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**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8**

IN THE MATTER OF:

**US Magnesium LLC
238 N 2200 W
Salt Lake City, UT 84116**

NOTICE OF VIOLATION

Docket No. CAA-08-2023-0003

Proceedings Pursuant to
the Clean Air Act,
42 U.S.C. §§ 7401-7671q

NOTICE OF VIOLATION

The U.S. Environmental Protection Agency alleges US Magnesium LLC (US Mag) has violated or is violating implementing regulations of the Clean Air Act (the Act) included in the National Emissions Standards for Hazardous Air Pollutants for Primary Magnesium Refining, 40 C.F.R. part 63, subpart TTTTT (MACT TTTTT).

I. STATUTORY AND REGULATORY BACKGROUND

1. The Act's purpose is "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population." 42 U.S.C. § 7401(b)(1).
2. Section 112(d)(1) of the Act, 42 U.S.C. § 7412(d)(1), requires EPA to promulgate emission standards for sources of hazardous air pollutants (HAPs), including for primary magnesium refining facilities, to achieve emissions reductions of HAPs reflecting application of the maximum achievable control technology for each source category.
3. HAPs emitted by facilities in the primary magnesium refining source category include chlorine, hydrochloric acid, dioxin/furan, and trace amounts of several HAP metals. In particular, chlorine is one of the hazardous air pollutants for which EPA has promulgated national standards due to its adverse effects on human health and the environment. Short-term exposures to chlorine can cause acute health effects observed even at low concentrations, including respiratory irritation. Long-term exposure (months to years) may cause eye and throat irritation and airflow obstruction.
4. Pursuant to Section 112(d) of the Act, 42 U.S.C. § 7412(d), EPA promulgated the National Emission Standards for Hazardous Air Pollutants (NESHAP) General Provisions, at 40 C.F.R. Part 63, Subpart A, which contains general provisions that apply as specified in the relevant NESHAP, 40 C.F.R. § 63.1(a)(4)(i).
5. In 2003, the EPA promulgated "National Emissions Standards for Hazardous Air Pollutants for Primary Magnesium Refining" under Section 111 of the Act. 68 Fed. Reg. 58,615

(October 10, 2003). These standards are set forth in 40 C.F.R part 63, subpart TTTTT, which includes 40 C.F.R. §§ 63.9880–9942 (MACT TTTTT).

6. Subpart TTTTT, at 40 C.F.R. § 63.9890, sets forth emission standards for owners and operators of primary magnesium refineries.
7. Subpart TTTTT, at 40 C.F.R. § 63.9890, requires each source melt/reactor system stack at a primary magnesium refinery to comply with the emission standards in Table 1 to this subpart.
8. Table 1 to Subpart TTTTT of Part 63 requires each source melt/reactor system stack to not discharge to the atmosphere any gases that contain chlorine in excess of 100 lbs/hr.
9. Subpart TTTTT, at 40 C.F.R. § 63.9900(a), requires that “As required by § 63.6(e)(1)(i), you must always operate and maintain your affected source, including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by this subpart.”
10. Subpart TTTTT, at 40 C.F.R. § 63.9910(a), requires that the owner or operator “must be in compliance with the emission limitations, work practice standards, and operation and maintenance requirements in this subpart at all times, except during periods of startup, shutdown, and malfunction as defined in § 63.2.”
11. Per 40 C.F.R. § 63.2: “Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.” As clarified in the Subpart TTTTT preamble language published in the Federal Register, Vol. 68, No. 197, page 58617, “By-passing the control device for maintenance activities is not considered a startup, shutdown, or malfunction event.”

II. FACTUAL BACKGROUND

12. US Mag is a “person” within the meaning of section 302(e) of the CAA, 42 U.S.C. § 7602(e).
13. US Mag owns or operates the Rowley plant (Facility), which is located in Utah, on the western edge of the Great Salt Lake.
14. The Facility produces magnesium metal from the waters of the Great Salt Lake. The water is evaporated in a system of solar evaporation ponds and the resulting brine solution is purified and dried in the spray dryers to produce a magnesium chloride powder. The magnesium chloride powder is then melted and further purified in the melt/reactor before going through an electrolytic process to separate magnesium metal from chlorine. The magnesium is then refined and/or alloyed and cast into molds.

15. The chlorine gas from the melt/reactor is combusted with natural gas in the chlorine reduction burner (CRB) and converted into hydrochloric acid (HCl). The HCl is removed from the gas stream through a scrubber train before being vented out the melt/reactor system stack.
16. The CRB is a critical control device responsible for controlling chlorine emissions from the melt/reactor system stack.
17. The Facility's melt/reactor system stack is subject to the 100 lbs/hour chlorine emission limit of Subpart TTTTT, Table 1, pursuant to 40 C.F.R. § 63.9890.
18. On August 1, 2022, the EPA issued a Request for Information (RFI), pursuant to Section 114 of the Act, to US Mag regarding the Facility and requesting records and copies of regulatory reports that, in part, identify all periods the CRB was bypassed while the melt/reactor system stack was operational since January 1, 2016. US Mag provided a response to the RFI on September 13, 2022.
19. US Mag's response stated that the Facility regularly bypasses the CRB during upset events, maintenance, and scheduled rebuilds. The Facility's production process (i.e., melt/reactor system stack) often continues operating while the CRB (control device) is offline/bypassed for maintenance or rebuilds. During these times, the chlorine emissions continue to pass through the wet scrubber; however, removal is significantly reduced without the CRB. The facility estimates zero percent control efficiency during these events for emission calculations and reporting.
20. According to US Mag's response, the Facility bypassed the CRB while the melt/reactor system stack remained operational during 795 of the 2,404 days between January 1, 2016 and July 31, 2022.
21. In total, US Mag's response identified 2,358 hours of melt/reactor system stack operation while the CRB was bypassed, during 1,100 discrete instances over the 795 days.
22. During the 2,358 hours of CRB bypass, according to US Mag's mass balance calculations, the Facility emitted 9,373 tons of chlorine.
23. US Mag's Facility melt/reactor system stack chlorine average emission rate during these CRB bypass events was 7,950 lbs/hr.
24. MACT TTTTT allows for exceedances of the melt/reactor system stack emission rate of 100 lbs/hour, pursuant to Subpart TTTTT, Table 1, only during periods of startup, shutdown, and malfunction. There is no exceedance exemption for periods of maintenance.
25. The US Mag Facility's 2,358 hours of CRB bypass, documented in their response to EPA's RFI, include instances of CRB bypass during upset events, maintenance, and scheduled rebuilds.
26. In US Mag's RFI response, the Facility only reported 245.5 hours of CRB bypass – out of 2,358 hours – as due to malfunction, through the submittal of unavoidable breakdown reports.

27. The vast majority of the Facility’s CRB bypass events are caused by reoccurring issues. Due to the regular and reoccurring nature of these events these would not meet the definition of “Malfunction,” at 40 C.F.R. 63.2:

“Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions”

III. FINDINGS OF VIOLATION

28. Based on the above Findings of Fact, the EPA finds that US Mag has violated 40 C.F.R. § 63.9890, 40 C.F.R. § 63.9900 and 40 C.F.R. § 63.9910.

IV. ENFORCEMENT AUTHORITY

29. Section 113(a)(3) of the Act, 42 U.S.C. § 7413(a)(3), provides that whenever, on the basis of any information available to the Administrator, the Administrator finds that any person has violated, or is in violation of, any requirement or prohibition of section 112 of the Act, 42 U.S.C. § 7412, including a requirement or prohibition of any rule promulgated under section 112 of the Act, the Administrator may issue an administrative penalty order under section 113(d) of the Act, issue an order requiring compliance with such requirement or prohibition, or bring a civil action in accordance with section 113(b) of the Act for injunctive relief or civil penalties.

Date Issued: March 6, 2023

Suzanne J. Bohan, Director
Enforcement and Compliance Assurance Division