



## REGION 5

CHICAGO, IL 60604

**VIA ELECTRONIC MAIL**  
**DELIVERY RECEIPT REQUESTED**

Scott M. Schumann  
I Schumann & Co. LLC  
[sschumann@ischumann.com](mailto:sschumann@ischumann.com)

Re: Finding of Violation  
**I Schumann & Co. LLC**  
Bedford, Ohio

Dear Scott Schumann:

The U.S. Environmental Protection Agency (EPA) is issuing the enclosed Finding of Violation (FOV) to I Schumann & Co. LLC (you) under Section 113(a) of the Clean Air Act (CAA), 42 U.S.C. § 7413(a). EPA finds that you are violating the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Secondary Nonferrous Metals Processing Area Sources at 40 C.F.R. Part 63 Subpart TTTTTT and 40 C.F.R. § 63.6(e)(1), as well as Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1), at your Bedford, Ohio facility.

Section 113 of the Clean Air Act gives EPA several enforcement options. These options include issuing an administrative compliance order, issuing an administrative penalty order and bringing a civil judicial or criminal action.

We are offering you an opportunity to confer with us about the violations alleged in the FOV. The conference will give you an opportunity to present information on the specific findings of violation, any efforts you have taken to comply, and the steps you will take to prevent future violations. In addition, to make the conference more productive, we encourage you to submit to us information responsive to the FOV prior to the conference date.

Please plan for your facility's technical and management personnel to attend the conference to discuss compliance measures and commitments. You may have an attorney represent you at this conference. The EPA contact in this matter is DeMarkus Hodge. You may call DeMarkus Hodge at (312) 886-0562 or email him at [hodge.demarkus@epa.gov](mailto:hodge.demarkus@epa.gov) to request a conference. You should make the request within 10 calendar days following receipt of this letter. We should hold any conference within 30 calendar days following receipt of this letter.

Sincerely,

Sarah Marshall  
Supervisor,  
Air Enforcement and Compliance Assurance Section  
MI/WI

Enclosure

cc: Joshua Koch, Manager  
Division of Air Pollution Control  
Ohio Environmental Protection Agency  
[Joshua.koch@epa.ohio.gov](mailto:Joshua.koch@epa.ohio.gov)

David Hearne, Commissioner  
Cleveland Dept. of Public Health  
Division of Air Quality  
[dhearne@city.cleveland.oh.us](mailto:dhearne@city.cleveland.oh.us)

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5**

|                                 |   |                             |
|---------------------------------|---|-----------------------------|
| <b>In the Matter of:</b>        | ) |                             |
|                                 | ) |                             |
| <b>I Schumann &amp; Co. LLC</b> | ) | <b>FINDING OF VIOLATION</b> |
| <b>Bedford, Ohio</b>            | ) |                             |
|                                 | ) | <b>EPA-5-24-OH-22</b>       |
| Proceedings Pursuant to         | ) |                             |
| the Clean Air Act,              | ) |                             |
| 42 U.S.C. §§ 7401 et seq.       | ) |                             |

**FINDING OF VIOLATION**

The U.S. Environmental Protection Agency (EPA) finds that I Schumann & Co. LLC (I Schumann) is violating Section 112(r)(1) of the Clean Air Act (CAA), 42 U.S.C. § 7412(r)(1), and the National Emission Standards for Hazardous Air Pollutants (NESHAP) at 40 C.F.R. Part 63 Subpart TTTTTT and 40 C.F.R. § 63.6(e)(1), as follows:

**Statutory and Regulatory Authority**

**The CAA General Duty Clause**

1. The CAA Section 112(r)(1), 42 U.S.C. § 7412(r)(1), states that the objective of the regulations and programs authorized under this subsection shall be to prevent the accidental release and to minimize the consequences of any such release of any substance listed pursuant to 42 U.S.C. § 7412(r)(3) or any other extremely hazardous substance.
2. The CAA Section 112(r)(1), 42 U.S.C. § 7412(r)(1), further states that the owners and operators of stationary sources producing, processing, handling, or storing such substances have a general duty in the same manner and to the same extent as section 654 of title 29 to identify hazards which may result from such releases using appropriate hazard assessment techniques, to design and maintain a safe facility taking such steps as are necessary to prevent releases, and to minimize the consequences of accidental releases which do occur.
3. Under the CAA Section 112(r)(1), the term “extremely hazardous substance” includes, but is not limited to, substances listed pursuant to Sections 112(r)(3) through (5), 42 U.S.C. § 7412(r)(3) through (5). Other “extremely hazardous substances” include those that may, as the result of short-term exposures associated with releases to the air, cause death, injury or property damage due to their toxicity, reactivity, flammability, volatility or corrosivity. The release of any substance which causes death or serious injury because of its acute toxic effect or as the result of explosion or fire or which causes substantial property damage by blast, fire, corrosion or other reaction is presumed to be an extremely hazardous substance. Senate Committee on Environment and Public Works, Clean Air Act Amendments of 1989, Sen. Report No. 101-228, at 211, *reprinted in* 1990 U.S.C.C.A.N. 3385, 3596 (1989).

## The NESHAP for Secondary Nonferrous Metal Processing Area Sources

4. The NESHAP at 40 C.F.R. Part 63, Subpart TTTTTT, applies to the owner or operator of a secondary nonferrous metals processing facility that is an area source of hazardous air pollutant (HAP) emissions. 40 C.F.R. § 63.11462(a).
5. 40 C.F.R. § 63.11463(a) provides that this subpart applies to any existing or new affected source located at a secondary nonferrous metals processing facility.
6. 40 C.F.R. § 63.11463(b) provides that the affected source includes all furnace melting operations located at any secondary nonferrous metals processing facilities.
7. 40 C.F.R. § 63.11472 defines “furnace melting operation” as the collection of processes used to charge post-consumer nonferrous scrap material to a furnace, melt the material, and transfer the molten material to a forming medium.
8. 40 C.F.R. § 63.11463(c) states that an affected source is existing if you commenced construction or reconstruction of the affected source on or before September 20, 2007.
9. 40 C.F.R. § 63.11464(a) provides that the compliance date for an existing affected source is December 26, 2007.
10. Pursuant to Table 1 of 40 C.F.R. Part 63 Subpart TTTTTT, the owner or operator of a secondary nonferrous metals processing facility must comply with, among other requirements, 40 C.F.R. § 63.6(e)(1).
11. 40 C.F.R. § 63.6(e)(1)(i), requires, among other things, that at all times, including periods of startup, shutdown, and malfunction, the owner or operator must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions.

### **Extremely Hazardous Substance**

12. The American Society for Testing and Materials (ASTM) E2349-19, “Standard Practice for Safety Requirements in Metal Casting Operations: Sand Preparation, Molding, and Core Making; Melting and Pouring; and Cleaning and Finishing,” recognizes the standard practices and requirements for the design, construction, and operation of the machinery and equipment used in metal casting operations (sand preparation, molding and core making, melting and pouring, and cleaning and finishing), which are intended to minimize the possibility of injury to operating and maintenance personnel while working on, or in the vicinity of, the specified equipment.
13. ASTM E2349-19 repeatedly notes the potential hazards of water in metal casting operations. During this process, water interacts with molten metal and absorbs the heat from the molten metal resulting in the rapid expansion of water. ASTM E2349-19 states that “water when it changes from liquid to steam expands 1600 times. If molten metal spills and encapsulates a puddle of water, the violent release of energy is almost instantaneous due to the tremendous temperature

differential between the two.” Such an event can generate extremely high pressures causing explosion by blast.

14. The metal casting process requires molten metal to be in very close proximity to water, which provides cooling and temperature control. This co-location of water and molten metal poses a known hazard in the metal casting industry, one that is recognized in ASTM E2349-19, and for which strict controls must be put into place to prevent catastrophic incidents. The molten metal is held at a very high temperature, and the extreme amount of heat will readily transfer to any water that comes into contact with it. The resulting explosion of steam and molten metal can cause death or serious injury to employees and damage to equipment.

#### **Findings of Fact**

15. I Schumann owns and operates the Facility located at 22500 Alexander Road, Bedford, Ohio.

16. The Facility produces brass and bronze ingots.

17. The Facility is a secondary nonferrous metals processing facility.

18. The Facility is an area source of HAPs.

19. The Facility is subject to the requirements of 40 C.F.R. Part 63, Subpart TTTTTT and certain regulatory requirements at 40 C.F.R. §§ 63.1 through 63.15.

20. The Facility has two electric induction furnaces (EIFs) (Furnaces No. 1 and No. 2) and five rotary furnaces (Furnaces No. 3, No. 4, No. 5, No. 6, and No. 7).

21. Furnaces No. 1 through No. 7 are furnace melting operations.

22. Furnaces No. 3 through No. 7 were constructed or reconstructed on or before September 20, 2007, and are existing affected sources.

23. Furnace No. 5 is a rotary reverberatory furnace used to melt brass and bronze raw materials and is cooled by water jacket and supporting components.

24. On February 20, 2023, water was actively leaking from the water jacket into the molten metal bath of Furnace No. 5. A steam explosion occurred when Furnace No. 5 was rotated and water inside the furnace became encapsulated in molten metal. The explosion resulted in the death of one employee, and injuries to 15 other employees.

25. Following the February 20, 2023 incident, OSHA cited I Schumann for, among other things, failure to ensure employees were protected from the recognized hazards of steam explosions and failure to ensure that proper energy control procedures (such as lockout/tagout procedures) were followed while personnel inspected the furnace.

26. The release of water may and did result in a steam explosion causing death or serious injury when the water came into contact with molten metal. The explosion destroyed the furnaces and turned its components into projectiles which caused further destruction to the facility.

27. The explosion scattered debris across neighboring rooftops and parking lots, and the force of the blast destroyed windows nearby.

28. Water in combination with molten metal is an extremely hazardous substance under CAA Section 112(r)(1), 42 U.S.C. § 7412(r)(1).

29. I Schumann is subject to CAA Section 112(r)(1), 42 U.S.C. § 7412(r)(1), and has a general duty to identify hazards which may result from releases of extremely hazardous substances using appropriate hazard assessment techniques, to design and maintain a safe facility taking such steps as are necessary to prevent releases, and to minimize the consequences of accidental releases which do occur.

30. The explosion resulted in a release of particulate matter and HAPs into the community.

## **Violations**

31. I Schumann failed to (1) identify hazards which may result from releases of extremely hazardous substances using appropriate hazard assessment techniques, (2) design and maintain a safe facility taking such steps as are necessary to prevent releases, and (3) minimize the consequences of accidental releases, all of which led to the February 20, 2023 steam explosion, in violation of CAA Section 112(r)(1), 42 U.S.C. § 7412(r)(1).

32. I Schumann failed to operate and maintain Furnace No. 5, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions at all times, including during periods of startup, shutdown, and malfunction, in violation of 40 C.F.R. § 63.6(e)(1).

## **Environmental Impact of Violations**

33. These violations have caused excess emissions of particulate matter. Particulate matter, especially fine particulates, contains microscopic solids or liquid droplets, which can get deep into the lungs and cause serious health problems. Particulate matter exposure contributes to:

- irritation of the airways, coughing, and difficulty breathing.
- decreased lung function.
- aggravated asthma.
- chronic bronchitis.
- irregular heartbeat.
- nonfatal heart attacks.
- premature death in people with heart or lung disease.

34. The violations of the above-referenced NESHAP resulted in increased emissions of metal HAPs, including arsenic, chromium, lead, manganese, and nickel. Lead can affect almost every organ in the body but is most detrimental to the nervous system. In children, low levels of lead in the blood can result in permanent damage to the brain and nervous system, leading to behavior and learning problems, lower IQ, hearing problems, slowed growth, and anemia. In adults, lead has nervous system effects, cardiovascular effects, and causes decreased kidney function. Lead can also lead to reproductive problems for both men and women and has resulted in serious effect on pregnancy and developing fetuses for women.

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Michael D. Harris  
Division Director  
Enforcement and Compliance Assurance Division