-Venturi type wet scrubber. Although the facility currently relies on the baghouses to meet the particulate matter emission standard and a continuous opacity monitoring system to meet the monitoring requirements of Subpart UTJU, the facility wants to incorporate the wet scrubber into its compliance approach to gain greater operational flexibility. For subject dryers equipped with wet scrubbers, the monitoring provisions of 40 CFR Sec. 60.734(d) require owners or operators to install, calibrate, maintain and operate monitoring devices that continuously measure and record the pressure drop of the gas stream through the scrubber and the scrubber liquid flow rate. Criterion explains in its August 6, 2007, letter that the gas phase pressure drop has limited impact on the performance of a non-Venturi type scrubber and therefore is not an appropriate continuous monitoring parameter.

U.S. EPA concurs with Criterion that the gas phase pressure drop is not an appropriate continuous monitoring parameter for a wet scrubber that does not use a Venturi design for particulate matter emission control. In addition, U.S. EPA believes that the ratio of scrubbing liquid to flue gas treated (liquid-to-gas ratio) is an appropriate monitoring parameter for a wet scrubber. Therefore, pursuant to 40 CFR Sec. 60.13, U.S. EPA approves the following alternative continuous monitoring system (CMS) plan for the scrubber on Criterion's spray dryer:

1. Criterion must install, operate and maintain continuous monitoring system(s) to measure and record the ratio of total liquid (or scrubbing liquid) flow rate to the scrubber to the gas flow rate entering or exiting the scrubber (flue gas treated). This ratio of scrubbing liquid to flue gas treated is the "liquid-to-gas ratio." The continuous monitoring system(s) must be installed such that representative measurements of emissions or process parameters from the affected facility are obtained. The monitoring system(s) must meet the requirements of the General Provisions of Part 60. Additional procedures for location of the continuous monitoring system(s) which are contained in the applicable Performance Specifications of Appendix B of Part 60 must be used. 40 CFR Sec. 60.13 requires, among other things, that each CMS complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period (i.e., the liquid-to-gas ratio must be recorded each successive 15-minute period). The CMS must determine and record the hourly average liquid-to-gas ratio of all recorded readings from four or more data points equally spaced over each one-hour period. The owner or operator must determine and record once each day, from the recordings of the continuous monitoring device(s), an arithmetic average over a two-hour period of the liquid-to-gas ratio.
2. Within 180 days of startup of the wet scrubber, Criterion must conduct a performance test for particulate matter at the spray dryer in accordance with 40 C.F.R. Sec. 60.8. The performance test must consist of three test runs and the sampling time of each test run must be at least two hours. Criterion must notify U.S. EPA at least 30 days prior to conducting the performance test to allow U.S. EPA to review the protocol and to have an observer present during the test. During the performance testing, and using the continuous monitoring system(s), Criterion must measure and record the liquid-to-gas ratio at least every 15 minutes during the entire performance test and record the average liquid-to-gas ratio during each test run and the arithmetic average liquid-to-gas ratio of the three test runs. The operating limit established during the performance test must represent the conditions in existence when the wet scrubber and baghouses are being properly operated and maintained to meet the emission limitation.
3. Criterion must maintain records of the ratio of the scrubbing liquid to flue gas treated at the facility for at least two years.
4. Criterion must submit reports of exceedances of the liquid-to-gas ratio semiannually to U.S. EPA and

the Indiana Department of Environmental Management as required by 40 CFR Sec. 60.735.

Exceedances are defined as follows:

a. Any two hour period when the average liquid-to-gas ratio is less than 80 percent of the arithmetic average liquid-to-gas ratio of the three test runs of the most recent performance test that demonstrated compliance with the particulate matter standard in 40 CFR Part 60, Subpart UUU. In addition, it is important to note that in Criterion's case, the baghouses are essential to achieve compliance with the particulate matter emission rate. Stack testing performed by Criterion shows that the baghouses achieve 98 percent efficiency of particulate removal. Therefore, the baghouses must also have monitoring systems in place that continuously monitor emissions and operations. 40 CFR Sec 60.734(a) states, among other things, that with the exception of process units which use wet scrubbers to comply with the mass emission standard of Subpart UUU, the owner or operator who uses a dry control device to comply with the mass emission standard of Subpart UUU must install, calibrate, maintain and operate a continuous monitoring system to measure and record the opacity of emissions discharged into the atmosphere from the control device. We do not believe that the exception noted above applies to Criterion because the scrubber alone is not being used to comply with the mass emission standard. Therefore, Criterion must comply with both 40 CFR Sec. 60.734(a), which contains the monitoring requirements that apply to Criterion's baghouses and 40 CFR Sec. 60.734(d), which contains the monitoring requirements that apply to Criterion's wet scrubber.

Via this letter, we are approving an AMP for Criterion's wet scrubber which satisfies the requirements of 40 C.F.R. Sec. 60.734(d). Now Criterion must determine how it will comply with the monitoring provisions of Sec. 60.734(a) for the baghouses. For a baghouse, 40 CFR Sec. 60.734(a) requires the installation of a continuous opacity monitor to measure and record the opacity of emissions to the atmosphere. However, in the case of Criterion, it may not be feasible to measure the opacity at the outlet of the scrubber due to the interference from water from the wet scrubber. Therefore, Criterion may request alternative monitoring procedures to either continuously measure the opacity between the baghouses and the scrubber, or to measure alternative parameters. 40 CFR Sec. 60.13(i) specifically states that alternative monitoring procedures can be requested in the event that a monitoring system would not provide accurate measurements due to interference caused by liquid water; when alternative locations for installing continuous monitoring systems would enable accurate and representative measurements; or when the proposed continuous monitoring system adequately demonstrates a definite and consistent relationship between its measurements and the measurements of opacity. In any event, any proposed alternative monitoring plan should include a justification for the request and a description of the parameters you plan to measure and their proposed values for demonstrating compliance, the measurement techniques, the monitoring frequency, and the averaging time.

If you have any questions regarding this letter, please contact Linda H. Rosen, of my staff, at (312) 886-6810.

Sincerely yours,

George T. Czerniak, Chief
Air Enforcement and Compliance Assurance Branch

cc: Craig Henry, Acting Section Chief
Office of Enforcement- Air Section
Indiana Department of Environmental Management