ILLINOIS POLLUTION CONTROL BOARD
October 29, 1987

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENTS TO	)	R85-21
35 ILLINOIS ADMINISTRATIVE	)	Docket B
CODE 215: FLEXOGRAPHIC AND	)	
ROTOGRAVURE PRINTING.	)	

ADOPTED RULE FINAL ORDER

OPINION AND ORDER OF THE BOARD (By R.C. Flemal):

This matter comes before the Board upon a proposal of the Illinois Environmental Protection Agency ("Agency") to amend certain portions of 35 Ill. Adm. Code 215 pertaining to emissions of volatile organic materials ("VOM") from flexographic and rotogravure printing facilities. Today the Board adopts the proposed amendments.

BACKGROUND

The origin of this proceeding is rooted in the requirements of the Clean Air Act ("CAA") (42 U.S.C.A. 7401 et. seq.). Pursuant to 109 of the CAA, the United States Environmental Protection Agency ("USEPA") adopted a National Ambient Air Quality Standard ("NAAQS") for ozone. Attainment of this NAAQS was to have been demonstrated for all areas of the State by December 31, 1982, according to the provisions of 172(a)(1) of the CAA. However, Illinois was unable to make such a demonstration. It therefore applied for and received an extension of this deadline until December 31, 1987 (pursuant to the provisions of 172(a)(2) of the CAA). As a prerequisite to obtaining this extension, Illinois was required in the interim to include in its State Implementation Plan ("SIP") for areas which are nonattainment for ozone "such reduction in emissions from existing sources in the area as may be obtained through the adoption, at a minimum, of reasonably available control technology" (172(b)(3) of CAA).

"Reasonably available control technology" ("RACT") is not defined in the CAA. However, USEPA has promulgated industry-specific "Control Technology Guidelines" ("CTGs") that are intended to describe RACT for a given industry and assist states in determining RACT. USEPA has published three groups of CTGs.

On December 30, 1982, In the Matter of RACT II Rules, R80-5, the Board adopted rules intended to satisfy the RACT requirements

as specified in the second group of CTGs[1]. However, on July 11, 1985, the USEPA at 50 Fed. Reg. 28224 proposed to disapprove certain of the rules adopted by the Board in R80-5.

Included in the proposed disapproval are two provisions relating to flexographic and rotogravure printing. These are the 1000 ton per year exemption found at 35 Ill. Adm. Code 215.402 and the "best engineering design" alternative found at 35 Ill. Adm. Code 215.401(d)(2). It is amendment of these two provisions which constitutes the subject of the instant matter. The Agency proposes to reduce the exemption limit to 100 tons per year and to eliminate the "best engineering design" provision, with both amendments applicable only in nonattainment areas.

R85-21 PROCEDURAL HISTORY

The Agency filed its proposal on September 23, 1985. Merit Hearings were held on December 12 and 13, 1985, in Springfield, Illinois, and on March 6 and 7, 1986, in Chicago, Illinois. At both the December 12 and March 6 hearings the Agency offered amendments to its original proposal.

As originally filed and amended, the Agency's proposal in R85-21 addressed matters in addition to flexographic and rotogravure printing. These matters included amendments to definitions found at 35 Ill. Adm. Code 211.122 and various provisions related to miscellaneous metal parts and products, petroleum liquid storage in external floating roof tanks, and leak prevention from gasoline tank trucks and vapor collection systems.

On August 28, 1986, the Board split the docket in R85-21, including the flexographic and rotogravure printing amendments in Docket B and all other provisions of the Agency's proposal in Docket A. This action was occasioned by the June 17, 1986, determination of the Department of Energy and Natural Resources ("Department"), and the June 20, 1986, concurrence of the Economic and Technical Advisory Committee, that an economic impact study ("EcIS") would be prepared for only the flexographic and rotogravure printing amendments. Splitting of the docket thus allowed the Board to proceed with the Docket A subject

---

[1] The second group of CTGs covered the following source categories: factory surface coating of flatwood paneling; petroleum refinery fugitive emissions; pharmaceutical manufacturing; rubber tire manufacturing; surface coating of miscellaneous metal parts and products; graphic arts (printing); dry cleaning perchloroethylene; leak prevention from gasoline tank trucks and vapor collection systems; petroleum liquid storage in external floating roof tanks.

matter while activities associated with the EcIS were being undertaken. The Board duly took final action on the Docket A amendments on May 28, 1987. Publication occurred at 11 Ill. Reg. 11747, July 10, 1987.

The Department filed the EcIS in this matter, "The Economic Impact of the Rotogravure and Flexographic Printing Provisions of Proposed Regulation R85-21" authored by George S. Tolley, Robert I. Morrison, and R. Craig Romaine, on March 31, 1987. EcIS hearings were held on May 4, 1987, in Chicago, Illinois, and May 20, 1987, in Springfield, Illinois. A revised and final copy[2] of the EcIS was filed with the Board on July 31, 1987.

Docket B was sent to first notice by Board Order of May 25, 1987. Publication occurred at 11 Ill. Reg. 11925, July 17, 1987. The Board received 31 public comments ("PC") in the overall R87-21 proceeding, including nine filed during the first notice period of Docket B which pertain specifically to the subject matter of flexographic and rotogravure printing. The first two of the latter are filings by the Department (PC #23) and the Agency (PC #24) consisting principally of responses to questions posed at the final EcIS hearing. PC #25 through #31 consist of perspectives on the content of the rule. One each of these has been filed by Printpack Inc. (PC #25) and the Agency (PC #26); the remaining five have been filed by Jefferson Smurfit Corporation ("Jefferson Smurfit") and its divisions.

Docket B was sent to second notice by Board Order of September 4, 1987; there were no changes to the rule as proposed at first notice. On October 20, 1987, the Joint Committee on Administrative Rules issued a certification of no objection[3].

PRIOR AND ADOPTED RULE

The principal prior regulations relating to VOM emissions from flexographic and rotogravure printing facilities are found at 35 Ill. Adm. Code Subpart P, Printing and Publishing. These regulations are applicable throughout the State.

---

[2] Citations to the EcIS herein are to the final copy of the EcIS.

[3] The Board received three filings subsequent to adoption of second notice: a filing titled "Second Notice Comments of Printpack, Inc.", a request for "Clarification of Second Notice Order" filed by the Agency, and a filing by Container Corporation of America ("CCA"), a Jefferson Smurfit division, titled "Opposition to IEPA Request for Clarification and Support of Printpack Second Notice Comments". Each of these filings is untimely, in that it was submitted after the close of comment period. (See also Footnotes 8 and 9).

The adopted amendments do not alter Subpart P, but rather add a new Section 215.245[4] to Subpart H, "Special Limitations for Sources in Major Urbanized Areas Which are Nonattainment for Ozone"[5]. Subpart H houses special rules applicable only to sources located in counties which are nonattainment for ozone and/or which are part of the two major urbanized areas which are nonattainment for ozone. There are ten counties so identified in Subpart H: Cook, DuPage, Kane, Lake, Macoupin, Madison, McHenry, Monroe, St. Clair, and Will.

The specific addition to Subpart H adopted herein is as follows:

Section 215.245 Flexographic and Rotogravure Printing

a) The limitations of Subpart P shall apply unless the facility's aggregate uncontrolled rotogravure and/or flexographic printing press emissions of volatile organic material are limited by operating permit conditions to 90.7 Mg (100 tons) per year or less in the absence of air pollution control equipment or whose actual emissions in the absence of air pollution control equipment would be less than or equal to 90.7 Mg (100 tons) per year when averaged over the preceding three calendar years.

b) If an owner or operator of a packaging rotogravure printing press proposes to comply with the limitations of Section 215.401 pursuant to subsection (d) of that Section, then the combined capture and control system must provide an overall reduction in volatile organic material emissions of at least 65 percent.

Exemption Limit, Section 215.245(a)

The portion of Subpart P which is pertinent to Section 215.245(a) is 215.402, which reads:

---

[4] In the Agency's original proposal this section was numbered 215.345. However, there was already a Section 215.345 in existence. This necessitated renumbering the proposed section to 215.245. This same renumbering was used in R85-21 Docket A. The Board notes that the EcIS of Docket B retains use of the originally proposed numbering.

[5] Subpart H was adopted by the Board in R85-21 Docket A.

Section 215.402 Exemptions

The limitations of this Subpart shall not apply to any facility whose aggregate uncontrolled rotogravure and/or flexographic printing press emissions of volatile organic material are limited by operating permit conditions to 907 Mg (1000 tons) per year or less in the absence of air pollution control equipment or whose actual emissions in the absence of air pollution control equipment would be less than or equal to 907 Mg (1000 tons) per year when averaged over the preceding three calendar years.

It is to be noted that, other than for nonsubstantive changes in the first two lines, the difference between 215.245(a) and 215.402 is the change of the exemption limit from 1000 tons per year to 100 tons per year (907 to 90.7 Mg per year). Due to the placement of 215.245(a) within Subpart H, this change is applicable only in the ten counties specifically identified in Subpart H. Thus, the practical effect of adoption of 215.245(a) is to reduce the exemption limit of 215.402 to 100 tons per year for facilities located in the ten-county area, but retain it at 1000 tons per year for facilities located in the remaining 92 counties. More directly, adoption of 215.245(a) eliminates the exemption of Subpart P presently held by those facilities located in the ten county area which have uncontrolled aggregate emissions in the 101 to 1000 ton per year range.

"Good Engineering Design" Provision, Section 215.245(b)

The portion of Subpart P which is pertinent to Section 215.245(b) is Section 215.401(d). Section 215.401 reads in its entirety:

Section 215.401 Flexographic and Rotogravure Printing

No owner or operator of a packaging rotogravure, publication rotogravure or flexographic printing press subject to this rule and employing solvent-containing ink may cause or allow the operation of such press unless:

a) The volatile fraction of an ink as it is applied to the substrate contains 25 percent or less by volume of organic solvent and 75 percent or more by volume of water; or

b) The volatile fraction of an ink as it is applied to the substrate, less water, is 40 percent or less by volume; or

c) The owner or operator installs and operates:

1) A carbon adsorption system which reduces the volatile organic emissions from the capture system by at least 90 percent by weight; or

2) An afterburner system which oxidizes at least 90 percent of the captured nonmethane volatile organic materials (measured as total combustible carbon) to carbon dioxide and water; or

3) An alternative volatile organic material emission reduction system demonstrated to have at least a 90 percent overall reduction efficiency and approved by the Agency; and

d) A capture system is used in conjunction with any of the emission control systems in subsection (c). The design and operation of the capture system must be consistent with good engineering practice and shall provide, in combination with the control equipment, an overall reduction in volatile organic material emissions of at least:

1) 75 percent where a publication rotogravure process is employed; or

2) 65 percent or the maximum reduction achievable using good engineering design where a packaging rotogravure process is employed; or

3) 60 percent where a flexographic printing process is employed.

The portion of Section 215.401 of interest is 215.401(d)(2), which specifies that a packaging rotogravure facility may employ a combined capture and control system which achieves either: (1) an overall reduction in VOM of 65 percent, or (2) the maximum reduction achievable through good engineering design. In contrast, proposed Section 215.245(b) contains only the 65 percent reduction provision. Due to the placement of 215.245(b) within Subpart H, the consequence of adoption of 215.245(b) is to eliminate the "good engineering design" provision of 215.401(d)(2) for affected facilities located in the ten-county area, but to retain it for affected facilities located in the remaining 92 counties. The affected facilities within the ten-county area are those facilities which have aggregate uncontrolled emission over 100 tons per year: the "good engineering design" provision is no longer available to those facilities over 1000 tons per year, and those facilities within the 101-1000 ton per year range have Subpart P applied to them for the first time, but without the "good engineering design" option.

Summary

The effect of the adopted amendments is summarized in tabular form as follows, with those items which are changed as a consequence of adoption of the two parts of proposed Section 215.245 in capitals and underlined (Board Ex. 1):

	Aggregate Uncontrolled Emissions (tons per year)		
	Below 100	101-1000	Above 1000
Ten-County Area			
Applicability of Subpart P	Exempt	APPLICABLE	Applicable
"Good Engineering Design" Provision of 215.401(d)(2)	Exempt	Not Available	NO LONGER AVAILABLE
Rest of State			
Applicability of Subpart P	Exempt	Exempt	Applicable
"Good Engineering Design" Provision of 215.401(d)(2)	Exempt	Exempt	Available

RATIONALE FOR PROPOSED AMENDMENTS

As noted above, the purpose of the instant proceeding was to answer the objections of the USEPA to certain rules promulgated by the Board in the original RACT II proceeding, R80-5. The bases of the USEPA's objection to the 1000 ton per year exemption of 215.402 include 1) that the State had provided no technical or cost effective data to support an exemption of this magnitude, and 2) that the total emissions from sources in this category, under the regulations as adopted by the Board, would not be within 5 percent of the allowable emissions anticipated under the CTG for this cagegory (50 FR 28225). When the Agency proposed this exemption during the R80-5 rulemaking proceeding, it had concluded that the allowable emissions would fall within five percent of those anticipated by the CTG. Due to a difference of opinion with the Agency as to how that calculation should be made, USEPA is proposing to disapprove the rule.

It is the Agency's understanding that USEPA will approve an exemption for those facilities within the ten-county area whose allowable emissions are 100 tons per year or less, as specified in Section 215.245(a). The Agency also believes that the additional reductions in emissions which are provided for by the 100 ton/yr exemption will bring the allowable emissions from this category within 5 percent of those anticipated under the CTG, and therefore will be approvable by the USEPA on this basis.

The USEPA is also clearly on record that no exemption greater than 100 tons per year will be approved by them. In PC #9, which consists of USEPA comments over a cover letter signed by Mr. Steve Rothblatt for Mr. David Kee, Director of the Air Management Division of USEPA Region V, USEPA unequivocally states: "Final adoption of any exemption greater than 100 tons per year will be finally disapproved by USEPA" (PC #9, p. 1).

Nevertneless, in PC #28 Jefferson Smurfit asserts that an exemption as large as 200 to 300 tons per year would be approved by the USEPA, and thereby urged the Board to adopt one of these higher exemption limits. Jefferson Smurfit contends that PC #9 represents only the view of Mr. Rothblatt, and is otherwise contrary to USEPA positions regarding the 5 percent rule. The Board finds Jefferson Smurfit's position unconvincing. It is difficult to imagine a more clear policy statement than that enuciated by the USEPA in PC #9. Neither can tne Board accept that the statement represents an isolated and independent view held only by Mr. Rothblatt, although even that might carry weight given Mr. Rothblatt's position of authority. Rather, the cover letter to PC #9 makes it clear that Mr. Rothblatt was conveying the official position of the USEPA, at least through the level of Region V.

The rationale for the proposed Section 215.245(b) is that the USEPA proposes to disapprove of the phrase "or the maximum reduction achievable using good engineering design" of 215.401(d)(2) because it is "vague and cannot be measured by objective criteria" (50 FR 28225) and because "without a clearly stated overall reduction requirement, there is no assurance that sources which choose to comply by installing add-on control technology will comply with RACT" (PC #9, p. 1). The adoption of Section 215.245(b) deletes the "good engineering design" criterion for those facilities in the ten-county area and to require that these facilities achieve 65 percent efficiency.

GEOGRAPHIC APPLICABILITY

The Board believes that the Agency proposal represents an appropriate scope of geographic applicability. The Board so concludes fully mindful of arguments which have been raised regarding why Will and McHenry Counties, which are both attainment counties, should be included within the scope of the proposed rule.

It is required, at a minimum, that RACT rules be applied within counties which are nonattainment for ozone. However, there are compelling reasons that the rules also apply in some counties in addition to those which are classified as nonattainment. The Board believes that the most important of these is that emissions in certain attainment counties can impact ozone air quality in adjacent nonattainment counties due to

transport of VOM emissions into the nonattainment counties. The significance of the transport phenomenon has been extensively discussed in prior Board RACT Opinions (e.g., R82-14, April 19, 1987 at 4-5; R82-14, April 30, 1987 at 21-22; R85-21(A), May 28, 1987 at 21-22; R86-12, May 28, 1987 at 4; and R86-39, July 16, 1987 at 2-6). The Board does not see that anything new has been presented in the instant record which would justify a change in the Board's prior determinations regarding the significance of transport.

There are also additional reasons, as previously summarized by the Board (R85-21(A), May 28, 1987 at 21-22; R86-36, June 25, 1987 at 19) for including Will and McHenry Counties within the list of counties to which the proposed rule would apply. These are that the counties are part of the Chicago urbanized area; that emissions reductions from the counties have already been included in previous SIP analyses and are necessary to demonstrate ozone attainment; that controls as proposed are necessary to maintain the attainment status of the counties; and that exclusion of the counties would place an even greater burden on the adjacent nonattainment counties to reduce VOM emissions in order to reach attainment of the ozone NAASQ. For this combination of reasons the Board concludes that there is no reasonable likelihood of demonstrating attainment without inclusion of rules applicable to both Will and McHenry Counties.

CCA asserts that the proposed rule also should not apply to its Carol Stream facility because the facility is located "in an attainment area for ozone" (PC #30 at 1). Carol Stream is located in DuPage County. CCA further points out that the Illinois State Chamber of Commerce is currently engaged in litigation with the USEPA to compel formal designation of DuPage County as an attainment area (Id.)

The Board can find no support for CCA's contention that DuPage County is an attainment area. Quite to the contrary, it is explicit in federal regulations (40 CFR Section 81.314 (1986)) that DuPage County is a nonattainment area. That there may be litigation attempting to change this designation does not alter the fact of the matter. Specifically, the court in Illinois State Chamber of Commerce v. USEPA, 775 F.2d 141 (1985), held that the USEPA's decision regarding designation of DuPage County was not reversed but vacated and remanded for further consideration and clarification. The court stated, in pertinent part:

> The state suggests that we vacate, and, since the record supports redesignation, reverse the decision of the EPA. It is not true that the record supports redesignation; but since EPA has not made clear the rationale for its action ... we, therefore, vacate the decision in its present form and remand for further proceedings consistent with this opinion. (emphasis added). 775 F.2d at 1151

Moreover, the Board notes that excursions above the ozone standard have been recorded in DuPage County during the current 1987 ozone season (PC #26, attach. 2 and 3). Based on past experience, it would appear very unlikely that the USEPA would accept redesignation of DuPage County in light of this recent record. Finally, the same arguments which require inclusion of Will and McHenry Counties within the present rule also apply to DuPage County.

AFFECTED FACILITIES

There is some uncertainty as to how many facilities are affected by adoption of Section 215.245(a). In its first submission of the list of affected facilities (Agency Ex. 1), the Agency identified eleven facilities located in the ten-county area which have uncontrolled aggregate emissions between 101 and 1000 tons per year. This list was later updated by the Agency to twelve facilities (Docket B, Agency Ex. 7). However, at the May 20, 1987, EcIS hearing witnesses for two additional facilities, Jefferson Smurfit Inc. (Cook County), and Container Corporation of America (DuPage County), both indicated that it was their belief that they would come under the provisions of Section 215.245(a). It was also noted at this hearing that there may yet be additional facilities which are not included on the Agency's list of affected facilities (R. at 874). However, the Agency subsequently investigated their records of these facilities and has determined that the emissions of at least one of them is below the 100 ton per year limit (PC #24 at 2). Thus, according to the Agency's present best knowledge there are at least fourteen facilities which would be affected by adoption of Section 215.245(a), as summarized in the following table (PC #24, Attachments 2 and 3), and perhaps more.

		Uncontrolled Emissions	
		Before	After
Company Name	County	RACT	RACT
St. Clair Packwell	Cook	440.8	154.7
Sherman Div.-St. Regis Paper	Cook	615.0	215.2
Cellu-Craft	Cook	234.0	93.6
Gravure Printing	Cook	125.0	43.7
Mead Packaging	Cook	289.8	101.4
Laminating & Coating Corp	Cook	312.7	109.4
Bagcraft of America	Cook	873.0	340.1
Meyercord-Johnson Matthey	DuPage	211.7	78.8
American Tara Corp	DuPage	115.4	46.2
Container Corp America	DuPage	658.0	230.3
Guardian Packaging	Kane	147.0	58.8
Printpack	Kane	191.2	72.7
Jefferson Smurfit Corp	Kane	209.0	73.1
Mead Packaging	Madison	730.0	255.5
Total		5,152.6	1,873.5

The authors of the EcIS indicated at hearing (R. at 685) that, to their best understanding, there were no facilities in the 1000 tons per year and above category which would be affected by adoption of proposed Section 215.245(b). This conclusion was based on the belief that none of the 1000 tons per year facilities within the ten county area had elected use of the "good engineering design" provision of 215.401(d)(2), and hence no facilities would be affected by deletion of the provision. However, subsequent investigation by the Agency, as reported in PC #24, Attachment 1, indicated that there are indeed two rotogravure printing facilities which are presently complying with the "good engineering practice" provision of 215.401(d)(2). These facilities are identified as R.R. Donnelley & Sons, Inc. (Cook County) and WRICO Packaging Company (Cook County). It is the Agency's belief that these two facilities might well remain in compliance upon deletion of the "good engineering practice" provision because of the high efficiencies of control equipment currently used by them. However, the Agency concludes that if "proposed Section 215.245 is adopted, both facilities will have to submit stack tests for capture and control systems with their permit renewal applications" (PC #24, Attachment 1).

ECONOMIC IMPACT

The record in this matter contains a wealth of economic data, principally in the EcIS, in the record of the EcIS hearings, and in the post-EcIS hearings public comments. The Board does note that most of the economic estimates are based on the assumption that there are eleven affected facilities, as originally identified by the Agency (see above). Although the list of affected facilities was subsequently revised, the authors of the EcIS have concluded, upon examination of the new facilities data, that the "estimates of benefits and costs for the state are affected very little by this change" (R. at 675).

Costs

The costs which can be expected to be incurred by facilities affected by this proposed rule will depend upon the particular mix of methods which the facilities elect to use in achieving compliance. There are two general options available to the facilites: use of low VOM inks and use of add-on control technology.

The authors of the EcIS have found that the first option, use of low-VOM inks, is the most likely method by which compliance would be achieved. In summarizing the low-VOM ink option, they note (R. at 676):

> A most likely estimate of costs can appropriately be based on a low-VOM ink compliance scenario. The

reasonableness of this scenario is supported by 1) the fact that more severe monitoring, verification and maintenance problems have been noted for carbon adsorption and incineration, 2) the expressed opinions from industry that low-VOM inks would be the most likely method of compliance and 3) the indications that low-VOM inks have been found feasible in other parts of the country.

As noted on page 42 of the Economic Impact Study, an industry estimate of a capital cost of $300,000 per press was given at the merit hearings. With 47 affected presses and a capitalization factor of 16.25%, the annual costs come to $2.3 million. This figure provides a most likely estimate of costs. It may be noted, however, that the figure could be somewhat on the low side inasmuch as an industry representative mentioned a capital cost of $500,000 per press at the first part of the Economic Impact Study hearing in Chicago on May 4. Annual costs would then come to $3.8 million, still leading to a relatively narrow cost range.

The cost of add-on controls, assuming that all affected facilites would elect to use the add-on control option, are estimated in the EcIS (p. xv) to fall within the following ranges for three different technologies:

Technology	Cost Estimate	
	Low Value	High Value
Carbon Adsorption	$538,000	$619,000
40% Heat Recovery Incineration	$1,345,000	$4,106,000
No Heat Recovery Incineration	$1,664,000	$5,965,000

Benefits

The EcIS identifies three categories of directly quantifiable benefits, as follows[6]:

Category	Low	Most Likely	High
Human Health	$3,663	$11,000	$1,613,052
Vegetation	$7,400	$27,000	$337,999
Materials	$93,230	$88,000	$93,230

One major benefit of adoption of the proposed rule not quantified in the EcIS relates to prospective sanctions threatened against the State. The USEPA is on record as indicating that failure to adopt the present rule, among other rules necessary for the State to complete its SIP commitment, could result in both the imposition and continuation of a variety of economic sanctions. Given the uncertainty of the nature and duration of the sanctions, plus the interplay of the many different RACT regulations which compose the State SIP, the authors of the EcIS have been unable to quantify the benefit which would accrue with adoption of this particular RACT rule.

Cost Reasonableness

The Agency concludes that there are approximately 3,275 tons/year of emissions which would be eliminated by adoption of the proposed rule (see Affected Facilities table, above). This number, in combination with the EcIS cost estimates, can be used to estimate the cost per ton of VOM reduction, a commonly cited yardstick of the economic reasonableness of VOM control, as follows:

Scenerio	Annual Cost	Cost per Ton
Carbon Adsorption (Lowest Estimated Cost)	$538,000	$164
Low VOM-Inks ("Most Likely" Estimated Cost)	$2,300,000	$702
Low-VOM-Inks (At High Capital Estimate)	$3,800,000	$1,160
No Heat Recovery Incineration (Highest Estimated Cost)	$5,965,000	$1,821

[6] The "Low" and "High" estimates are tabulated at p. xix of the EcIS; the "Most Likely" estimates are provided in R. at 678-9 and in PC 23, attachment dated May 19, 1987, p. 5.

Although these figures indicate that the cost per ton of VOM reduction is not likely to be trivial, it is nonetheless, even utilizing the highest estimated, below the $2,000 to $2,500 per ton cost figure generally used as the rough upper bound of cost reasonableness.

A witness representing Jefferson Smurfit (Cook County) indicated that compliance costs for his facility would lie between $3,031 and $4,074 per ton, depending upon the option selected (R. at 777-81). However, the Agency has independently calculated Jefferson Smurfit's costs for the same compliance options to be between $849 and $1,059 per ton per year (PC #26 at 3 and attachment 4). The Board notes that Jefferson Smurfit's estimates are based on first-year costs, and do not consider annualization of the capital costs over the operating life of the equipment[7]. Since capital costs constitute a large fraction of the first-year costs, it is to be expected that Jefferson Smurfit's cost per ton figures will be significantly lower when the capital costs are distributed over the operating life of the equipment, as the Agency has done.

Jefferson Smurfit Corporation also contends that all of the cost per ton figures are inflated because, in its perspective, the Agency's estimate of the amount of annual reduction in VOM emissions is too high (PC #28 and #29). Jefferson Smurfit reaches this conclusion because it postulates that all of the affected facilities will use add-on control equipment which will need to be operated for only seven of twelve months pursuant to 35 Ill. Adm. Code 215.106. Jefferson Smurfit therefore believes that the correct expected annual reduction should be 7/12 of the value calculated by the Agency (PC # 28, Table 1), and that the cost per ton figures are correspondingly inflated.

Jefferson Smurfit fails to point out that even if the cost per ton figures were to be increased by 12/7, all but the extreme option of no-heat recovery incineration still fall below $2,000, including the Agency's estimates of the cost per ton effectiveness of Jefferson Smurfit's own facility (see above). Moreover, it is clearly fallacious to apply the 12/7 factor to all facilities given the evidence before the Board that the generally expected method of compliance is the use of low-solvent inks (see above) rather than add-on controls. Additionally, if the control equipment is to be used for only seven months per year, it would also be necessary to adjust annual operating costs downward, and thereby counter some of the increase in the cost per ton figures occasioned by the 12/7 multiplication.

---

[7] Estimates of compliance costs presented in the EcIS are annualized based on a ten-year operating life for equipment, capital recovery factor of 16.257%, and interest rate of 10% (e.g., EcIS at 33).

Finally, the Board notes that the EcIS cites cost per ton figures which are also slightly higher than those noted in the above table, presumably because the EcIS uses a lesser anticipated annual reduction in VOM emissions. Nevertheless, the Department's Economic and Technical Advisory Committee concludes (EcIS at iii):

> Except for one case of a low concentration VOM input gas to an incinerator with no heat recovery, all cost effectiveness estimates are within the $2,000/ton value used by the USEPA as an indicator of economic reasonableness (page 66 of the EcIS). Indirect cost and benefits will be minor and will tend to counterbalance each other. Overall, it appears that the costs of the proposed regulation will be of the same magnitude as the benefits.

In summary, the Board believes that the record amply demonstrates that adoption of the rule would be cost effective relative to the reduction in emissions which are to be expected.

Accuracy of EcIS Analysis

Jefferson Smurfit, in PC #29, challenges many of the assumptions underlying the cost and benefit estimates made in the EcIS. Jefferson Smurfit also contends that at the last EcIS hearing the EcIS authors "abandoned" many of their earlier estimates.

The Board believes that some of the challenges have basis in fact. However, the Board does not see that the challenges change any of the signficant conclusions reached in the EcIS. Cost and benefit estimates such as are required in an EcIS involve the making of many assumptions, and it is almost always possible to raise reasonable challenges to some fraction of these assumptions. The authors of the EcIS have themselves made this clear, and have successfully addressed the matter by providing ranges of costs and benefits under differing and extreme sets of assumptions.

However, the Board can not accept the assertion that the authors of the EcIS in any way "abandoned" their estimates of cost/benefit ranges. Rather, the new figures presented at the last EcIS hearing were "most-likely cost/benefit" figures which the authors provided in response to the Board's inquiry as to whether the earlier provided ranges might not have most-likely values. In complying with the Board request, the authors were clearly not abandoning their estimates of cost/benefits ranges, but rather supplementing them.

24-HOUR AVERAGING

Printpack Inc. filed in PC #25 a request that the Board give consideration to certain aspects of averaging of emissions. In responding to this request and to the Agency's reply the Board noted at Second Notice[8]:

> Printpack Inc. requested in PC #25 that the Board stipulate within the rule that 24-hour averaging of complying and non-complying inks within a printing line be a compliance option. The matter had been addressed at hearing (R. at 634-5; 651-3), with the conclusion that any cross-line averaging would have to comply with the USEPA's bubble policy. This has been confirmed in Agency correspondence with the USEPA (PC #26, attachment 6). Thus, averaging is currently possible, provided that it meets the bubble policy guidelines. Without further demonstration from Printpack that a special averaging provision should apply to the instant rule, the Board does not believe that it would be appropriate to propose such a rule at this time. In the Matter of: Proposed Amendments to 35 Illinois Adminstrative Code 215: Flexographic and Rotogravure Printing, September 4, 1987, p. 16.

COMPLIANCE DATE

The CAA requires that RACT rules, including that proposed here, be in place by December 31, 1987. Jefferson Smurfit (PC #4, #27-31) and Printpack Inc.(PC #25) have questioned whether it is realistic to expect compliance by this same date, given its immediacy. The Agency contends, however, that many facilities have already begun implementing compliance plans (R. at 657), and

---

[8] On September 29, 1987, Printpack Inc indicated in its untimely filing (see footnote 3) that its intention was to have the Board stipulate to "averaging of complying and non-complying inks within a single print line" (emphasis in original), rather than the cross-line averaging discussed at Second Notice. The Board notes that the record is silent on the matter of within-line averaging other than for what may be construed from PC #25 itself. The Board also notes that the rule as proposed, discussed, and adopted here goes only to modifying an exemption limit and one alternative compliance provision applicable to certain flexographic and rotogravure printers, and does not otherwise modify the body of existing regulations. It is within these existing regulations that one must look for the matter of within-line averaging. As such, it would be inappropriate for the Board to stipulate to any interpretation of these existing rules without opportunity for full hearing on the matter.

that presumably therefore compliance by December 31 will not constitute a general hardship[9].

Jefferson Smurfit (PC #4, #12, #28, #29) and Printpack Inc. (PC #25) have suggested as a remedy that there be a provision in the rule which allows facilities from one to three years after USEPA approval to come into compliance. However, the Board does not believe that this is a viable option because there is no apparent authority for the Board to adopt a rule which features a compliance extension beyond the CAA December 31, 1987, deadline. The Board can only note for the record that facilities unable to meet the compliance deadline can petition the Board for

---

[9] The Agency in its untimely filing titled "Clarification of Second Notice Order" of September 24, 1987 (see footnote 3) requests that the Board "elucidate its Second Notice Order ... by stating the following:

1. There exists in the record an independent, technical and reasonable basis to uphold the December 31, 1987, compliance date as the majority of facilities are in compliance or can be in compliance by that date.

2. Only two companies of the fourteen affected facilities submitted first notice comments stating that they could not be in compliance by December 31, 1987.

The Board can not conclude that either of these statements is factually correct, and accordingly could not accept them. As regards the first, the record is silent on the matter of whether the majority of facilities are presently in compliance with the rule as here adopted. Similar, the record neither supports nor opposes the conclusion that the majority of facilities can be in compliance by the December 31, 1987, date. The Agency apparently relies here on the logical linkage that failure of the majority of affected facilities to appear at hearing or to file comments in objection equates to an ability to come into compliance by the specified date. The Board could not accept this linkage, in that it does not allow that affected facilities may have had other motivations for their inactions than that ascribed to them.

The second of the statements is misleading in that, although only two parent companies are on record as contending that they are unable to meet the deadline, the two companies represent at least four of the fourteen facilities. These include the Printpack Inc facility and three Jefferson Smurfit facilities, Laminating and Coating Corporation (PC#27), Jefferson Smurfit's Bedford Park facility (PC #28), and the CCA Carol Stream facilities (PC #31).

variance pursuant to Ill. Rev. Stat., ch. 111½, par. 1035 et seq. and 35 Ill. Adm. Code 104. However, in so saying, the Board cautions that it is uncertain that variance can be granted under the CAA.

SPECIAL RULE FOR CCA

Jefferson Smurfit requests that the Board take into account wnat Jefferson Smurfit characterizes as special circumstances of its CCA Carol Stream facility and, thereby, exempt this plant from further regulation under the proposed rule. The record in this matter is insufficient to justify individualized regulatory relief for the CCA Carol Stream facility. Such relief is therefore denied. Jefferson Smurfit is at liberty to pursue individualized relief in the form of a variance or site-specific regulation or both in proceedings separate from the instant docket.

ORDER

The Clerk of the Pollution Control Board is directed to submit the following adopted rule to the Secretary of State for final notice:

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE B: AIR POLLUTION
CHAPTER 1: POLLUTION CONTROL BOARD

SUBPART H: SPECIAL LIMITATIONS FOR SOURCES IN MAJOR URBANIZED AREAS WHICH ARE NONATTAINMENT FOR OZONE

Section 215.245 Flexographic and Rotogravure Printing

a) The limitations of Subpart P shall apply unless the facility's aggregate uncontrolled rotogravure and/or flexographic printing press emissions of volatile organic material are limited by operating permit conditions to 90.7 Mg (100 tons) per year or less in the absence of air pollution control equipment or whose actual emissions in the absence of air pollution control equipment would be less than or equal to 90.7 Mg (100 tons) per year when averaged over the preceding three calendar years.

b) If an owner or operator of a packaging rotogravure printing press proposes to comply with the limitations of Section 215.401 pursuant to subsection (d) of that Section, then the combined capture and control system must provide an overall reduction in volatile organic material emissions of at least 65 percent.

IT IS SO ORDERED.

Board Member J. Theodore Meyer dissented.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 29th day of October, 1987, by a vote of 6-1.

Dorothy M. Gunn

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board