

BEFORE THE
OHIO ENVIRONMENTAL PROTECTION AGENCY

In the Matter of:

Millennium Inorganic Chemicals, Inc. :
2900 Middle Road :
Ashtabula, Ohio 44004 :

Director's Final Findings
and Orders

ENTERED DIRECTOR'S JOURNAL

AUG - 7 2003

OHIO E.P.A.

PREAMBLE

It is agreed by the parties hereto as follows:

I. JURISDICTION

These Director's Final Findings and Orders ("Orders") are issued to Millennium Inorganic Chemicals, Inc. ("Respondent") pursuant to the authority vested in the Director of Ohio Environmental Protection Agency ("Ohio EPA") under Ohio Revised Code ("ORC") §§ 3704.03 and 3745.01.

II. PARTIES BOUND

These Orders shall apply to and be binding upon Respondent and successors in interest liable under Ohio law. No change in ownership of the Respondent's facility identified in Finding 1 shall in any way alter Respondent's obligations under these Orders.

III. DEFINITIONS

Unless otherwise stated, all terms used in these Orders shall have the same meaning as defined in ORC Chapter 3704 and the regulations promulgated thereunder.

IV. FINDINGS

The Director of Ohio EPA has determined the following findings:

1. Respondent owns and operates a titanium dioxide production facility, known as Plant 1, located at 2900 Middle Road, Ashtabula, Ashtabula County, Ohio. At this facility, Respondent operates a process to chlorinate a titanium ore and coke mixture to produce titanium tetrachloride as a first step in the titanium dioxide production process (emissions unit P006, Train "B" Chlorination Process).
2. Emissions unit P006 is an "air contaminant source," as defined in Ohio Administrative Code ("OAC") Rule 3745-15-01(C) and (W).

3. OAC Rule 3745-15-06(B)(1) states, in part, that malfunctions of air pollution control equipment that cause the emission of air contaminants in violation of any applicable law shall be immediately reported to Ohio EPA (or delegate agency) by the person responsible for such equipment.

4. OAC Rule 3745-15-06(D) states, in part, that if, in the judgment of the Director, excessive or unduly prolonged malfunctions of any emission source or air pollution control equipment have occurred, the Director may require the owner or operator of said source or equipment to prepare, submit and implement a preventive maintenance and malfunction abatement plan ("PMMAP") which is acceptable to the Director. This plan shall be designed to prevent, detect and correct malfunctions or equipment failures which could result in emissions exceeding any applicable law. OAC Rule 3745-15-06(D)(2) further states that any acceptable PMMAP shall be specified in the terms and conditions of any permit or variance issued for a source covered by such plan.

5. OAC Rule 3745-31-02 states, in part, that no person shall allow the installation of a new air contaminant source without first applying for and obtaining a permit to install ("PTI") from the Director of Ohio EPA, unless otherwise specified by rule or law.

6. OAC Rule 3745-35-02 states, in part, that no person may allow the operation of an air contaminant source without first applying for and obtaining a permit to operate ("PTO") from the Director of Ohio EPA, unless otherwise specified by rule or law.

7. ORC § 3704.05(C) states, in part, that no person who is a holder of a permit issued under ORC § 3704.03(F) or (G) shall violate any of its terms or conditions.

8. ORC § 3704.05(G) states, in part, that no person shall violate any order, rule, or determination of the Director issued, adopted, or made under ORC Chapter 3704.

9. On January 18, 1990, Ohio EPA issued PTI 02-4450 to Respondent allowing, in part, the installation of emissions unit P006, a fluidized bed chlorinator. Per the PTI application, hydrochloric acid emissions from this unit are controlled by a spray tower, venturi scrubber and a separator tower. This is followed by a natural gas-fired thermal convertor (with associated heat recovery boiler) to control carbon monoxide ("CO") and carbonyl sulfide ("COS") emissions. A water quench and caustic scrubber for sulfur dioxide control complete the emissions control train prior to release from the main exhaust stack. CO emissions were limited to 12.7 pounds per hour in the PTI. The initial PTO for this unit, issued to Respondent by Ohio EPA on October 15, 1993, also included this emission limit.

10. Although not described in the PTI application, a safety bypass control was included in the control train for emissions unit P006. This bypass consists of a diversion valve in the exhaust gas stream just prior to the thermal convertor that routes the exhaust gas directly to the main exhaust stack, bypassing the thermal convertor and caustic scrubber. This bypass control was included in the original design of the process to prevent severe equipment damage and to protect plant personnel from injury if a build-up of potentially explosive levels of CO gas in the thermal convertor due to loss of flame occurs.

Damage to the boiler can also occur if CO levels become too high in the thermal convertor, causing high temperature conditions in the unit. As much as 10,000 pounds of CO per hour can potentially be released from emissions unit P006 during a bypass incident. PTI 02-4450 set no limits for COS emissions, as it was assumed the thermal convertor would destroy all COS emissions. Subsequent stack testing revealed that a small amount of COS was not destroyed in the thermal convertor during normal operations (i.e., less than 0.01 pound per hour). Substantially more COS (up to 800 pounds per hour) can be released during bypass incidents when the exhaust gas is not treated. PTI 02-4450 also did not set limits for sulfuric acid mist emissions, as this was not listed in the application as a potential emission from the process.

11. Prior to October, 1998, Respondent became aware of the possibility that sulfuric acid mist was being emitted from emissions unit P006 as a result of discoveries made at a similar Respondent-owned plant located in the United Kingdom. Beginning in October, 1998, Respondent conducted a series of stack tests to quantify the amount of sulfuric acid mist being emitted from emissions unit P006. On February 18, 1999, Respondent disclosed to Ohio EPA, Northeast District Office, Division of Air Pollution Control ("NEDO") the fact that sulfuric acid mist was being emitted from emissions unit P006. Respondent committed to upgrading the scrubber system; this work was completed in March, 2001.

12. Respondent's Plant 1 is classified as a major stationary source, as defined in OAC Rule 3745-31-01(II)(2)(a)(xxi), chemical process plants, with actual or potential emissions of over 100 tons/year for CO, particulate matter, nitrogen oxides, and sulfur dioxide. The facility is located in an attainment area for CO. Sulfuric acid mist emissions from emissions unit P006 exceed seven tons per year. Therefore, the installation of this emission unit resulted in a significant net emissions increase from a major stationary source, as defined by OAC Rule 3745-31-01(WW). As such, this classification required the emissions unit to be permitted under the Prevention of Significant Deterioration ("PSD") rules. Therefore, the facility was modified and the emission unit has been operated without a valid PSD permit since the initial start-up.

13. Respondent first reported a bypass incident (as described in Finding 10) due to an equipment malfunction to NEDO in August, 2000. Respondent provided further details to Ohio EPA in a telephone conference on August 31, 2000 and in a September 27, 2000 letter to NEDO. Respondent informed NEDO that previous malfunctions had not been reported and that records of the incidents had not been kept prior to August, 2000. Respondent began immediately reporting malfunctions of emissions unit P006's control system to NEDO, as well as submitting regular, written summary reports of all malfunctions (i.e., monthly through June, 2002, and quarterly thereafter).

14. On February 14, 2001, NEDO sent a Notice of Violation ("NOV") to Respondent, citing it with exceeding the emission limits set in PTI 02-4450, in violation of ORC § 3704.05(C). Specifically, based on information provided by Respondent in its malfunction reports, NEDO cited Respondent for exceeding emissions unit P006's permit limit for CO of 12.7 pounds per hour for each of the 38 malfunction incidents reported to

NEDO up to that date. Due to the excessive number of malfunction incidents that were being reported, NEDO requested Respondent develop and implement a PMMAP (as described in Finding 4) to eliminate or reduce the number and duration of malfunctions. An outline of the PMMAP was first submitted to NEDO on August 9, 2001, with PTI application 02-15582. A full draft of the PMMAP was submitted to NEDO on November 21, 2001. Respondent made several revisions after review by Ohio EPA. The final draft of the PMMAP was submitted to NEDO on November 20, 2002 and was approved by NEDO on December 9, 2002.

15. On August 9, 2001, Respondent submitted a PSD PTI application (application 02-15582) requesting revisions in its existing PTI to correct the problems identified above. Specifically, Respondent requested permit limits for emissions unit P006 for sulfuric acid mist emissions of 4.5 pounds per hour and 19 tons per year. A best available control technology ("BACT") study for sulfuric acid mist control was also submitted at that time. Respondent also requested emission limits of 1.0 pound per hour and 4.38 tons per year for COS emissions from emissions unit P006. Per OAC Rule 3745-15-06(D)(2), Respondent will be required to continue to implement the PMMAP (identified in Finding 14), as it will be incorporated into the terms and conditions of PTI 02-15582 if and when issued by Ohio EPA.

16. On January 31, 2003, NEDO sent a letter to Respondent informing it of the completion of NEDO's technical review of PTI application 02-15582. The letter identified deficiencies in the application and requested Respondent provide additional information necessary to complete the review of the application. In response to this request, Respondent submitted a response on February 18, 2003, and a follow-up response on March 21, 2003.

17. After reviewing the facts of the case, Ohio EPA has determined that the following violations of OAC rules and ORC laws occurred as a result of the Respondent's installation and operation of emissions unit P006 at its facility:

- a. Installation of an air contaminant source without first applying for and obtaining a proper PTI, in violation of OAC Rule 3745-31-02 and ORC § 3704.05(G). Specifically, Respondent installed emissions unit P006 without first applying for and obtaining a PSD PTI that permitted emissions of sulfuric acid mist and carbonyl sulfide.
- b. Operation of an air contaminant source without first applying for and obtaining a proper PTO, in violation of OAC Rule 3745-35-02 and ORC § 3704.05(G). Specifically, Respondent operated emissions unit P006 without first applying for and obtaining a PTO that permitted emissions of sulfuric acid mist and carbonyl sulfide.
- c. Prior to August, 2000, failure to report malfunctions of air pollution control equipment at its facility to Ohio EPA, in violation of OAC Rule 3745-15-06(B)(1) and ORC § 3704.05(G). Specifically, Respondent

failed to report to Ohio EPA those instances when emissions unit P006 released carbon monoxide (in excess of permitted limits) and carbonyl sulfide as a result of the use of a safety valve to bypass the emissions unit's air pollution control equipment.

- d. Operation of emissions unit P006 in excess of emission limits specified by PTO, in violation of ORC § 3704.05(C). Specifically, Respondent operated emissions unit P006 in such a manner as to allow an excessive number of malfunctions, resulting in release of CO emissions in excess of the unit's permitted limit of 12.7 pounds per hour.

18. The Director has given consideration to, and based his determination on, evidence relating to the technical feasibility and economic reasonableness of complying with the following Orders and their benefits to the people of the State to be derived from such compliance.

V. ORDERS

The Director hereby issues the following Order:

Respondent shall pay the amount of one hundred and five thousand, eight hundred and fifty dollars (\$105,850) in settlement of Ohio EPA's claim for civil penalties, which may be assessed pursuant to ORC Chapter 3704. Within fourteen (14) days after the effective date of these Orders, payment shall be made by an official check made payable to "Treasurer, State of Ohio" and shall be submitted to Brenda Case, or her successor, with a letter identifying the Respondent and emissions unit P006, to:

Office of Fiscal Administration
Ohio EPA
P.O. Box 1049
Columbus, Ohio 43216-1049

A copy of the check shall be sent to James A. Orlemann, Assistant Chief, Enforcement Section, or his successor, at the following address:

Division of Air Pollution Control
Ohio Environmental Protection Agency
P.O. Box 1049
Columbus, Ohio 43216-1049

VI. TERMINATION

Respondent's obligations under these Orders shall terminate upon Ohio EPA's receipt of the official check required by Section V of these Orders.

VII. OTHER CLAIMS

Nothing in these Orders shall constitute or be construed as a release from any claim, cause of action or demand in law or equity against any person, firm, partnership or corporation, not a party to these Orders, for any liability arising from, or related to Respondent's operation of its facility, as specified in these Orders.

VIII. OTHER APPLICABLE LAWS

All actions required to be taken pursuant to these Orders shall be undertaken in accordance with the requirements of all applicable local, state, and federal laws and regulations. These Orders do not waive or compromise the applicability and enforcement of any other statutes or regulations applicable to the Respondent's facility.

IX. MODIFICATIONS

These Orders may be modified by mutual agreement of the parties hereto. Modifications shall be in writing and shall be effective on the date entered in the journal of the Director of Ohio EPA.

X. NOTICE

All documents required by these Orders, unless otherwise specified in writing, shall be addressed to:

Ohio Environmental Protection Agency
Northeast District Office
Division of Air Pollution Control
2110 E. Aurora Road
Twinsburg, Ohio 44087
Attention: Christine McPhee, Environmental Specialist

and to:

Ohio Environmental Protection Agency
Lazarus Government Center
Division of Air Pollution Control
P.O. Box 1049
Columbus, Ohio 43216-1049
Attention: Thomas Kalman, Supervisor, Enforcement Section

XI. RESERVATION OF RIGHTS

Ohio EPA and Respondent each reserve all rights, privileges, and causes of action, except as specifically waived in Section XII of these Orders.

XII. WAIVER

In order to resolve disputed claims, without admission of fact, violation, or liability, and in lieu of further enforcement action by Ohio EPA for only the violations specifically cited in these Orders, Respondent consents to the issuance of these Orders and agrees to comply with these Orders. Compliance with these Orders shall be a full accord and satisfaction for the Respondent's liability for the violations specifically cited herein.

Respondent hereby waives the right to appeal the issuance, terms and conditions, and service of these Orders and Respondent hereby waives any and all rights Respondent may have to seek administrative or judicial review of these Orders either in law or equity.

Notwithstanding the preceding, Ohio EPA and the Respondent agree that if these Orders are appealed by any other party to the Environmental Review Appeals Commission, or any court, Respondent retains the right to intervene and participate in such an appeal. In such event, Respondent shall continue to comply with these Orders unless said Orders are stayed, vacated, or modified.

XIII. EFFECTIVE DATE

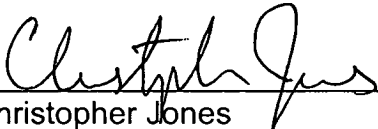
The effective date of these Orders is the date these Orders are entered into the Ohio EPA Director's journal.

XIV. SIGNATORY AUTHORITY

Each undersigned representative of a party to these Orders certifies that he or she is fully authorized to enter into these Orders and to legally bind such party to these Orders.

IT IS SO ORDERED AND AGREED:

Ohio Environmental Protection Agency



Christopher Jones
Director

8-4-03
Date

IT IS SO AGREED:

Millennium Inorganic Chemicals, Inc.



By

7/28/03
Date

Stuart G. Breslow
Printed or Typed Name

VP, General Counsel & Secretary
Title