

ILLINOIS POLLUTION CONTROL BOARD  
September 18, 2003

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Environmental Protection  
Agency

IN THE MATTER OF: )  
)  
PETITION OF CROMWELL-PHOENIX, INC.) AS 03-5  
FOR AN ADJUSTED STANDARD FROM 35 ) (Adjusted Standard - Air)  
ILL. ADM. CODE 218.204(C) )

ERIC E. BOYD, SEYFARTH SHAW, APPEARED ON BEHALF OF PETITIONER; and  
  
CHARLES E. MATOESIAN APPEARED ON BEHALF OF THE ILLINOIS  
ENVIRONMENTAL PROTECTION AGENCY.

OPINION AND ORDER OF THE BOARD (by N.J. Melas):

On May 29, 2003, petitioner Cromwell-Phoenix, Inc. (Cromwell) filed a petition (Pet.) for an adjusted standard, pursuant to Section 28.1 of the Environmental Protection Act (Act). 415 ILCS 5/28.1 (2002). Cromwell seeks relief from the control requirements for volatile organic material (VOM) of 35 Ill. Adm. Code 218.204(c). This rule, also known as the paper coating rule, limits VOM content to 2.3 pounds per gallon. Cromwell requests the adjusted standard as Section 218.204(c) pertains to emissions from Cromwell's corrosion inhibiting (CI) packaging materials production facility located at 12791 South Ridgeway in Alsip, Cook County.

Cromwell seeks an adjusted standard from Section 218.204(c) so that it may use CI solutions with a maximum of 8.3 lbs of VOM per gallon of coating in its web fed and sheet fed coating and printing lines, without having to install add-on control devices. The Illinois Environmental Protection Agency (Agency) recommended grant of the adjusted standard, subject to conditions, both in its July 16, 2003 Recommendation, as well as at the August 7, 2003 hearing.

Based upon the record before it, the Board finds that Cromwell has provided sufficient justification for each of the Section 28.1 factors. The Board grants Cromwell an adjusted standard from 35 Ill. Adm. Code 218.204(c), subject to conditions outlined in this order.

**ADJUSTED STANDARD PROCEDURE**

The Environmental Protection Act (415 ILCS 5/1 *et seq.*, amended by P.A. 93-152, eff. July 10, 2003) and Board rules provide that a petitioner may request, and the Board may grant, an environmental standard that is different from the generally applicable standard that would otherwise apply to the petitioner. This is called an adjusted standard. The general procedures that govern an adjusted standard proceeding are found at Section 28.1 of the Act and Part 104, Subpart D of the Board's procedural rules. 415 ILCS 5/28.1; 35 Ill. Adm. Code 104.400 *et al.*

The Board rules for the content requirements of the petition and Agency recommendation are found at Section 104.406 and Section 104.416, respectively. 35 Ill. Adm. Code 104.406, 104.416.

### **PROCEDURAL BACKGROUND**

On May 29, 2003, Cromwell filed this petition with the Board for an adjusted standard from the paper coating rule. On May 31, 2003, Cromwell published notice of the petition in the *Chicago Tribune*, and filed the certificate of publication with the Board on June 10, 2003. Cromwell filed a motion for expedited review on July 3, 2003, and a motion for expedited transcript on July 25, 2003, offering to pay the difference to expedite the transcript. The Agency filed its recommendation (Rec.) that the Board grant Cromwell's requested relief on July 16, 2003, subject to certain conditions contained in the Agency's recommendation.

On August 7, 2003, the Board granted both Cromwell's motions for expedited review and for an expedited transcript. Also on August 7, 2003, Hearing Officer Bradley Halloran conducted a hearing in this matter at the Board offices in Chicago, Cook County. Cromwell filed a closing brief on August 22, 2003 (Pet. Cl. Br.), and the Agency filed a closing brief on September 2, 2003 (Ag. Cl. Br.).

### **FACTUAL BACKGROUND**

#### **The Facility**

Cromwell is an Illinois corporation and employs 31 people. Pet at 4. Cromwell's facility, 98,000 square feet in size, is located in Alsip, Cook County. *Id.* Cook County is a part of the Greater Chicagoland Severe-17 Ozone non-attainment area designated under 40 C.F.R. 81.314, pursuant to Section 107 of the Clean Air Act. Pet. at 8; 42 U.S.C. 7407. The facility was built in 1965, and Cromwell began operations in the building in 2001. Pet. at 4. The equipment Cromwell uses is approximately 40 years old. *Id.* The Cromwell facility emits approximately 5 to 6 tons of VOM per year,<sup>1</sup> and has the potential to emit less than 25 tons per year. Pet. at 7. The hours of operation at the facility are approximately 2,900 hours per year. Pet. at 7.

#### **The Production Process**

Cromwell manufactures CI packaging material at the Alsip production facility. Part of the manufacturing process involves applying CI solutions containing VOM components to paper substrates. Cromwell states the VOM emissions from CI solutions are very low by design (less than 5% of VOM applied) because the VOM components of the CI coating solution are intended to remain in and be an integral part of the final product.

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<sup>1</sup> Cromwell reported air emissions of 5.4 tons in 2001 and 6.03 tons in 2002. Pet. Exh. B, par. 27.

Cromwell produces CI packaging materials used by the metal industry to keep metal parts from corroding. Tr. at 7. In order to produce CI packaging materials, Cromwell impregnates kraft paper using a carrier to transport the CI compounds into the paper where they are retained. The CI compounds are released to the customer's wrapped metal parts over a prolonged period of time. Tr. at 7. The carrier for the solutions is comprised of high molecular weight VOM and water. The VOMs are corrosion inhibitors themselves and also facilitate the migration of other corrosion inhibitors present in Cromwell's end product towards the surface of the wrapped metal parts over time. *Id.* The VOM also acts as a paper softener and improves paper-folding qualities. Pet. at 2.

### VOM Emissions

Cromwell contends that VOMs are the only emissions of regulated pollutants from the production of CI packaging materials at the facility. Tr. at 8. Cromwell states the VOM components of the CI solutions it uses have low vapor pressures, which result in minimal evaporation. Tr. at 8. The CI compound with the highest VOM content that Cromwell currently uses contains 8.28 lbs of VOM per gallon. Pet. Cl. Br. Exh. 2, Att. C. Gravimetric test results demonstrate that the overall VOM emissions are less than 5% of the weight of CI solution applied. Pet. at 6. The end product is wound onto a cylindrical core immediately after the CI solutions are applied. This process physically encapsulates the product and impedes volatilization of VOM components. *Id.*

### Interaction With the Agency

The Agency issued Cromwell Violation Notice #A-2001-00265 dated November 20, 2001. Pet. at 1. The notice of violation alleged Cromwell failed to demonstrate compliance with the reasonably available control technology (RACT) emissions limitations set forth in 35 Ill. Adm. Code 218.Subpart F. *Id.* After some discussions between the parties, the Agency filed a notice of intent to pursue legal action on March 19, 2002. Pet. at 2. A coating specialist from the Agency visited the facility on May 9, 2002, at the request of Cromwell. Cromwell alleges the parties agreed that Cromwell would file this petition. *Id.* Cromwell submitted a Clean Air Act Permit Program (CAAPP) application to the Agency on March 29, 2002, to date still under review by the Agency. Pet. at 2-3. Cromwell states the application will demonstrate that Cromwell is a minor source. *Id.*

### STANDARD OF REVIEW

The Board agrees with the Agency and Cromwell that the regulation of general applicability at 35 Ill. Adm. Code 218.204(c) does not specify a level of justification for an adjusted standard. Pet. at 4; Rec. at 8. Therefore, pursuant to Section 28.1(c) of the Act, the burden of proof is on the petitioner to demonstrate that:

1. Factors relating to that petitioner are substantially and significantly different from the factors relied upon by the Board in adopting the general regulation applicable to that petitioner;
2. The existence of those factors justifies an adjusted standard;
3. The requested standard will not result in environmental or health effects substantially and significantly more adverse than the effects considered by the Board in adopting the rule of general applicability; and
4. The adjusted standard is consistent with any applicable federal law. 415 ILCS 5/28.1(c) (2002); 35 Ill. Adm. Code 104.426(a).

### CURRENT APPLICABLE STANDARDS

The current standard applicable to Cromwell's paper coating operations are set forth at 35 Ill. Adm. Code 218.204(c). Section 182(d) of the Clean Air Act (CAA), 42 U.S.C. 7401 *et seq.* requires individual states with severe ozone non-attainment areas to adopt RACT regulations applicable to VOM sources within non-attainment areas. Section 218.204(c) of the Board rules, the paper-coating rule, was promulgated pursuant to Section 182 of the CAA, and became effective August 16, 1991.

The paper-coating rule requires paper coaters to utilize coating materials containing no more than 2.3 pounds of VOM per gallon of coating applied. In the alternative, pursuant to Section 218.207, a source such as a paper-coater may use a capture system and control device which achieves an 81% reduction in the overall emissions of VOM from the coating line, and a 90% reduction of the captured VOM emissions, or achieve VOM reductions that are equivalent to the limitations of Section 218.204. 35 Ill. Adm. Code 218.207.

### CROMWELL'S PROPOSED ADJUSTED STANDARD

Cromwell proposes the following adjusted standard for adoption by the Board:

1. The total actual VOM emissions from the Cromwell facility do not exceed 25 tons per year.
2. The Versil Pak wax laminating coatings continue to meet the applicable VOM content limitations under 35 IAC Part 218.Subpart F.
3. The web fed and sheet fed CI coating and printing lines use only corrosion inhibiting solutions whose as-applied VOM contents do not exceed 8.3 lbs VOM per gallon, less water.
4. Cromwell shall operate in full compliance with all other applicable provisions of 35 IAC Part 218.Subpart F.

5. Cromwell shall continue to investigate viable reduced VOM content coatings and, where practicable, shall substitute such coatings as long as such substitution does not result in a net increase in VOM emissions. An annual report summarizing the activities and results of these investigatory efforts will be prepared by Cromwell and submitted to the IEPA.
6. Cromwell shall operate in full compliance with the Clean Air Act.
7. Cromwell shall continue to report all annual emissions to the Agency. Pet. at 12-13.

#### **AGENCY'S RECOMMENDED ADJUSTED STANDARD**

The Agency recommends that the Board grant Cromwell's petition subject to the following eight conditions:

1. The total actual VOM emissions from the entire Cromwell Alsip facility shall not exceed 25 tons per year
2. The Versil Pak wax laminating coatings shall continue to meet the applicable VOM content limitations under 35 Ill. Adm. Code 218.Subpart F.
3. The web fed and sheet fed CI coating and printing lines shall use only CI solutions which, as-applied, do not exceed 8.3 lbs. VOM per gallon, less water.
4. Cromwell shall operate in full compliance with all other applicable provisions of 35 Ill. Adm. Code Part 218, including but not limited to, Subpart F.
5. Cromwell shall continue to investigate CI coatings with a reduced VOM content and, where practicable, shall substitute current coatings with lower VOM content as long as such substitution does not result in a net increase in VOM emissions. An annual report summarizing the activities and results of these investigatory efforts shall be prepared by Cromwell and submitted to the Agency's Bureau of Air, Compliance and Enforcement Section.
6. The relief granted in this proceeding shall be limited to the equipment and emission sources at the Cromwell Alsip facility as of July 14, 2003, and which were identified in the CAAPP application as filed on March 29, 2002.
7. Cromwell shall operate in full compliance with the Clean Air Act, Illinois Environmental Protection Act and other applicable regulations not otherwise discussed herein.

8. Cromwell shall continue to report all annual emissions to the Agency commensurate with the requirements of 35 Ill. Adm. Code Part 254. Rec. at 5-6.

### EFFORTS TO ACHIEVE COMPLIANCE AND ALTERNATIVES

If the Board does not grant the requested relief, Cromwell states it will have to either reformulate its CI solutions to reduce VOM content or apply add-on controls to reduce VOM emissions. Pet. at 8. Cromwell has investigated several alternatives as follows.

#### Reformulation

Cromwell has attempted to reformulate a CI solution to reduce VOM content. Tr. at 9. Cromwell considered three options: (1) increasing the amount of water; (2) increasing the amount of solids; and (3) replacing current VOM carrier with higher molecular weight materials. Cromwell asserted that each approach was unsuccessful, resulting in unacceptable product quality or increased VOM emissions. Pet. Cl. Br. Exh. 1.

Cromwell has calculated that the use of a reformulated compliant solution would result in VOM emissions approximately 7.8 times greater than those associated with the current formulations. Pet. Exh. B at par. 24. As a result, Cromwell's emissions would increase from approximately 6 to 39 tons of VOM per year. *Id.* Cromwell believes this result is counterproductive to the goal of reducing VOM emissions. Pet. at 7.

Cromwell explained that the first option--increasing the water--caused the paper to wrinkle and the cut sheets to curl, making it difficult to provide a good wrap of metal parts. Tr. at 10; Pet. Cl. Br. Exh. 1. Adding water also required using heat to dry the product, which increased VOM emissions. Pet. Cl. Br. Exh. 1. Cromwell stated that the second approach--increasing the amount of solids-- resulted in a powdery bloom on the surface of the coated paper or resulted in a suspension that could not be used for coating. Pet. Cl. Br. at 1. Finally, Cromwell reported that the third approach-- replacing the VOM carrier resulted in solutions that were difficult to mix, difficult to dry, and that gave the paper an oily look and stiffer feel. Pet. Cl. Br. Exh. 1.

#### Add-On Control Device

Cromwell also investigated installation of add-on control devices. Pet. at 12. Cromwell hired a consultant, ERM, Inc., to perform a reasonably available control technology analysis (RACT). Pet. Exh. A. ERM Inc. determined that the technically feasible options were oxidation and a combination adsorption/oxidation system.<sup>2</sup> *Id.* ERM, Inc.'s analysis determined the least

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<sup>2</sup> Adsorption is a process where gaseous or liquid compounds adhere to the surface of solid adsorbent particles that are highly porous and have very large surface to volume ratios. Pet. Exh. A at 3. For example, activated carbon is a common and effective adsorbent used to remove gaseous volatile organic compounds (VOCs) from industrial exhaust streams. *Id.* Oxidation

expensive control option, consisting of a carbon adsorber concentrated with a thermal oxidizer, would have an annual cost of approximately \$25,000 per ton of VOM controlled (corresponding to a total annual cost of \$375,000; Pet. at 12). Pet. Exh. A at 8. Additional costs associated with compliance demonstration testing would amount to \$40,000 to \$50,000. Pet. at 12; Pet. Exh. A at 9. Cromwell asserted that ERM, Inc.'s RACT analysis found the cost of installing add-on oxidation or adsorption/oxidation controls was not economically reasonable. Pet. at 12. The Agency agreed with this assertion. Rec. at 5.

### SUBSTANTIALLY DIFFERENT FACTORS

Cromwell asserted that its operations are unique in Illinois and that the applicable paper-coating rules did not contemplate the methods Cromwell uses to produce CI packaging materials at the Alsip facility. Pet at 8, 17. Unlike conventional coating operations where VOM solvents are used as carriers of pigments or other solids and where coaters intend the VOM solvents to evaporate, Cromwell intended the VOM in its CI solutions to remain in the CI packaging products. Pet. at 8-9. For example, conventional coating operations typically drive off 96% or more of the applied solvent, while Cromwell's product *retains* more than 95% of the CI solutions applied. Pet. at 10. Cromwell contended that it has investigated compliance alternatives, including experiments with reformulated CI coatings and the installation of add-on controls, but that none of the options proved economically reasonable or technically feasible. Pet. at 17.

### IMPACT ON THE ENVIRONMENT

Cromwell contended that its requested adjusted standard will not adversely impact the environment or human health. Pet. at 17. The Cromwell facility emits approximately five to six tons of VOM per year, less than five tons of which comes from the CI production operations. Pet. at 14. The Agency agreed with Cromwell that the five or six tons of VOM it emits annually is a small contributor to the overall emissions in the Chicago nonattainment area. Ag. Cl. Br. at 3. With point source emissions totaling 112.09 tons per day (based on an average summer weekday) in the Chicago nonattainment area, Cromwell's emissions are a very small percentage of that total. Ag. Cl. Br. at 3.

Cromwell stated it is a minor source and the only CI material manufacturing facility located in Illinois. Pet. at 4, 7. Cromwell contended, and the Agency agreed, that typical VOM reduction techniques would lead to greater overall VOM emissions from the production methods Cromwell employs at the Alsip facility. Ag. Rec. at 6-7.

Cromwell has entered into merger negotiations with another company and increased production and COM emissions may occur. Cromwell has no estimate of post-merger emissions,

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converts gaseous VOCs to carbon dioxide, water and other various products of combustion. Pet. Exh. A at 5.

but Cromwell asserted it will not become a major source of emissions (*i.e.* having potential emissions greater than 25 tons per year). Pet. Cl. Br. Exh. At 1.

### CONSISTENCY WITH FEDERAL LAW

Cromwell contended that the relief it requests is consistent with federal law because no federal RACT standards are applicable to Cromwell's specific operations as a manufacturer of CI materials. Pet. at 18.

### DISCUSSION

In summary, Cromwell seeks a change in the paper-coating rule for the amount of VOM per gallon in the coating materials it uses to produce CI packaging products from 2.3 to 8.3 pounds of VOM per gallon without the use of add-on controls. To achieve this relief, Cromwell requests an adjusted standard from Section 218.204(c). The Agency recommends that the Board grant Cromwell the requested relief subject to certain conditions. If granted, the adjusted standard would apply only to the coating materials Cromwell uses to manufacture CI packaging products at its Alsip facility.

The Board finds that Cromwell's request for relief from the paper-coating rule meets the statutory "fundamentally different" factors of section 28.1(c) of the Act. Cromwell has demonstrated that: (1) factors relating to it are substantially and significantly different from the factors relied upon by the Board in adopting the general regulation; (2) the existence of these factors justifies an adjusted standard; (3) the requested standard will not cause substantially or significantly more adverse environmental or health effects than the effects considered by the Board in adopting the rule of general applicability; and (4) the adjusted standard is consistent with applicable federal laws. 415 ILCS 5/28.1(c) (2002).

Cromwell bases its justification for the requested relief on the lack of an economically reasonable or technically feasible alternative. The Board finds that the two alternatives that Cromwell investigated, reformulating the CI solution or add-on control devices, are not technically feasible or economically reasonable. Additionally, VOM emissions data show that Cromwell's emissions will not cause negative health and environmental effects.

The Board finds no inconsistency between granting Cromwell's requested relief and federal law. Finally, the Board finds that the paper coating rule at Section 218.204(c) did not anticipate the process of applying CI solutions to kraft paper that Cromwell employs.

The Agency's recommend adjusted standard language differs slightly from the language Cromwell proposed. Specifically, the Agency's proposed language limits Cromwell's relief to the equipment and emission sources at the Cromwell Alsip facility as of July 14, 2003, and that were identified in Cromwell's CAAPP application as filed on March 29, 2002. The Agency also included clarification that reporting of emissions will be "commensurate with" 35 Ill. Adm. Code Part 254.

In granting this adjusted standard, the Board is adopting conditions similar, but not identical in wording, to those suggested by the parties. As the Agency recommended, the Board has tightened up the description of the covered equipment and clarified reporting requirements. The balance of the changes are non-substantive, and intended to bring this order into conformity with the Board's usual drafting style in this type of cases.

### CONCLUSION

The Board grants Cromwell's requested relief from the paper coating rule at 218.204(c) at its facility in Alsip, Cook County, as proposed by Cromwell and modified by the Agency. As is usual, the relief is effective as of the date of this order.

This opinion constitutes the Board's findings of fact and conclusions of law.

### ORDER

1. Pursuant to Section 28.1 of the Environmental Protection Act, the Board grants Cromwell-Phoenix, Inc. (Cromwell) an adjusted standard from 35 Ill. Adm. Code 218.204(c) effective September 18, 2003. The adjusted standard applies to the equipment and emission sources at Cromwell's facility located at 12701 South Ridgeway, Alsip, Cook County existing as of July 14, 2003 as identified in the Clean Air Act Permit Program permit application Cromwell filed March 20, 2003.
2. The 2.3 pounds of volatile organic material (VOM) per gallon of coating applied limitation of Section 218.204(c) does not apply. Instead, Cromwell is subject to the following:
  - A) The total actual VOM emissions from the entire Cromwell Alsip facility must not exceed 25 tons per year;
  - B) The Versil Pak wax laminating coatings must continue to meet the applicable VOM content limitations under 35 Ill. Adm. Code 218. Subpart F;
  - C) The web fed and sheet fed corrosion inhibiting (CI) coating and printing lines must use only CI solutions which, as-applied, do not exceed 8.3 lbs VOM per gallon, less water;
  - D) Cromwell must operate in full compliance with all other applicable provisions of 35 Ill. Adm. Code Part 218, including but not limited to, Subpart F;
  - E) Cromwell must continue to investigate CI coatings with a reduced VOM content. Where practicable, Cromwell must substitute current coatings with lower VOM content coatings as long as such substitution does not

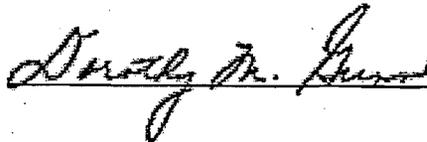
result in a net increase in VOM emissions. Beginning on October 1, 2004, Cromwell must prepare and submit each year an annual report summarizing the activities and results of these investigatory efforts. The annual report must be submitted to the Illinois Environmental Protection Agency (Agency) Bureau of Air, Compliance and Enforcement Section;

- F) Cromwell must operate in full compliance with the Clean Air Act, Illinois Environmental Protection Act and any other applicable regulation; and
- G) Cromwell must continue to report all annual emissions the Agency in accordance with the requirements of 35 Ill. Adm. Code Part 254.

IT IS SO ORDERED.

Section 41(a) of the Environmental Protection Act provides that final Board orders may be appealed directly to the Illinois Appellate Court within 35 days after the Board serves the order. 415 ILCS 5/41(a) (2002); *see also* 35 Ill. Adm. Code 101.300(d)(2), 101.906, 102.706. Illinois Supreme Court Rule 335 establishes filing requirements that apply when the Illinois Appellate Court, by statute, directly reviews administrative orders. 172 Ill. 2d R. 335. The Board's procedural rules provide that motions for the Board to reconsider or modify its final orders may be filed with the Board within 35 days after the order is received. 35 Ill. Adm. Code 101.520; *see also* 35 Ill. Adm. Code 101.902, 102.700, 102.702.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above opinion and order on September 18, 2003, by a vote of 5-0.



Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board