

Question & Answer

National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production 40 CFR part 63, subpart RRR

Question Received:

The purpose of this Question and Answer (Q&A) document is to provide an answer to an inquiry EPA received on how to streamline the process of requesting and making impracticability determinations for “group 1 furnaces” under 40 CFR, part 63, subpart RRR: National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production. The EPA is posting a response to this inquiry to ensure a timely review of these requests and the associated determinations.

EPA’s Response:

Background

EPA established emission standards for hazardous air pollutants from secondary aluminum production facilities at 40 CFR part 63, subpart RRR, referred to in this document as Subpart RRR. EPA originally promulgated standards for Subpart RRR in 2000,¹ conducted a risk and technology that was finalized in 2015,² and amended the rule through a 2016 direct final rule.³ There were a number of additional rule amendments promulgated before EPA completed the risk and technology review.

In the 2015 final rule and 2016 direct final rule, EPA finalized amendments to Subpart RRR by adding requirements for new and existing uncontrolled furnaces that did not comply with ventilation guidelines as specified under the American Conference of Governmental Industrial Hygienists (ACGIH Guidelines). Pursuant to Subpart RRR, the owner or operator of each affected source or emission unit equipped with an add-on air pollution control device must design and install a system for the capture and collection of emissions to meet the engineering standards for minimum exhaust rates contained in the ACGIH Guidelines. See 40 CFR 63.1506(c)(1).

Subpart RRR provides new and existing uncontrolled group 1 furnaces with a number of performance test options. One option is that if the furnace cannot install hooding that meets ACGIH Guidelines, the source can petition the appropriate permitting authority that such hoods are impractical and propose testing procedures that will minimize unmeasured emissions during the performance test. *See* 40 CFR 63.1512(e)(4)(ii) & (e)(5)(ii). Subpart RRR sets out the criteria for a source to demonstrate the hooding is impractical at 40 CFR 63.1512(e)(6) and considerations for methods of minimizing unmeasured emissions during performance testing at 40 CFR 63.1512(e)(7).

The Agency provided these compliance options to accommodate the complexities and difficulties of installing hooding for the purpose of demonstrating compliance. We recognized that there may be situations (e.g., various furnace configurations or building configurations) where constructing hooding may be impractical. Therefore, we clarified that existing and reconstructed round top furnaces are exempt from the testing requirements set forth in 40 CFR 63.1512(e)(4). This exemption is based on our

¹ 65 Fed. Reg. 15690 (Mar. 23, 2000)

² 80 Fed. Reg. 56700 (Sept. 18, 2015).

³ 81 Fed. Reg. 38085 (June 13, 2016).

understanding that the furnaces, as constructed, cannot accommodate the testing equipment. In the 2015 rulemaking, we concluded that the impracticality did not similarly apply to new furnaces; we presumed that new furnaces could be built without such restrictions, so we did not extend the exemption to new furnaces. But, in the 2016 direct final rule, we provided additional flexibility for testing for new round top furnaces by allowing owners or operators of those furnaces to assume an 80% capture efficiency for the furnace exhaust during testing or, for major sources to petition the permitting authority, or for area sources to petition the Administrator, for a determination that such hoods are impractical. *See* 40 CFR 63.1512(e)(5).

Using a recent determination as a reference, this Q&A document elaborates on what a source can and should include in a petition to a permitting authority for a determination that hooding is impractical pursuant to 40 CFR 63.1512.

Impracticability Determinations for Testing New Group 1 Furnaces:

It has come to our attention that the process for obtaining an impracticability determination has been longer than industry had anticipated, thus causing delays in start-up and submittal of pre-construction permit applications. Stakeholders asked EPA to provide information regarding how the process could be streamlined. In response to this question, we are providing information on the procedures and types of information expected and deemed appropriate for supporting an impracticability determination, which will help streamline the process. We also note that provision of complete and accurate information is necessary for EPA to provide a full and timely response. The information in this document is largely based on an impracticability determination addressing a new round-top furnace that was recently issued by EPA Region 10 for Kaiser Aluminum Fabricated Products, LLC. The initial impracticability determination request from Kaiser, subsequent communications, and the EPA's ultimate determination are provided in the references to this document. This Q & A document was developed in coordination with EPA Region 10, EPA's Office of Air Quality Planning and Standards (OAQPS) and EPA's Office of General Counsel (OGC). This document with its example, however, is not intended to be the sole means by which a source may make an impracticability determination nor to prevent the authorized decision-making authority from requesting additional information based on the specific facts and information provided by the source, including but not limited to the configuration or operation of the furnace or building in which the furnace is located. It is also not intended to address all state, local and federal regulations associated with the permitting and operation of such an affected source. This Q&A document discusses an example of a request that was determined to be sufficient in light of the regulatory criteria to help streamline future requests for and action on hooding impracticability determinations. Specifically, the demonstration and EPA Region 10's evaluation are informative with respect to:

- (1) Factors to consider when determining installation of hooding is impracticable for existing and reconstructed round top furnaces;
- (2) The timing for determining "hooding impracticability" and steps necessary to minimize unmeasured emissions relative to a construction project, specifically that determinations can be made prior to construction;
- (3) The duration of validity for such determinations, specifically that any approval granted by the EPA would be valid as long as the project constructed matches the description provided to the EPA and the applicable section of the regulation does not change substantively in the interim; and

- (4) Examples of measures sufficient to minimize unmeasured emissions during testing under 40 CFR 63.1512(e)(5) and (7).

Owners and operators must adequately address two key sections of Subpart RRR (40 CFR 63.1512(e)(6) and 40 CFR 63.1512(e)(7)), when applying for impracticability determinations. As outlined in 40 CFR 63.1512(e)(6), installation of hooding that meets ACGIH Guidelines is considered impractical if any of the following conditions exist:

- i. Building or equipment obstructions (for example, wall, ceiling, roof, structural beams, utilities, overhead crane or other obstructions) are present such that the temporary hood cannot be located consistent with acceptable hood design and installation practices;
- ii. Space limitations or work area constraints exist such that the temporary hood cannot be supported or located to prevent interference with normal furnace operations or avoid unsafe working conditions for the furnace operator; or
- iii. Other obstructions and limitations subject to agreement of the permitting authority for major sources, or the Administrator for area sources.

Secondly, as required by 40 CFR 63.1512(e)(5), during compliance testing, new furnaces must be operated to minimize unmeasured emissions consistent with 40 CFR 63.1512 (e)(7), which reads as follows:

Testing procedures that will minimize unmeasured emissions may include, but are not limited to, the following:

- i. Installing a hood that does not entirely meet ACGIH Guidelines;
- ii. Using the building as an enclosure, and measuring emissions exhausted from the building if there are no other furnaces or other significant sources in the building of the pollutants to be measured;
- iii. Installing temporary baffles on those sides or top of furnace opening if it is practical to do so where they will not interfere with material handling or with the furnace door opening and closing;
- iv. Minimizing the time the furnace doors are open or the top is off;
- v. Delaying gaseous reactive fluxing until charging doors are closed and, for round top furnaces, until the top is on;
- vi. Agitating or stirring molten metal as soon as practicable after salt flux addition and closing doors as soon as possible after solid fluxing operations, including mixing and dross removal;
- vii. Keeping building doors and other openings closed to the greatest extent possible to minimize drafts that would divert emissions from being drawn into the furnace;
- viii. Maintaining burners on low-fire or pilot operation while the doors are open or the top is off;
- ix. Use of fans or other device to direct flow into a furnace when door is open; or
- x. Removing the furnace cover one time in order to add a smaller but representative charge and then replacing the cover.

Hooding Impracticability Determination Requests:

In a request for a hooding impracticability determination, owners or operators of an affected source should include, at a minimum, the following detailed information, in conjunction with the showing required by 40 CFR 63.1512(e)(6):

- 1) Description of the facility's operations and status as it relates to applicability under Subpart RRR;
- 2) Description of the type of Group I furnace being installed, furnace operation, and type of materials being processed; and
- 3) Description and explanation of obstructions, space limitations or other limitations, which prohibit the installation of hooding in accordance with 40 CFR 63.1512(e)(6). Submittal of pictures, diagrams, electronic media and/or other relevant information, and visual inspections by the permitting or delegated authority, should aid in the review process.

Testing Procedures to Minimize Unmeasured Emissions during a Performance Test:

Also, in a request for a hooding impracticability determination, owners or operators of an affected source must identify which steps will be taken to minimize emissions pursuant to 40 CFR 63.1512(e)(7) and this submittal should include, at a minimum:

- 1) A detailed discussion of measures that will be applied to minimize unmeasured fugitive emissions during testing. At a minimum, the request should clearly describe how each measure in 40 CFR 63.1512(e)(7) relevant to the affected source will be applied. Owners or operators should be specific regarding the procedures that will be used during all stages of the process where fugitive emissions are likely to be present. Measures the owner or operator proposes to use to minimize emissions that are not specified in 40 CFR 63.1512(e)(7) should also be clearly identified and discussed. Examples of measures not included on this list that may be appropriate include the use of only salt, and not gaseous, flux; and operating round top furnaces near neutral pressures during the melting cycle.
- 2) As appropriate, a discussion of measures identified in 40 CFR 63.1512(e)(7) that the owner or operator believes are not appropriate for application during testing.
- 3) If applicable, a description of any add-on air pollution control devices for the furnace, including the pollutant(s) controlled, and any monitoring and operating procedures that will be used during the test.
- 4) General information should also be provided to include the types of feed materials, including any fluxing agents, parametric monitoring, procedures for charging, mixing and tapping of molten aluminum and other relevant process information. This information should be consistent with information to be included in the test plan or testing protocol, and the performance test/compliance demonstration general requirements listed in 40 CFR 63.1511.

If you have any questions regarding this Q & A document, please contact Rochelle Boyd at (919) 541-1390.

References:

1. Letter, Bernard P. Leber, Jr, (Kaiser Aluminum Fabricated Products, LLC) to Ms. Gina McCarthy, (U.S. EPA), “Hooding Impracticability Determination Request,” August 19, 2016.
2. Letter, Bernard P. Leber, Jr, (Kaiser Aluminum Fabricated Products, LLC) to Ms. Katharine Owens, (U.S. EPA), “Hooding Impracticability Determination Request,” November 9, 2016.
3. Letter, Kelly McFadden, (U.S.EPA) to Bernard P. Leber, Jr (Kaiser Aluminum Fabricated Products, LLC), “Hooding Impracticability Determination under NESHAP RRR for Kaiser Trentwood in Spokane Valley, Washington,” February 8, 2018.
4. Letter, Kelly McFadden, (U.S.EPA) to Bernard P. Leber, Jr (Kaiser Aluminum Fabricated Products, LLC), “Potential at Kaiser at Kaiser Trentwood in Spokane Valley, Washington,” July 17, 2018.
5. Letter, Bernard P. Leber, Jr, (Kaiser Aluminum Fabricated Products, LLC) to Kelly McFadden, (U.S. EPA), “Potential Hooding at Kaiser Trentwood in Spokane Valley, Washington,” January 10, 2019.
6. Letter, Kelly McFadden, (U.S.EPA) to Bernard P. Leber, Jr (Kaiser Aluminum Fabricated Products, LLC), “Response to Hooding Questions at Kaiser Trentwood in Spokane Valley, Washington,” April 9, 2019.