



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

VIA ELECTRONIC MAIL
DELIVERY RECEIPT REQUESTED

Nick Beukema, General Manager
Cleveland-Cliffs Inc.
United Taconite LLC
P.O. Box 180
Eveleth, Minnesota 55734
Nickolas.Beukema@clevelandcliffs.com

**RE: United Taconite LLC's Alternative Monitoring Request for the Taconite
MACT**

Dear Mr. Beukema:

Thank you for your letter dated October 8, 2021, in which Cleveland-Cliffs Inc. United Taconite LLC (United) requested an alternative monitoring method for twelve dynamic wet scrubbers at United's Eveleth, Minnesota facility (the Facility). The dynamic wet scrubbers are subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Taconite Iron Ore Processing, 40 C.F.R. Part 63, Subpart RRRRR (Taconite MACT), 40 C.F.R. §§ 63.9580 through 63.9652. In summary, United requests EPA approval to establish the fan amperage parametric limits as the minimum percent of full load amps (PFLA) to the fan motor set as the PFLA under no-load, plus 10 percent for twelve dynamic wet scrubbers used to control emissions from taconite pellet handling operations at the Facility. For the reasons set forth below, the U.S. Environmental Protection Agency approves your request.

Regulatory Background

Pursuant to 40 C.F.R. § 63.9590(b), an affected source must meet each operating limit for control devices in paragraphs (b)(1) through (5) of this section that applies.

Pursuant to 40 C.F.R. § 63.9590(b)(2), in part:

After January 28, 2022, for affected sources that commenced construction or reconstruction on or before September 25, 2019, and after July 28, 2020, or upon start-up, which ever date is later, for affected sources that commenced construction or reconstruction after September 25, 2019, for each dynamic wet scrubber applied to meet any particulate matter emission limit in Table 1 to this subpart, you must maintain the daily average scrubber water flow rate and the daily average fan amperage (a surrogate for fan speed as revolutions per minute) at or above the minimum levels established during the initial performance test.

Pursuant to 40 C.F.R. § 63.9590(c), an affected source “may petition the Administrator for approval of alternatives to the monitoring requirements in paragraphs (b)(1) through (4) of this section as allowed under § 63.8(f) and as defined in § 63.90.”

Pursuant to 40 C.F.R. § 63.9622(b)(2), in part:

After January 28, 2022, for affected sources that commenced construction or reconstruction on or before September 25, 2019, and after July 28, 2020, or upon start-up, which ever date is later, for affected sources that commenced construction or reconstruction after September 25, 2019, calculate and record the average scrubber water flow rate and the average fan amperage for each individual test run. Your operating limits are established as the lowest average scrubber water flow rate and the lowest average fan amperage value corresponding to any of the three test runs.

Factual Background

In its October 8, 2021, request, United stated that it operates twelve dynamic wet scrubbers (two Ducon IV UW-4 scrubbers, six Ducon III UW-4 scrubbers, one Ducon II UW-4 scrubber, one Ducon A UW 3C scrubber, and two American Air Filter W Rotoclone scrubbers) in varying capacities. United further stated that the wet scrubbers operate with an inherent variability in fan amperage that is not indicative of changes in operational performance according to manufacturer specifications. United explained that the scrubbers utilize constant speed fans which are powered by a constant speed drive, and yet the amperage readings vary due to the mass airflow of the exhaust (impacted by atmospheric conditions, including temperature and humidity) and as a result of routine maintenance. Additionally, United stated and provided data to support that the practical effect of this inherent operating variability with the soon to be applicable limit methodology will lead to excessive reportable deviations which would not be indicative of poor scrubber performance.

In its request, United collected and provided sample amperage data from a simulated test at a dynamic wet scrubber operated at United’s Line 2 Cooler. United established a hypothetical fan amperage limit by collecting and averaging fan amperage data over three, one-hour sample test runs taken from data for five months of normal operations. United’s review of the data showed the scrubber operates with a measure of inherent variability during day-to-day operation. Based on United’s analysis of a sample dataset for the previous five months on the Line 2 Cooler Scrubber and the hypothetical fan amperage limit, United found that fan amperage under normal operations would have been in deviation from the hypothetical parametric fan amperage limit for 34 out of 102 days, or 33.3 percent of the 3-month period. United noted that during this hypothetical analysis, the scrubber operated within current applicable parametric limits for both differential pressure and water flow.

Additionally, United cited other regulations that establish fan amperage parametric limits, including 40 C.F.R. Part 60 Subpart BBa Standards of Performance for Kraft Pulp Mill Affected Sources for Which Construction, Reconstruction, or Modification Commenced After May 23, 2013 (NSPS Subpart BBa), and 40 C.F.R. Part 63 Subpart MM for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-Alone Semichemical Pulp Mills (NESHAP Subpart MM).

United referenced the October 4, 2019 memorandum from EPA’s Office of Air Quality Planning and Standards (OAQPS) regarding the review of smelt dissolving tank (SDT) scrubber operating parameters, including fan amperage, for the use in both NSPS Subpart BBa and NESHAP Subpart MM (Docket ID No. EPA-HQ-OAR-2014-0741). The memorandum reviewed the SDT scrubber operation, parametric operating limits, manufacturer specifications and technical analysis, and the Applicability Determination Index related to alternative monitoring requests under these regulations. United also notes that, in addition to the October 2019 memorandum, EPA acknowledged similar concerns when finalizing amendments to NSPS Subpart BBa and NESHAP Subpart MM:

[A]fter reviewing how the SDT scrubbers in question operate, the EPA agrees that use of the average fan motor amperage measured during the performance test to establish the fan amperage limit as dictated in 40 CFR 63.864(j)(5)(i)(A) of the 2017 NESHAP amendments can be problematic because it does not necessarily correlate with proper operation of the scrubber. The EPA’s intent with adding the fan motor amperage alternative as part of the 2017 NESHAP amendments was to add regulatory flexibility while ensuring proper scrubber operation, not to arbitrarily set an operating limit that may not be met, even while the SDT scrubber is operating properly.¹

United cited the following methodology from Subpart MM, 40 C.F.R. § 63.864(j)(5)(i)(B)(3), which United requests to use to establish its fan amperage parametric limit for the twelve dynamic wet scrubbers at the Facility:

“The minimum percent full load amperage (PFLA) to the fan motor must be set as the percent of full load amperage under no-load, plus 10 percent. The PFLA is calculated by dividing the no-load amperage value by the highest of the 1-hour average fan amperage values associated with each test run demonstrating compliance with the applicable emission limit in § 63.862 multiplied by 100 and then adding 10 percent. The no-load amperage value must be determined using manufacturer’s specifications, or by performing a no-load test of the fan motor for each smelt dissolving tank scrubber.”

Additionally, United referenced EPA’s September 17, 2021 approval of Hibbing Taconite Company’s (HTC) Alternative Monitoring Request. In HTC’s request, EPA approved the same limit-setting methodology that United is requesting for its twelve dynamic wet scrubbers.

Discussion

Pursuant to 40 C.F.R. § 63.9622(b)(2), United is required to set new fan amperage operating limits based on the “lowest average fan amperage value corresponding to any of the three test runs.” United claimed that the minimum amperage limit set by the lowest average amperage value during a performance stack test does not correlate with scrubber performance, and that setting an amperage limit based off this method would tie the Facility to an arbitrary limit that cannot be achieved at all times while the scrubber is functioning as designed. Additionally, United claimed that setting a limit as the PFLA under no-load, plus 10 percent will create a limit that indicates proper scrubber operation while eliminating deviations due to inherent amp

¹ 85 Fed. Reg. 70487, 70489 (Nov. 5, 2020).

variability. United explained that the percent no-load amps is determined by manufacturer's specification or through a no-load test where the motor is disconnected from the fan.

EPA reviewed United's request, including the attached October 4, 2019 memorandum and other related alternative monitoring requests. EPA agrees that establishing a fan amperage parametric limit for the two Ducon IV UW-4 scrubbers, six Ducon III UW-4 scrubbers, one Ducon II UW-4 scrubber, one Ducon AUW 3C scrubber, and two American Air Filter W Rotoclone scrubbers as required by 40 C.F.R. § 63.9590(b)(2) would not lead to a parametric operating limit that reflects proper scrubber performance. EPA approves United's request to establish the fan amperage parametric limits as the minimum PFLA to the fan motor set as the PFLA under no-load, plus 10 percent (as outlined in 40 C.F.R. § 63.864(j)(5)(i)(B)(3) and above) for the twelve dynamic wet scrubbers used to control emissions from taconite pellet handling operations at the Facility. EPA Region 5 consulted with OAQPS regarding United's request.

This approval is granted based on the information provided by United. United is still required to establish the fan amperage parametric limits as the minimum PFLA to the fan motor set as the PFLA under no-load, plus 10 percent for the twelve dynamic wet scrubbers during the initial performance test. Approval of United's request to establish the fan amperage parametric limit does not change United's responsibility for any averaging, monitoring, reporting, or recordkeeping requirements under the Taconite MACT.

If you have any questions regarding this approval, please contact Victoria Nelson at (312) 886-9481 or nelson.victoria@epa.gov.

Sincerely,

**MICHAEL
HARRIS**

Digitally signed by
MICHAEL HARRIS
Date: 2021.12.28
12:15:06 -06'00'

Michael D. Harris
Division Director
Enforcement and Compliance Assurance Division

cc: Rachel Studanski
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