



John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Director

Ms. Susan Hedman
Regional Administrator
U.S. EPA Region V
77 W. Jackson Blvd.
Chicago, IL 60604

Re: Demonstration under Section 110(l) of the Clean Air Act for Amended Rule 3745-21-09(U)(1)(h) and New Rule 3745-21-26 (Table 1) of the Ohio Administrative Code.

Dear Ms. Hedman:

Effective May 9, 1986, Ohio EPA established a coating limit in Ohio Administrative Code (OAC) Rule 3745-21-09(U)(1)(h) of 6.2 pounds of VOC per gallon (lbs/gal) of coating for high-performance architectural aluminum coatings. This new reasonably available control technology (RACT) limit was submitted to U.S. EPA for approval into Ohio's State Implementation Plan (SIP). Prior to this rule revision, these coatings were subject to the general SIP-approved coating category of extreme performance coatings with a limit of 3.5 lbs VOC/gal coating.

On August 17, 2010, U.S. EPA published a disapproval in the Federal Register (75 FR 50711) in regards to this 6.2 lbs VOC/gal coating limit because Ohio had not demonstrated that the relaxation of the VOC content limit for high-performance architectural coatings would not interfere with attainment of the ozone standard.

On _____, 2014 Ohio EPA adopted OAC Rule 3745-21-26, "Surface coating of miscellaneous metal and plastic parts." This rule supersedes OAC Rule 3745-21-09(U) for sources located in the Cleveland-Akron-Lorain moderate nonattainment area established under the 1997 ozone standard. This rule is based upon the latest Control Technique Guideline (CTG) for this category, issued by U.S. EPA in September of 2008. The 2008 CTG recommended a limit of 6.2 lbs/gal for high performance architectural coatings and Ohio EPA incorporated this limit into Table 1 of OAC Rule 3745-21-26.

This letter provides information to demonstrate that adoption of the 6.2 lbs VOC/gal coating limit for high-performance architectural aluminum, as amended in OAC Rule 3745-21-09(U)(1)(h) in 1986, and for high-performance architectural aluminum as established in Table 1 of OAC Rule 3745-21-26 more recently, will not interfere with the attainment of the ozone standard or violate the requirements of Section 110(l) of the Clean Air Act (CAA).

At this time, based on the analysis below, Ohio EPA is requesting U.S. EPA approve the 6.2 lbs/gal limit contained in OAC Rule 3745-21-09(U)(1)(h) for high-performance architectural aluminum coatings and Table 1 of OAC Rule 3745-21-26 for high-performance architectural coatings as part of Ohio's SIP. In addition, Ohio EPA is requesting U.S. EPA incorporate into Ohio's SIP the oxide of nitrogen (NOx) emissions limit for emissions unit P046 contained in paragraph (N) of OAC Rule 3745-110-03 (see Attachment A). This paragraph establishes NOx RACT limits for Arcelor Mittal Cleveland. Incorporation of this limit into Ohio's SIP will make the reductions from this facility federally-enforceable and available to use as emissions offsets as discussed later in this submittal.

Permit Search

Ohio EPA performed a thorough search of our electronic permitting databases and retrieved a complete list of permits containing OAC Rule 3745-21-09(U)(1)(h) as an emission limitation. A total of 14 permits were identified containing OAC Rule 3745-21-09(U)(1)(h)¹. Of the 14 permits identified, 3 permits are for currently operating facilities, 4 permits were for processes at permanently shut down facilities, 6 of the identified permits had been superseded by newer permits (including the 3 for currently operating facilities), and one of them was for a facility with a process which was exempt from the requirements of paragraph (U)(1)(h) because they had recently installed controls on the process with a capture efficiency of 90% or greater. A table of all identified permits and their statuses is included in Attachment B.

Of the three currently operating facilities with the (U)(1)(h) emission limitation, only one facility is located in an ozone maintenance and/or non-attainment area. The facility, American Japanning (facility ID 1318110513), is located in Cuyahoga County, which is located in a maintenance area for the 1997 8-hr ozone standard and a marginal non-attainment area for the 2008 ozone standard. Since this facility is located in Cuyahoga County, OAC Rule 3745-21-26 would apply. The remaining two facilities are located outside of the Cleveland-Akron-Lorain area (Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Medina, Portage and Summit counties); therefore, OAC Rule 3745-21-09(U)(1)(h) applies. These two facilities are American Warming and Ventilation (facility ID 0387000107) and Thermo Fisher Scientific (facility ID 0684020011).

Quantification of Emissions from High-Performance Architectural Aluminum Coating Processes

To determine if the change in the allowable VOC content limit for high-performance architectural aluminum coatings contained in OAC Rule 3745-21-09(U)(1)(h), which applies statewide, and Table 1 of OAC Rule 3745-21-26, which applies to the Cleveland-Akron-Lorain area only, will not interfere with the attainment of the ozone standard, Ohio EPA must first determine the emissions increases resulting from the relaxed emissions limitation. Ohio EPA reviewed the reported actual emissions from all operating permitted architectural aluminum coating processes in the state of Ohio and then compared the emissions to the current U.S. EPA approved limit in Ohio's SIP.

A search of the permits in Ohio's electronic permitting database yielded three operating facilities with the OAC Rule 3745-21-09(U)(1)(h) emission limitation. According to the permits, there are a total of five operating emission units (EU) among these three facilities. One EU each is located at American Warming and Ventilation and at Thermo Fisher Scientific and three EUs are located

¹ Limits under Table 1 of OAC Rule 3745-21-26 have not been cited or incorporated into permits as this rule was just recently enacted.

at American Japanning. It should be noted that one additional facility was identified; however, the facility operates a control device on the EU with an overall destruction efficiency exceeding 90% and is, thereby, exempt from the requirements of OAC Rule 3745-21-09(U)(1)(h) per OAC Rule 3745-21-09(B)(6).

Annual Emissions reports from the facilities indicate that the 2010 to 2012 average emissions from all five EUs combined is 12.6 tons VOC/year, or approximately 2.5 tons VOC/year per EU. The highest emissions occurred in 2012 when the five EUs combined emissions were 13.2 tons VOC/year. All calculations are presented in Attachment C, which conservatively assume all VOC emissions result from coating of high-performance architectural aluminum pieces.

The 2010 to 2012 average annual emissions reported in the Cleveland-Akron-Lorain ozone non-attainment area are 2.4 tons VOC/year total from the three EUs at the American Japanning facility, or less than 1 ton/year per EU.

The above-reported emissions were based on an allowable VOC emissions limit of 6.2 lbs/gal coating as contained in the facilities' permits. The current SIP-approved VOC content limit is 3.5 lbs/gal coating. Adjusting the VOC content of the coatings to reflect the current SIP limits would yield a statewide 3-year average VOC emission rate of 2.1 tons/year for all five EUs and a 3-year average emission rate of 0.4 ton/year for the three Cleveland-Akron-Lorain area EUs.

Subtracting the SIP-based VOC emissions rate (i.e., based on 3.5 lbs/gal coating) from the permit-based actual VOC emissions rate (i.e., based on 6.2 lbs/gal coating) yields a 3-year average annual VOC emissions rate of 10.5 tons/year for all five EUs (i.e., statewide) and 2.02 tons/year for the three Cleveland-Akron-Lorain area EUs. These emissions rates represent the worst-case increase in actual VOC emissions due to changing the emissions rate from 3.5 lbs/gal coating to 6.2 lbs/gal coating.

Although highly unlikely because the existing facility permits and state rules already include the relaxed 6.2 lbs VOC/gal coating limit, the revised SIP-approved limit to 6.2 lbs VOC/gal coating could theoretically cause an emissions increase. All of the existing permits for the five facilities include the 6.2 lbs VOC/gal coating limit and an annual emissions limit. Assuming any actual emissions increase constrained by the limits of the permit, as is currently the case, the highest, theoretical emissions increase would be the difference between the actual emissions and the permitted annual emissions limit. The sum of the annual VOC emission limits is 69.7 tons/year for all five EUs (i.e., statewide) and 47.2 tons/year for the three Cleveland-Akron-Lorain area EUs. Subtracting the 3-year average annual emissions rate from these annual VOC emissions limits yields a theoretical emissions increase of 62.5 tons/year for all five EUs (i.e., statewide) and 45.8 tons/year for the three Cleveland-Akron-Lorain area EUs.

Available Emissions Offsets

In December 2007, Ohio EPA promulgated rules in OAC Chapter 3745-110, "Nitrogen Oxides - Reasonably Available Control Technology." These rules addressed the control of NOx emissions from stationary combustion sources such as boilers, combustion turbines, and stationary internal combustion engines. The rules were made applicable as a potential attainment strategy in the Cleveland-Akron-Lorain ozone moderate nonattainment area; however, they were never incorporated into Ohio's SIP as such.

On September 15, 2009 (74 FR 47414), U.S.EPA redesignated the Cleveland-Akron-Lorain metropolitan area as attainment for the 1997 8-hour ozone National Ambient Air Quality

Standard (NAAQS). At the same time, U.S.EPA approved a waiver for the Cleveland-Akron-Lorain area, from the NO_x RACT requirements of Section 182(f) of the CAA. Ohio's NO_x RACT Rules are, therefore, surplus and can be used to offset any increase in emissions from a higher VOC content limit for high-performance architectural aluminum coatings in Ohio.

In 2007, Ohio EPA estimated that there would be approximately 3,000 tons of NO_x emission reductions in the Cleveland-Akron-Lorain area due to the promulgation of OAC Chapter 3745-110. For the purposes of this Section 110(l) demonstration, Ohio EPA will focus on one EU at one specific facility with known reductions creditable to the NO_x RACT Rules that we are requesting USEPA to approve as part of Ohio's SIP. Specifically, emissions limits established for EU P046 listed in the Table in OAC Rule 3745-110-03(N) for the Arcelor-Mittal facility located in Cleveland, Ohio (Facility ID 1318001613).

Prior to the promulgation of OAC Chapter 3745-110, Arcelor-Mittal operated with an emission factor of 0.55 lb NO_x/MMBTU (established via a stack test in 2003). To meet the requirements of OAC Chapter 3745-110, Arcelor-Mittal installed low-NO_x burners in their three reheat furnaces (EU IDs P046, P047 and P048) and reducing their emission factor to 0.29 lb NO_x/MMBTU (confirmed via stack testing in 2010). Based on actual natural gas usage reported for the three most recent reporting years, 2010 through 2012, the average reduction in NO_x emissions for this facility is 571.6 tons NO_x/year. The average reduction for EU P046 is 193.8 tons NO_x/year.

In the Cleveland area, the ratio of NO_x emissions to VOC emissions is approximately 1.30 lbs NO_x/lb VOC based on the 2011 emissions inventory (which includes mobile sources). Applying this factor, the average VOC emissions offset provided by the Arcelor-Mittal NO_x reductions for the 2010 through 2012 time period is 438.2 tons VOC/year for the facility and 148.6 tons VOC/year from EU P046. A table outlining the calculations of the offsets from Arcelor-Mittal is included in Attachment D.

It should be noted that not all reductions from the Arcelor-Mittal facility are available for this Section 110(l) demonstration. On October 25, 2010, Ohio EPA submitted a similar Section 110(l) demonstration for emissions from sheet molding compound (SMC) machines in Ohio regulated by OAC Rule 3745-21-07. In the 2010 demonstration, Ohio EPA used the same reductions from Arcelor-Mittal to demonstrate that there were sufficient offsets to justify an emissions increase for SMC machines. The amount needed for SMC machines was only 7.1 tons VOC/year meaning the actual quantity of VOC offsets available for this Section 110(l) demonstration is 431.1 tons VOC/year from the whole facility and 141.5 tons VOC/year from EU P046.

Application of Offsets

To demonstrate that the increased VOC content limit in OAC Rule 3745-21-09(U)(1)(h) and Table 1 of OAC Rule 3745-21-26 can be adopted into Ohio's SIP in compliance with Section 110(l) of the CAA, Ohio EPA investigated emissions from affected sources and surplus emission offsets. Based on this analysis, Ohio EPA has calculated that more than adequate emission reductions are available to offset even the most implausible worst case scenarios as follows:

Offsets for New Sources

Ohio EPA has reviewed all of the permits in the electronic permitting database and has identified only three active permits for operating facilities that include OAC Rule 3745-21-09(U)(1)(h) as

an applicable requirement (five EUs statewide with three in the Cleveland-Akron-Lorain area). Given the minimal number of facilities utilizing high-performance architectural aluminum coatings, Ohio EPA does not anticipate more than a few, if any, new sources in the future. However, Ohio EPA has shown, through demonstration of excess surplus NO_x emission reductions in the Cleveland-Akron-Lorain non-attainment area, both area-wide and from specific sources, that there are more than enough offsets for any new sources.

Offsets for Existing High-Performance Architectural Aluminum Coating Processes

Ohio EPA has demonstrated that, even for the worst case scenario, Ohio has more than enough surplus emission reductions through the NO_x RACT Rules in OAC Chapter 3745-110 to offset any emissions increases caused by raising the allowable VOC content limit for high-performance architectural aluminum coatings from the current SIP approved level of 3.5 pounds per gallon to 6.2 pounds per gallon. Based on Ohio EPA's calculations, the worst case emissions increase is 2.02 tons VOC/year increase in actual emissions in the Cleveland-Akron-Lorain 8-hr ozone maintenance area and 10.5 tons VOC/year increase statewide, which is more than offset by the 141.5 tons VOC/year offset potential available from EU P046 located at the Arcelor-Mittal facility.

Ohio EPA therefore requests that U.S. EPA reconsider the disapproval of August 17, 2010 and accept Ohio EPA's amended VOC content limit of 6.2 pounds of VOC per gallon of coating for high-performance architectural aluminum coatings in OAC Rule 3745-21-09(U)(1)(h) and high-performance architectural aluminum as established in Table 1 of OAC Rule 3745-21-26 as a modification to Ohio's SIP. Ohio EPA also asks that U.S. EPA accept the emission limitation for EU P046 at Arcelor-Mittal in the table of OAC Rule 3745-110-03(N) for inclusion in Ohio's SIP.

Please contact Jennifer Van Vlerah at 614-644-3696 or jennifer.vanvlerah@epa.ohio.gov if you have any questions about this submittal.

Sincerely,

Robert F. Hodanbosi, P.E.
Chief, Division of Air Pollution Control

cc: Jennifer Van Vlerah, DAPC
Paul Braun, DAPC

Attachment

Attachment A

OAC Rule 3745-110-03(N)

Attachment B

Permits Containing OAC Rule 3745-21-09(U)(1)(h)

Attachment C

Actual Emissions from Active EUs with OAC 3745-21-09(U)(1)(h)
as an Applicable Requirement

Attachment D

VOC Offset Calculations Using Arcelor/Mittal NOx Reductions