RULES AND REGULATIONS

Title 25—ENVIRONMENTAL PROTECTION

ENVIRONMENTAL QUALITY BOARD

[25 PA. CODE CHS. 121, 129 AND 130]

Flexible Packaging Printing Presses, Offset Lithographic Printing Presses and Letterpress Printing Presses; Adhesives, Sealants, Primers and Solvents

The Environmental Quality Board (Board) amends Chapters 121, 129 and 130 (relating to general provisions; standards for sources; and standards for products) to read as set forth in Annex A.

This final-form rulemaking amends Chapter 121 to add terms and definitions in § 121.1 (relating to definitions) and amends Chapter 129 to limit emissions of volatile organic compounds (VOC) from inks, varnishes, coatings, adhesives, fountain solutions and cleaning solutions used or applied on or with flexible packaging printing presses, offset lithographic printing presses and letterpress printing presses. The final-form rulemaking amends §§ 129.51 and 129.67 (relating to general; and graphic arts systems) and adds §§ 129.67a and 129.67b (relating to control of VOC emissions from flexible packaging printing presses; and control of VOC emissions from offset lithographic printing presses and letterpress printing presses).

The final-form rulemaking also amends the adhesives, sealants, primers and solvents regulations in Chapters 129 and 130 to clarify the applicability of the adhesive, sealant, adhesive primer and sealant primer requirements of §§ 129.77 and 130.703 (relating to control of emissions from the use or application of adhesives, sealants, primers and solvents; and exemptions and exceptions) to the adhesives used or applied on or with the printing presses regulated under this final-form rulemaking. This order was adopted by the Board at its meeting of February 18, 2014.

A. *Effective Date*

This final-form rulemaking will be effective upon publication in the *Pennsylvania Bulletin*.

This final-form rulemaking will be submitted to the United States Environmental Protection Agency (EPA) for approval as a revision to the Pennsylvania State Implementation Plan (SIP) upon publication.

B. *Contact Persons*

For further information, contact Kirit Dalal, Chief, Division of Air Resource Management, Bureau of Air Quality, 12th Floor, Rachel Carson State Office Building, P. O. Box 8468, Harrisburg, PA 17105-8468, (717) 772-3436; or Kristen Furlan, Assistant Counsel, Bureau of Regulatory Counsel, 9th Floor, Rachel Carson State Office Building, P. O. Box 8464, Harrisburg, PA 17105-8464, (717) 787-7060. Persons with a disability may use the Pennsylvania AT&T Relay Service by calling (800) 654-5984 (TDD users) or (800) 654-5988 (voice users). This final-form rulemaking is available on the Department of Environmental Protection's (Department) web site at www.dep.state.pa.us (DEP Search/Keyword: EQB).

C. *Statutory Authority*

This final-form rulemaking is authorized under section 5(a)(1) and (8) of the Air Pollution Control Act (35 P. S. § 4005(a)(1) and (8)), which in subsection (a)(1) grants the Board the authority to adopt rules and regulations for the prevention, control, reduction and abatement of air pollution in this Commonwealth, and which in subsection (a)(8) grants the Board the authority to adopt rules and regulations designed to implement the Clean Air Act (CAA) (42 U.S.C.A. §§ 7401—7671q).

D. *Background and Summary*

The purpose of this final-form rulemaking is to implement control measures to reduce VOC emissions from inks, varnishes, coatings, adhesives, fountain solutions and cleaning solutions used or applied on or with flexible packaging printing presses, offset lithographic printing presses and letterpress printing presses. VOCs are precursors for ground-level ozone formation. Ground-level ozone, a public health and welfare hazard, is not emitted directly by inks, coatings and other materials to the atmosphere, but is formed by a photochemical reaction between VOCs and nitrogen oxides (NO_x) in the presence of sunlight. In accordance with sections 172(c)(1), 182(b)(2)(A) and 184(b)(1)(B) of the CAA (42 U.S.C.A. §§ 7502(c)(1), 7511a(b)(2)(A) and 7511c(b)(1)(B)), the final-form rulemaking establishes the VOC emission limits and other requirements of the EPA 2006 Control Techniques Guidelines (CTG) for flexible packaging printing and for offset lithographic printing and letterpress printing for these sources in this Commonwealth. See Consumer and Commercial Products, Group II: Control Techniques Guidelines in Lieu of Regulations for Flexible Packaging Printing Materials, Lithographic Printing Materials, Letterpress Printing Materials, Industrial Cleaning Solvents, and Flat Wood Paneling Coatings, 71 FR 58745, 58747 (October 5, 2006).

The EPA is responsible for establishing National Ambient Air Quality Standards (NAAQS) for six criteria pollutants considered harmful to public health and the environment: ozone; particulate matter; NO_x; carbon monoxide; sulfur dioxide; and lead. The CAA established two types of NAAQS: primary standards, limits set to protect public health; and secondary standards, limits set to protect public welfare, including protection against visibility impairment and from damage to animals, crops, vegetation and buildings. The EPA established primary and secondary ozone NAAQS to protect public health and welfare.

When ground-level ozone is present in concentrations in excess of the Federal health-based 8-hour NAAQS for ozone, public health and welfare are adversely affected. Ozone exposure correlates to increased respiratory disease and higher mortality rates. Ozone can inflame and damage the lining of the lungs. Within a few days, the damaged cells are shed and replaced. Over a long time period, lung tissue may become permanently scarred, resulting in permanent loss of lung function and a lower quality of life. When ambient ozone levels are high, more people with asthma have attacks that require a doctor's attention or use of medication. Ozone also makes people more sensitive to allergens including pet dander, pollen and dust mites, all of which can trigger asthma attacks.

The EPA concluded that there is an association between high levels of ambient ozone and increased hospital admissions for respiratory ailments, including asthma.

While children, the elderly and those with respiratory problems are most at risk, even healthy individuals may experience increased respiratory ailments and other symptoms when they are exposed to high levels of ambient ozone while engaged in activities that involve physical exertion. High levels of ozone also affect animals in ways similar to humans. In addition to causing adverse human and animal health effects, the EPA concluded that ozone affects vegetation and ecosystems, leading to reductions in agricultural crop and commercial forest yields by destroying chlorophyll; reduced growth and survivability of tree seedlings; and increased plant susceptibility to disease, pests and other environmental stresses, including harsh weather. In long-lived species, these effects may become evident only after several years or even decades and have the potential for long-term adverse impacts on forest ecosystems. Ozone damage to the foliage of trees and other plants can decrease the aesthetic value of ornamental species used in residential landscaping, as well as the natural beauty of parks and recreation areas. Through deposition, ground-level ozone also contributes to pollution in the Chesapeake Bay. The economic value of some welfare losses due to ozone can be calculated, such as crop yield loss from both reduced seed production and visible injury to some leaf crops, including lettuce, spinach and tobacco, as well as visible injury to ornamental plants, including grass, flowers and shrubs. Other types of welfare loss may not be quantifiable, such as the reduced aesthetic value of trees growing in heavily visited parks.

High levels of ground-level ozone can also cause damage to buildings and synthetic fibers, including nylon, and reduced visibility on roadways and in natural areas. The implementation of additional measures to address ozone air quality nonattainment in this Commonwealth is necessary to protect the public health and welfare, animal and plant health and welfare, and the environment.

In July 1997, the EPA promulgated primary and secondary ozone standards at a level of 0.08 part per million (ppm) averaged over 8 hours. See 62 FR 38856 (July 18, 1997). In 2004, the EPA designated 37 counties in this Commonwealth as 8-hour ozone nonattainment areas for the 1997 8-hour ozone NAAQS. Based on ambient air monitoring data for the 2013 ozone season, all monitored areas of this Commonwealth are attaining the 1997 8-hour ozone NAAQS. The Department must ensure that the 1997 ozone standard is attained and maintained by implementing permanent and enforceable control measures to ensure violations of the standard do not occur for the next decade.

In March 2008, the EPA lowered the standard to 0.075 ppm averaged over 8 hours to provide even greater protection for children, other at-risk populations and the environment against the array of ozone-induced adverse health and welfare effects. See 73 FR 16436 (March 27, 2008). In April 2012, the EPA designated five areas in this Commonwealth as nonattainment for the 2008 ozone NAAQS. See 77 FR 30088, 30143 (May 21, 2012). These areas include all or a portion of Allegheny, Armstrong, Berks, Beaver, Bucks, Butler, Carbon, Chester, Delaware, Fayette, Lancaster, Lehigh, Montgomery, Northampton, Philadelphia, Washington and Westmoreland Counties. The Commonwealth must ensure that these areas attain the 2008 ozone standard by 2015 and that they continue to maintain the standard thereafter. Furthermore, five monitors in areas of this Commonwealth that the EPA considered "unclassifiable/attainment" when it designated nonattainment areas in April 2012 violated the 2008 standard in 2012. The Commonwealth must also ensure that these "unclassifiable/attainment" areas attain and maintain the standard to avoid having them designated as nonattainment areas. Implementing control measures for reducing the emissions of VOCs, such as the recommendations included in the CTGs, is a strategy that the Commonwealth can use to attain and maintain the 2008 standard in all of these areas.

There are no Federal statutory or regulatory limits for VOC emissions from flexible packaging printing presses, offset lithographic printing presses and letterpress printing presses. State regulations to control VOC emissions from flexible packaging printing presses, offset lithographic printing presses and letterpress printing presses are required under Federal law, however, and will be reviewed by the EPA to determine if the provisions meet the "reasonably available control technology" (RACT) requirements of the CAA and its implementing regulations. See Consumer and Commercial Products, Group II: Control Techniques Guidelines in Lieu of Regulations for Flexible Packaging Printing Materials, Lithographic Printing Materials, Letterpress Printing Materials, Industrial Cleaning Solvents, and Flat Wood Paneling Coatings, 71 FR 58745, 58747. The EPA defines RACT as "the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility." See State Implementation Plans; General Preamble for Proposed Rulemaking on Approval of Plan Revisions for Nonattainment Areas—Supplement (on Control Techniques Guidelines), 44 FR 53761, 53762 (September 17, 1979).

Section 172(c)(1) of the CAA provides that SIPs for nonattainment areas must include "reasonably available control measures," including RACT, for sources of emissions. Section 182(b)(2) of the CAA provides that, for moderate ozone nonattainment areas, states must revise their SIPs to include RACT for sources of VOC emissions covered by a CTG document issued by the EPA prior to the area's date of attainment. More importantly, section 184(b)(1)(B) of the CAA requires that states in the Ozone Transport Region (OTR), including the Commonwealth, submit a SIP revision requiring implementation of RACT for all sources of VOC emissions in the state covered by a specific CTG.

Section 183(e) of the CAA (42 U.S.C.A. § 7511b(e)) directs the EPA to list for regulation those categories of products that account for at least 80% of the VOC emissions from consumer and commercial products in ozone nonattainment areas. Section 183(e)(3)(C) of the CAA further provides that the EPA may issue a CTG in place of a National regulation for a product category when the EPA determines that the CTG will be "substantially as effective as regulations" in reducing emissions of VOC in ozone nonattainment areas. In 1995, the EPA listed flexible packaging printing materials, lithographic printing materials and letterpress printing materials on its section 183(e) list and, in 2006, issued CTGs for flexible packaging printing materials and for offset lithographic printing and letterpress printing materials. See 60 FR 15264 (March 23, 1995) and 71 FR 58745; *Control Techniques Guidelines for Flexible Package Printing*, EPA 453/R-06-003, Office of Air Quality Planning and Standards, EPA, September 2006 (FPP CTG); and *Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing*, EPA 453/R-06-002, Office of Air Quality Planning and Standards, EPA, September 2006 (LLP CTG). The CTGs are available on the EPA web site at www.epa.gov/airquality/ozonepollution/SIPToolkit/ctgs.html.

In the notice published at 71 FR 58745, the EPA determined that the CTGs would be substantially as effective as a National regulation in reducing VOC emissions from these printing material product categories in ozone nonattainment areas. The CTGs provide states with the EPA's recommendation of what constitutes RACT for the covered category. States can use the recommendations provided in the CTGs to inform their own determination as to what constitutes RACT for VOC emissions from the covered category. State air pollution control agencies are free to implement other technically sound approaches that are consistent with the CAA requirements and the EPA's implementing regulations or guidelines.

When developing the RACT measures included in its Flexible Package Printing CTG, the EPA took into account the National Emission Standards for Hazardous Air Pollutants (NESHAP) for the printing and publishing industry promulgated at 61 FR 27132 (May 30, 1996) and codified at 40 CFR Part 63, Subpart KK (relating to National emission standards for the printing and publishing industry). Many hazardous air pollutants (HAP) are VOCs, but not all VOCs are HAPs. The requirements of the 1996 NESHAP apply to "major sources" of HAP from printing and publishing operations, including flexible package printing operations. For the purpose of regulating HAP, a "major source" is considered to be a stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year (tpy) of any single listed HAP or 25 tpy of any combination of HAPs. See section 112(a)(1) of the CAA (42 U.S.C.A. § 7412(a)(1)).

The Department reviewed the recommendations included in the 2006 CTGs for flexible packaging printing presses and for offset lithographic printing presses and letterpress printing presses for their applicability to the ozone reduction measures necessary for this Commonwealth. The Bureau of Air Quality determined that the measures provided in the final-form rulemaking are appropriate to be implemented in this Commonwealth as RACT for these source categories.

Implementation of the control measures included in the final-form rulemaking will achieve VOC emission reductions locally and will also reduce the transport of VOC emissions and ground-level ozone to downwind states. Adoption of VOC emission requirements for flexible packaging printing presses, offset lithographic printing presses and letterpress printing presses is part of the Commonwealth's strategy, in concert with other OTR jurisdictions, to further reduce transport of VOC ozone precursors and ground-level ozone throughout the OTR to attain and maintain the 8-hour ozone NAAQS. The final-form rulemaking is required under the CAA and is reasonably required to attain and maintain the health-based 8-hour ozone NAAQS and to satisfy related CAA requirements in this Commonwealth. Upon publication in the *Pennsylvania Bulletin*, the final-form rulemaking will be submitted to the EPA as a revision to the SIP.

The final-form rulemaking was discussed with the Air Quality Technical Advisory Committee (AQTAC) on August 1, 2013. During the AQTAC's consideration of the final-form rulemaking, the following issues were discussed: the change from the proposed 15 pounds per day applicability threshold to the 450 pounds per month applicability threshold and the associated change from daily recordkeeping to monthly recordkeeping; the change from 30% to 70% VOC content for cleaning solutions; the change from the 55-gallon limit to the 110-gallon limit for noncomplying cleaning solutions used at the facility each year; and the use of the VOC content of the highest VOC-containing ink as a surrogate for the VOC content of all inks used on the press to ease the recordkeeping burden. Following its discussion on August 1, 2013, the AQTAC voted 11-1-1 to concur with the Department's recommendation to present the final-form rulemaking to the Board for approval for publication as a final-form rulemaking with consideration of the changes discussed at the meeting.

The Department consulted with the Small Business Compliance Advisory Committee (SBCAC) on July 24, 2013. The SBCAC concurred with the Department's recommendation to forward the final-form rulemaking to the Board for consideration for publication as final-form rulemaking. The Department also consulted with the Citizens Advisory Council (CAC), Policy and Regulatory Oversight Committee on August 28, 2013. The Policy and Regulatory Oversight Committee reported on the final-form rulemaking to the CAC at its meeting of September 17, 2013. The CAC, on the recommendation of the Policy and Regulatory Oversight Committee, concurred with presenting the final-form rulemaking to the Board. The Department anticipates assisting the Graphic Arts Association (GAA), the National Federation of Independent Businesses (NFIB) and the SBCAC in reaching out to their membership concerning this final-form rulemaking.

E. *Summary of Final-Form Rulemaking and Changes from Proposed to Final-Form Rulemaking*

§ 121.1. Definitions

The final-form rulemaking adds 18 new terms and definitions to § 121.1 and revises the definitions of five existing terms to support §§ 129.67a and 129.67b. The final-form rulemaking deletes two proposed new terms that are not needed to support the final-form rulemaking.

The following new terms and definitions are identical to the amendments in the proposed rulemaking: "alcohol substitute," "flexible packaging," "flexible packaging printing press," "fountain solution," "heatset ink," "letterpress printing," "printing press," "sheet-fed printing" and "web printing."

A member of the AQTAC commented at the AQTAC's August 1, 2013, meeting on the definition of "alcohol substitute," suggesting that the second sentence of the definition should be deleted as extraneous information. The Board considered this suggestion and retained the definition as proposed because the second sentence provides helpful information.

A member of the AQTAC commented at the AQTAC's August 1, 2013, meeting on the definition of "fountain solution," suggesting that the phrase "specifically isopropyl alcohol" was restrictive and should be revised to include all alcohols. The Board considered this suggestion and retained the definition as proposed because "isopropyl alcohol" is specified in the LLP CTG as one of the most common VOC components, in addition to alcohol substitutes, to be added to fountain solutions.

The following new definitions contain changes made to the proposed language in response to public comments. The Board revised the proposed definition of "batch" to reflect that it applies to both fountain solutions and cleaning solutions. The Board revised the proposed definitions of "lithographic plate," "lithographic printing" and "offset lithographic printing" to delete "thin metal." The Board clarified the proposed definition of "varnish."

The following new definition contains changes to the proposed language in response to concerns expressed by members of the AQTAC at its August 1, 2013, meeting. The Board revised the proposed definition of "alcohol" to correct the subscript for the hydrogen atom in the general formula that represents alcohols.

The following definitions are new in the final-form rulemaking and are intended to add clarity to other definitions and to § 129.67b: "cleaning solution," "heatset" and "non-heatset."

The final-form rulemaking does not make changes to the proposed amendments of two existing terms. The definition of "paper, film or foil coating or paper, film or foil surface coating" is identical to the amendments in the proposed rulemaking, which clarify that a coating applied to a flexible packaging substrate is considered surface coating and not printing, if the coating is not applied on or in-line with a flexible packaging printing press. These coating processes are regulated under § 129.52b (relating to control of VOC emissions from paper, film and foil surface coating processes). The final-form definition of the existing term "rotogravure printing" is identical to the amendment in the proposed rulemaking to add a missing word for clarity.

The final-form rulemaking amends definitions of the existing terms "as applied," "as supplied" and "CPDS—Certified Product Data Sheet" for clarity. Additionally, a member of the AQTAC asked at the August 1, 2013, meeting if there was an approving authority for the option of using an equivalent or alternative method included in the revised definition of "CPDS—Certified Product Data Sheet." The Board considered this question and clarified the definition to specify that the equivalent or alternative method must be approved by the Department. The Board thanks the AQTAC for providing this comment.

The final-form rulemaking does not adopt the proposed term "first installation date" and its definition and moves the definition into Table 1 in § 129.67a and § 129.67b(d)(1), where the term is used in § 129.67b(d)(1)(i) and the definition fits comfortably in § 129.67b(d)(1)(ii). The final-form rulemaking does not adopt the proposed definition of "heatset dryer" because it is no longer needed.

§ 129.51. General

The final-form rulemaking amends § 129.51(a) to extend its coverage to the owner and operator of a flexible packaging printing press, offset lithographic printing press or letterpress printing press, or a combination of these press types, covered by this final-form rulemaking. Section 129.51(a) provides an alternative method for the owner and operator of an affected facility to achieve compliance with air emission limits. Section 129.51(a)(3) is amended to clarify the materials included in the requirement.

The final-form rulemaking amends § 129.51(c) to clarify that the test methods in Chapter 139 (relating to sampling and testing) should be followed to monitor compliance with the emission requirements of § 129.51, unless otherwise set forth in Chapter 129.

The final-form rulemaking amends § 129.51(d) to clarify the records that are generally applicable under Chapter 129 to demonstrate emission limitations or control requirements and the amount of time the records shall be kept.

The final-form rulemaking redesignates § 129.51(d)(3) as § 129.51(e) to clarify that the owner or operator of a facility or source claiming that the facility or source is exempt from the VOC control provisions of Chapter 129 shall maintain records that clearly demonstrate to the Department that the facility or source is not subject to the VOC emission limitations or control requirements of Chapter 129.

§ 129.67. Graphic arts systems

The final-form rulemaking amends § 129.67 to account for the new requirements that will apply to the owner and operator of a flexible packaging printing press under § 129.67a. There are no changes to this section from the proposed rulemaking.

Section 129.67 applies more broadly than § 129.67a in two ways. First, § 129.67 applies to rotogravure and flexographic printing presses beyond those used for flexible packaging printing. Second, § 129.67 requires VOC emissions from surface coating operations to count toward the total VOC emissions that trigger applicability of the section to the owner and operator of a facility that has emissions from a rotogravure or flexographic printing press. The VOC emission applicability threshold is higher, however, than under final-form § 129.67a.

The amendments to § 129.67 clarify that an owner or operator of a flexible packaging printing press, who was required to install a control device under § 129.67 prior to the effective date of this final-form rulemaking and who is also subject to the recordkeeping, reporting and work practice requirements of § 129.67a by virtue of meeting the 450 pounds per month or 2.7 tons per 12-month rolling period, or both, VOC emission threshold in § 129.67a(a)(1)(ii), is subject both to the existing control device requirement of § 129.67 and the new recordkeeping, reporting and work practice requirements of § 129.67a.

The amendments to § 129.67 also clarify, however, that an owner or operator of a flexible packaging printing press who is subject to the control requirements of § 129.67a by virtue of meeting the threshold of 25 tpy of potential emissions of VOC, before consideration of add-on controls, for an individual flexible packaging printing press dryer under § 129.67a(a)(1)(i) is not subject to § 129.67 because they are subject to more stringent control requirements under § 129.67a. This owner and operator will also be subject to the recordkeeping, reporting, work practice and other requirements of § 129.67a.

§ 129.67a. Control of VOC emissions from flexible packaging printing presses

The final-form rulemaking adds § 129.67a to regulate VOC emissions from flexible packaging printing presses. As explained in subsection (b), § 129.67a supersedes the requirements of a RACT permit already issued under §§ 129.91—129.95 (relating to stationary sources of NO_x and VOCs) to the owner or operator for VOC emissions from a flexible packaging printing press subject to § 129.67a, except to the extent the RACT permit contains more stringent requirements.

The applicability of § 129.67a is described in subsection (a), which establishes a threshold with broad applicability in subsection (a)(1)(ii) and a threshold for control requirements on higher VOC-emitting presses, based on their

potential emissions from the dryer, before consideration of add-on controls, in subsection (a)(1)(i).

The broadly applicable threshold in subsection (a)(1)(ii) is as follows: 450 pounds (204.1 kilograms) per month or 2.7 tons (2,455 kilograms) per 12-month rolling period of actual VOC emissions, before consideration of add-on controls, from all flexible packaging printing operations, and all VOC emissions from related cleaning activities, at the facility. An owner and operator of a facility that meets or exceeds either of these thresholds shall comply with the recordkeeping and reporting requirements of subsection (e), the work practice requirements for cleaning activities of subsection (g) and the sampling and testing requirements in subsection (f), as applicable.

Subsection (a)(1)(iii) was not in the proposed rulemaking. This amendment to the final-form rulemaking provides that the owner and operator of a flexible packaging printing press that emits actual VOC emissions below the 450 pounds per month or 2.7 tons per 12-month rolling period threshold are subject to the final-form rulemaking. The owner and operator are subject only to the recordkeeping requirements in subsection (e)(3) and (4) to demonstrate that they are exempt from the VOC control provisions of this section, and they are subject to the reporting requirements, when requested by the Department, in subsection (e)(5).

In the final-form rulemaking, the Department replaced the proposed "per day" applicability threshold in § 129.67a(a)(1)(ii) with the 450 pounds per month applicability threshold, in consideration of comments received from commentators. The "per day" applicability threshold would have necessitated keeping daily records. The "per month" threshold allows monthly records, which is more appropriate for the flexible packaging printing industry than the daily records in the proposed rulemaking, due to the industry practice of tracking material usage on a monthly basis. Furthermore, the "per month" applicability threshold considers the recordkeeping and reporting burden of the population of small business-sized printers that are subject to subsection (a)(1)(iii) that need to keep minimum records to demonstrate that they are not subject to any other compliance requirements.

The threshold for control requirements on higher VOC-emitting presses in subsection (a)(1)(i) is 25 tpy potential emissions from the dryer of an individual flexible packaging printing press of VOC from inks, coatings and adhesives combined, before consideration of add-on controls. An owner and operator of a press that meets or exceeds this threshold shall comply with the emission limits in subsection (c) and the compliance and monitoring requirements in subsection (d) if an add-on air pollution control device is used, as well as the sampling and testing requirements in subsection (f) and the recordkeeping, reporting and work practice requirements for cleaning activities of subsections (e) and (g).

The applicability of § 129.67a is further described in subsection (a)(2), which establishes that an owner or operator of a flexographic or rotogravure printing press subject to subsection (a)(1)(ii) and § 129.67 that prints flexible packaging materials, who was required to install a control device under § 129.67 prior to the effective date of this section, shall continue the operation of that control device and also meet the requirements of § 129.67a.

Subsection (a)(3) clarifies that VOCs from adhesives used at the facility that are not used or applied on or with the flexible packaging printing press are not subject to § 129.67a and may be regulated under § 129.52b, § 129.77 or Chapter 130, Subchapter D (relating to adhesives, sealants, primers and solvents). Subsection (a)(4) directs the owner or operator of a surface coating process for flexible packaging substrates that is not done with a flexible packaging printing press to § 129.52(b).

Subsection (b) explains that the requirements of § 129.67a supersede the requirements of a RACT permit issued under §§ 129.91—129.95 prior to January 1, 2015, to the owner or operator of a source subject to § 129.67a, except to the extent the RACT permit contains more stringent requirements. January 1, 2015, is the compliance date for this final-form rulemaking, and appears throughout the final-form rulemaking. It is 2 years later than the January 1, 2013, compliance date in the proposed rulemaking to account for the anticipated publication date of this final-form rulemaking.

Subsection (c) establishes VOC emission limitation options beginning January 1, 2015, for a person subject to § 129.67a by virtue of meeting or exceeding the 25 tpy threshold in subsection (a)(1)(i). Beginning January 1, 2015, a person subject to subsection (a)(1)(i) may not cause or permit the emission into the outdoor atmosphere of VOCs from a flexible packaging printing press, unless one or more of the VOC content limits for inks, coatings and adhesives in subsection (c) is met; one or more of the VOC vapor recovery, oxidation or other control system requirements in subsection (c) is met; or the Department has issued a plan approval, operating permit or Title V permit to the owner or operator prior to January 1, 2015, establishing a Federally-enforceable limitation to limit potential emissions of VOC from the flexible packaging printing press below 25 tpy before consideration of add-on controls. The dates in Table 1 reflect the date of the proposed 1996 NESHAP for the printing and publishing industry, namely March 14, 1995, and the compliance date of this final-form rulemaking, namely January 1, 2015. The EPA used these events for suggested cut-off dates in the Flexible Package Printing CTG.

To improve clarity and provide greater specificity in subsection (c), the final-form rulemaking contains revisions not included in the proposed rulemaking. These revisions include: an equation for calculating VOC content that was proposed in subsection (d)(1) of the proposed rulemaking and fits more comfortably under subsection (c); an equation for calculating daily weighted average VOC content; amendments to reflect the January 1, 2015, compliance date and to include the definition of "first installation date"; and deletion of proposed subsection (c)(4) because the paragraph was redundant.

Subsection (d) identifies the compliance and monitoring procedures to demonstrate compliance with § 129.67a for the owner or operator of a flexible packaging printing press subject to subsection (a)(1)(i) that uses an add-on air pollution control device in accordance with subsection (c)(3). This subsection has been revised in the final-form rulemaking to provide specificity of the requirements for use of an add-on air pollution control device and to make subsection (d) consistent with the add-on air pollution control device provisions of § 129.67b(e). Subsection (d)(1) describes requirements for monitoring equipment and describes operational records supporting the compliance monitoring system, though most of the recordkeeping requirements are moved to subsection (e). Subsection (d)(1) has been revised to clarify that the temperature must be continuously monitored and the temperature reading shall be recorded at least once every 15 minutes, rather than daily as proposed. Subsection (d)(2) specifies the minimum temperature at which the add-on air pollu-

tion control device can operate and provides for temperature fluctuations. Subsection (d)(3) specifies that the add-on air pollution control device must be in operation at all times that the source is operating. Subsection (d)(4) requires that the air pollution control device be approved, in writing, by the Department in a plan approval, operating permit or Title V permit prior to use.

Subsection (e) establishes recordkeeping and reporting requirements beginning January 1, 2015. This subsection has been revised in the final-form rulemaking in response to comments received during the public comment period. Subsection (e) requires the owner and operator to maintain records sufficient to demonstrate compliance with § 129.67a. The records may include purchase, use, production and other records. The recordkeeping requirements in the final-form rulemaking correspond to applicability thresholds and substantive requirements of this section. Specifically, subsection (e)(1) requires a person subject to § 129.67a(a)(1)(i) using an add-on air pollution control device to maintain records sufficient to demonstrate compliance with subsection (d), which contains the compliance and monitoring requirements for add-on air pollution control devices. These records include the temperature reading of the add-on air pollution control device, the maintenance performed on the add-on air pollution control device and monitoring equipment, including the date and type of maintenance, and the catalyst activity test performed, if applicable. Subsection (e)(2) requires a person subject to § 129.67a(a)(1)(i) not using an add-on air pollution control device to maintain records of the as applied VOC content of inks, coatings and adhesives sufficient to demonstrate compliance with the limitations in subsection (c)(1) or (2); subsection (c)(1) and (2) sets forth the individual and weighted average VOC content limit requirements of inks, coatings and adhesives.

Subsection (e)(3) requires owners and operators claiming an exemption from a VOC control provision of this section based on potential or actual VOC emissions to keep records that demonstrate to the Department that the press or facility is exempt. This includes owners and operators with actual VOC emissions below the threshold established in § 129.67a(a)(1)(iii). Subsection (e)(4) allows the owner or operator to group materials into classes using the highest VOC content in any material in a class to represent that class of material. The Board deleted the express reference to the specific parameters of each ink, coating, thinner and component from these requirements to allow owners and operators greater flexibility in developing the records. Subsection (e)(5) specifies that records required under this subsection be maintained for 2 years unless a longer period is required by a plan approval or operating permit issued under Chapter 127 (relating to construction, modification, reactivation and operation of sources). The records shall be submitted to the Department in an acceptable format upon receipt of a written request. Subsection (e)(6) requires that a person subject to subsection (a)(1)(i) using an add-on air pollution control device that is required to demonstrate overall control efficiency in accordance with subsections (c)(3) and (d) shall submit reports to the Department in accordance with Chapter 139.

Subsection (f) specifies sampling and testing methods. This subsection has been expanded in the final-form rulemaking. Subsection (f)(1) requires that sampling of an ink or coating and testing for the VOC content of the sampled ink or coating be performed in accordance with the procedures and test methods specified in Chapter 139. Subsection (f)(1) also requires that sampling and testing of an add-on air pollution control device be performed in accordance with the procedures and test methods specified in Chapter 139 and be performed no later than 180 days after the compliance date of the press or have been performed and previously approved by the Department within 5 years prior to January 1, 2015. The Department may waive retesting of the capture efficiency for capture systems that are not permanent total enclosures if the operating parameters indicate that a fundamental change has not taken place in the operation or design of the equipment, unless retesting is required under Subpart C, Article III (relating to air resources) or a plan approval, operating permit or an order issued by the Department. Fundamental changes include adding print stations to a press, increasing or decreasing the volumetric flow rate from the dryer (for example, by changing the size of press fans or motors, or removal or derating of dryers), or by changing the static duct pressure.

Subsection (f)(2) addresses the test methods and procedures to determine the overall control efficiency of the add-on air pollution control devices subject to prior written approval by the Department. Subsection (f)(2) requires that capture efficiency testing be performed in accordance with either the procedures and test methods specified in 40 CFR Part 51, Appendix M, Methods 204—204F or 40 CFR Part 63, Subpart KK, Appendix A (relating to data quality objective and lower confidence limit approaches for alternative capture efficiency protocols and test methods). Subsection (f)(2) further requires that the control efficiency must be determined using one or more of three EPA Reference methods: Method 25, Method 25A or Method 18. EPA Reference Method 25A may not be used if the total gaseous nonmethane organic compound concentration at the outlet of the add-on air pollution control device is equal to or greater than 50 parts per million by volume, measured as carbon. EPA Reference Methods 18 and 25 may be used if the total gaseous nonmethane organic compound concentration at the outlet of the add-on air pollution control device is equal to or greater than 50 parts per million by volume, measured as carbon. EPA Reference Method 18 may be used in conjunction with EPA Reference Method 25A to subtract emissions of exempt VOCs. The method used to measure the inlet concentration of VOC may be the same method used to determine the outlet concentration of VOC unless use of the same method is determined to be technically infeasible. Subsection (f)(3) authorizes the use of other test methods demonstrated to provide results that are acceptable for purposes of determining compliance with § 129.67a if prior approval is obtained in writing from the Department and the EPA.

Subsection (g) establishes work practice requirements for cleaning activities beginning January 1, 2015. This subsection applies only to the owner and operator of a flexible packaging printing press subject to subsection (a)(1)(i), (1)(ii) or (2). It does not apply to the owner and operator of a press with emissions below the applicability threshold in subsection (a)(1)(iii). Subsection (g)(1) establishes work practices. Subsection (g)(2) and (3) specifies the cleaning activities to which the work practices apply and do not apply. Consistent with a one-page internal EPA memorandum clarifying this aspect of the CTG, the final-form rulemaking does not specify work practices for cleaning activities addressed by the EPA 2006 Industrial Cleaning Solvents CTG. See *Reasonably Available Control Technology (RACT) for Cleaning in Flexible Package Printing*, Peter Tsirigotis, Director, Sector Policies and Programs Division (D205-01), EPA, February 9, 2009. Subsection (g)(3)(v) is more stringent than what is recom-

mended in the CTG for flexible packaging printing presses. The CTG recommends that the work practices for cleaning materials apply to parts washers or cold cleaners used for cleaning press parts. In this Commonwealth, however, the use of parts washers and cold cleaners is regulated under § 129.63 (relating to degreasing operations). The requirements of § 129.63 are more stringent than the recommendation in the CTG, but must be maintained to satisfy the anti-backsliding provisions of sections 110 and 193 of the CAA (42 U.S.C.A. §§ 7410 and 7515).

§ 129.67b. Control of VOC emissions from offset lithographic printing presses and letterpress printing presses

The final-form rulemaking adds § 129.67b to regulate VOC emissions from offset lithographic printing presses and letterpress printing presses. As explained in subsection (b), § 129.67b supersedes the requirements of a RACT permit already issued under §§ 129.91—129.95 to the owner or operator for VOC emissions from an offset lithographic printing press or a letterpress printing press, or both, subject to § 129.67b, except to the extent the RACT permit contains more stringent requirements.

The applicability of § 129.67b is described in subsection (a), which establishes a threshold with broad applicability in subsection (a)(1)(ii)—(iv), and a threshold for control requirements on higher VOC-emitting presses, based on their potential emissions from the dryer, before consideration of add-on controls, in subsection (a)(1)(i).

The broadly applicable threshold in subsection (a)(1)(ii)—(iv) is as follows: 450 pounds (204.1 kilograms) per month or 2.7 tons (2,455 kilograms) per 12-month rolling period of actual VOC emissions, before consideration of add-on controls, from all letterpress printing press operations, offset lithographic printing press operations, or a combination of letterpress and offset lithographic printing press operations, and all emissions from related cleaning activities, at the facility. An owner and operator of a facility that meets or exceeds this threshold shall comply with the compliance and monitoring, recordkeeping and reporting requirements of subsections (e)—(g), the sampling and testing requirements in subsection (h) and the work practice requirements for cleaning activities in subsection (i). Subsection (a)(1)(iv), regarding the combination of presses, is new in the final-form rulemaking.

Subsection (a)(1)(v) was not in the proposed rulemaking. This new provision establishes that the owner and operator of an offset lithographic printing press or letterpress printing press that emits below the 450 pounds per month or 2.7 tons per 12-month rolling period threshold are subject to the final-form rulemaking. These owners and operators are subject only to the recordkeeping requirements in subsection (f)(3) and (4) to demonstrate that they are exempt from the VOC control provisions of this section and to the reporting requirements of subsection (g), when requested by the Department.

In the final-form rulemaking, the Department replaced the proposed "per day" applicability threshold in § 129.67b(a)(1)(ii) and (iii) with the 450 pounds per month applicability threshold, in consideration of comments received from commentators. The "per day" applicability threshold would have necessitated keeping daily records. The "per month" threshold allows monthly records, which is more appropriate for the letterpress and offset lithographic printing press industry than the daily records in the proposed rulemaking, due to the industry practice of tracking material usage on a monthly basis. Furthermore, the "per month" applicability threshold considers the recordkeeping and reporting burden for the population of small business-sized printers that are subject to subsection (a)(1)(v) that need to keep minimum records to demonstrate that they are not subject to any other compliance requirements.

Each of the applicability provisions in subsection (a)(1) has been revised to clarify that "inks" include varnishes. The definition of "varnish" in § 121.1 explains, consistent with the LLP CTG, that varnish is an unpigmented ink.

The threshold for control requirements on higher VOC-emitting presses in subsection (a)(1)(i) is 25 tpy of potential VOC emissions from the dryer of a single heatset web offset lithographic printing press or heatset web letterpress printing press from all heatset inks, coatings and adhesives combined, before consideration of add-on controls. An owner and operator of a press that meets or exceeds this threshold must comply with the emission limits in subsections (c) and (d), the compliance and monitoring requirements in subsection (e), as well as the sampling and testing requirements in subsection (h) and the recordkeeping and reporting requirements and the work practice requirements for cleaning activities of subsections (f), (g) and (i).

In response to comments received on the proposed rulemaking, the Department added subsection (a)(2), which specifies that the owner or operator of an offset lithographic printing press subject to paragraph (1) may use the VOC emission retention factors and capture efficiency factors specified in new subsection (l) to determine the amount of potential or actual VOC emissions that is available for capture and control from the inks (including varnishes), fountain solutions and cleaning solutions used on the offset lithographic printing press.

Subsection (a)(3) clarifies that VOCs from adhesives used at the facility that are not used or applied on or with an offset lithographic printing press or a letterpress printing press are not subject to § 129.67b and may be regulated under § 129.77 or Chapter 130, Subchapter D.

Subsection (b) explains that the requirements of § 129.67b supersede the requirements of a RACT permit issued under §§ 129.91—129.95 prior to January 1, 2015, to the owner or operator of a source subject to § 129.67b, except to the extent the RACT permit contains more stringent requirements. January 1, 2015, is the compliance date for this final-form rulemaking, and appears throughout the final-form rulemaking. It is 2 years later than the January 1, 2013, compliance date in the proposed rulemaking to account for the anticipated publication date of this final-form rulemaking.

Subsection (c) establishes VOC emission limitations for cleaning solutions and fountain solutions used in or on printing presses subject to this section. Beginning January 1, 2015, subsection (c)(1) prohibits a person subject to subsection (a)(1)(i)—(iv) from causing or permitting the emission of VOCs into the outdoor atmosphere from cleaning solution used in or on an offset lithographic printing press or a letterpress printing press, unless specified conditions are met. This paragraph requires a VOC composite partial vapor pressure less than 10 millimeters of mercury at 68°F (20°C) or a VOC content less than 70% by weight. This paragraph allows a total gallon exemption for up to 110 gallons of noncomplying cleaning solutions. The 70% and 110-gallon restrictions are revised from the 30% and 55-gallon restrictions included in the proposed rulemaking in response to public

comment specifically sought by the Department in the preamble to the proposed rulemaking and are consistent with the LLP CTG. Subsection (c)(2) prohibits a person subject to subsection (a)(1)(i), (iii) or (iv) from causing or permitting the emissions of VOC into the outdoor atmosphere from a fountain solution used in an offset lithographic printing press unless the fountain solution meets a specified VOC limit. This paragraph has been revised in the final-form rulemaking in response to public comments received to specify VOC content limits rather than alcohol content or alcohol substitute limits. Subsection (c)(3) provides two exemptions from subsection (c)(2).

Subsection (d) establishes VOC emission limitations for heatset web offset lithographic printing presses and heatset web letterpress printing presses. This subsection has been reorganized in the final-form rulemaking and now contains the definition of "first installation date," which is used in this subsection and was defined in § 121.1 in the proposed rulemaking. Subsection (d)(1) applies to a person subject to § 129.67b by virtue of meeting or exceeding the threshold established in subsection (a)(1)(i) of 25 tpy of potential VOC emissions from the dryer of a single heatset press before consideration of add-on controls. Beginning January 1, 2015, subsection (d)(1) prohibits the emission into the outdoor atmosphere of VOCs from a single heatset web offset lithographic printing press or a single heatset web letterpress printing press, or both, unless the overall weight of VOCs emitted to the atmosphere from the heatset press dryer is reduced through the use of vapor recovery or oxidation or another method that is authorized under § 129.51(a). Subsection (d)(1) addresses heatset dryer pressure and overall control efficiency of an add-on air pollution control device for a heatset dryer and provides for an alternative limitation. The heatset dryer pressure must be maintained lower than the press room area pressure so that air flows into the heatset dryer at all times when the press is operating. The final-form rulemaking provides greater specificity on the conditions for Department approval of an alternative limitation for the overall control efficiency of an add-on air pollution control device for a heatset dryer. Subsection (d)(2) lists exceptions to the requirement for an add-on air pollution control device. Subsection (d)(3) specifies that subsection (d) does not apply if the Department has issued a plan approval, operating permit or Title V permit prior to January 1, 2015, to the owner or operator establishing a Federally-enforceable limitation to limit potential emissions below 25 tpy before consideration of add-on controls.

Subsection (e) specifies compliance and monitoring requirements to demonstrate compliance with the requirements of § 129.67b. Subsection (e)(1) sets forth compliance and monitoring requirements applicable to the owner or operator of a heatset printing press using an add-on air pollution control device in accordance with subsection (d) as a result of meeting or exceeding the 25 tpy potential VOC emissions threshold for a single heatset press in subsection (a)(1)(i). Subsection (e)(1) has been revised in the final-form rulemaking to be consistent with the compliance and monitoring requirements in § 129.67a(d) previously described, in response to comments received during the public comment period. Subsection (e)(2) indicates how an owner or operator of an offset lithographic printing press who is subject to the fountain solution VOC limits of subsection (c)(2) may demonstrate compliance. Subsection (e)(2) is revised in the final-form rulemaking in response to public comments received to clarify that the VOC content of a fountain solution shall be determined one time for each recipe of fountain solution. Subsection (e)(3) indicates the acceptable methods by which the owner or operator of an offset lithographic printing press or letterpress printing press may demonstrate compliance with the VOC content limit or VOC composite partial vapor pressure limit specified in subsection (c)(1) for a cleaning solution used in or on the press. Subsection (e)(3) is also revised in the final-form rulemaking in response to public comments received to clarify that the VOC content of a cleaning solution shall be determined one time for each recipe of cleaning solution.

Subsection (f) identifies records required to demonstrate compliance for persons subject to § 129.67b beginning January 1, 2015. This subsection has been revised in the final-form rulemaking in response to comments received during the public comment period. Subsection (f) requires the owner and operator to maintain records sufficient to demonstrate compliance with § 129.67b. The records may include purchase, use, production and other records. The recordkeeping requirements in the final-form rulemaking correspond to applicability thresholds and substantive requirements of this section. Specifically, subsection (f)(1) requires a person using an add-on air pollution control device to maintain records sufficient to demonstrate compliance with subsection (e), which contains the compliance and monitoring requirements for add-on air pollution control devices. These records include the temperature reading of the add-on air pollution control device, the maintenance performed on the add-on air pollution control device and monitoring equipment, including the date and type of maintenance, and the catalyst activity test performed, if applicable. Subsection (f)(2) requires persons subject to the applicability requirements of subsection (a)(1)(i)—(iv) to maintain records of cleaning solutions and fountain solutions used at the facility.

Subsection (f)(3) requires owners and operators claiming an exemption from a VOC control provision of this section based on potential or actual VOC emissions to keep records that demonstrate to the Department that the press or facility is exempt. This includes owners and operators with actual VOC emissions below the threshold established in § 129.67b(a)(1)(v). Subsection (f)(4) allows the owner or operator to group materials into classes using the highest VOC content in any material in a class to represent that class of material. The Board deleted the express reference to the specific parameters of each ink, coating, thinner and component from these requirements to allow greater flexibility in developing the records.

Subsection (g) establishes reporting requirements beginning January 1, 2015. This subsection applies to persons subject to § 129.67b. Subsection (g)(1) requires that records be maintained for 2 years unless a longer period is required under by a plan approval or operating permit issued under Chapter 127. The records shall be submitted to the Department in an acceptable format upon receipt of a written request. Subsection (g)(2) specifies that the owner or operator of an offset lithographic printing press or letterpress printing press required to demonstrate overall control efficiency in accordance with subsection (d) shall submit reports to the Department in accordance with Chapter 139.

Subsection (h) specifies sampling and testing methods. This subsection has been expanded in the final-form rulemaking and is consistent, except for one difference, with § 129.67a(f). The difference is that there is not a requirement for capture efficiency testing for the litho-

graphic and letterpress printing presses due to the option to use the retention factors in subsection (l)(2)(i), which assume 100% capture by the press dryer if constant negative pressure into the dryer is demonstrated.

Subsection (i) establishes work practice requirements for cleaning activities. This subsection requires the owner and operator of an offset lithographic printing press or letterpress printing press subject to subsection (a)(1)(i), (ii), (iii) or (iv) to comply with specified work practice standards for cleaning activities at the facility. Subsection (i) does not apply to the owner and operator of a press with emissions below the applicability threshold in subsection (a)(1)(v). Subsection (i)(1) specifies the work practices. Subsection (i)(2) and (3) specifies the cleaning activities to which the work practices apply and do not apply. Subsection (i) is more stringent than what is recommended in the CTG. The CTG recommends that the work practices for cleaning materials apply to parts washers or cold cleaners used for cleaning press parts. In this Commonwealth, however, the use of parts washers and cold cleaners is regulated under § 129.63. The requirements of § 129.63 are more stringent than the recommendation in the CTG, but must be maintained to satisfy the anti-backsliding provisions of sections 110 and 193 of the CAA.

Subsection (j) sets forth the procedure for determining the composite partial vapor pressure of organic compounds in cleaning solutions. Subsection (j)(1) addresses quantifying the amount of each compound in the blend using gas chromatographic analysis, and is amended in the final-form rulemaking to allow flexibility in choice of ASTM method. Subsection (j)(2) provides the equation for calculating composite partial vapor pressure.

Subsection (k) lists acceptable methods for determining vapor pressure of each single component compound in cleaning solutions. This subsection is amended in the final-form rulemaking to allow flexibility in choice of ASTM method.

Subsection (l) is new in the final-form rulemaking. It establishes retention factors and capture efficiency factors for calculating the amount of VOCs retained in the printed web substrate or the shop towels or captured by the press dryer for control by the add-on air pollution control device for specified offset lithographic printing and letterpress printing processes.

§ 129.77. Control of emissions from the use or application of adhesives, sealants, primers and solvents

The final-form rulemaking amends § 129.77(k)(2) to clarify that § 129.77 does not apply to the use or application of adhesives, sealants, adhesive primers and sealant primers that are subject to other regulations in Chapter 129 or Chapter 130 (relating to standards for products). There are no changes to this section from the proposed rulemaking.

§ 130.703. Exemptions and exceptions

The final-form rulemaking amends § 130.703(a)(2) to clarify that § 130.703 does not apply to the use or application of adhesives, sealants, adhesive primers and sealant primers that are subject to other regulations in Chapter 129 or Chapter 130. There are no changes to this section from the proposed rulemaking.

F. *Summary of Major Comments and Responses*

The Board approved publication of the proposed rulemaking at its meeting of September 20, 2011. The proposed rulemaking was published at 42 Pa.B. 779 (February 11, 2012). The public comment period opened February 11, 2012. Three public hearings were held on March 14, 15 and 16, 2012, in Pittsburgh, Norristown and Harrisburg, respectively. The public comment period closed on April 16, 2012, for a 66-day public comment period. Public comments were received from four commentators. The comments received on the proposed rulemaking are summarized in this section and are addressed in a Comment and Response Document which is available from the Department. The Independent Regulatory Review Commission (IRRC) also provided comments.

General support of proposed rulemaking

Several commentators supported the Department overall in its use of the CTGs.

Effect of printing industry emissions on the environment

One commentator asserted that an overall negative effect of small printers to the environment did not seem to be clearly shown. The Board disagrees. Each CTG provides emission estimates and impacts of the emissions from the covered printing industry. Each CTG also reflects the EPA's listing of flexible packaging printing materials, lithographic printing materials and letterpress printing materials on its CAA section 183(e) list of categories of products that account for at least 80% of the VOC emissions from consumer and commercial products in ozone nonattainment areas. The EPA states on page 3 of the Flexible Package Printing CTG: "In section 183(e), Congress directed EPA to assist States in achieving VOC emission reductions from consumer and commercial products. These products individually may result in relatively small amounts of VOC emissions, but, in the aggregate, they contribute significantly to ozone formation in nonattainment areas."

Definitions

A commentator wrote that several definitions need to be revised or added to provide clarity and consistency with the CTG. "Batch" should be revised to reflect that it applies to both fountain solutions and "cleaning solution" and definitions should be added for "cleaning solution," "heatset" and "non-heatset." IRRC suggested the clarity of the rulemaking would be improved by defining "heatset." In response, the Board revised the definition of "batch," which already applies to "fountain solution," to also apply to "cleaning solution." The Board added a definition of "cleaning solution" using wording similar to that provided by the commentator. The Board added definitions for "heatset" and "non-heatset" using some of the commentator's suggested language and also using information available in the CTG. The definition of "non-heatset" includes the polymerization curing processes of infrared drying, ultraviolet curing and electron beam curing.

One commentator and IRRC recommended that "thin metal" be deleted from the definitions of "lithographic plate" and "lithographic printing" because plates can also be made from paper or plastic. IRRC further noted that this language also appears in the definition of "offset lithographic printing." The Board agrees and deleted "thin metal" from the definitions of "lithographic plate," "lithographic printing" and "offset lithographic printing."

One commentator and IRRC requested that the acronyms MSDS and CPDS be explained or defined for clarity in the subsection in which they first appear, namely § 129.67b(e)(2)(ii). The commentator suggested wording. The Board agrees that the acronyms MSDS and CPDS should be defined. Both terms are already defined in § 121.1, as they are used in other portions of Chapters 121—145. Since both terms are already defined in

§ 121.1, the Board did not move the definitions into § 129.67b(e)(2)(ii). Instead, the Board revised the definition of "CPDS—Certified Product Data Sheet" in § 121.1 to make it applicable to § 129.67b and left the generally-applicable definition of "MSDS—Material Safety Data Sheet" as is.

IRRC commented that under § 121.1, the proposed definition of "batch" begins with the phrase "For purposes of § 129.67b...", the proposed definition of "first installation date" begins with the phrase "For purposes of § 129.67a... and 129.67b..." and the proposed definition of "varnish" begins with the phrase "For purposes of § 129.67b...." Since these definitions are specific to the sections referenced in each definition, IRRC suggested that the definitions be moved to those particular sections. The Board agrees with the suggestion to move the definition of "first installation date." The Board moved the definition into Table 1 in § 129.67a and § 129.67b(d)(1), where the term is used in § 129.67b(d)(1)(i) and the definition fits comfortably in § 129.67b(d)(1)(ii). The Board considered the recommendation to move the definition of "batch" to § 129.67b, but has left it in § 121.1, along with the rest of the definitions for this final-form rulemaking. The term's definition is lengthy and does not fit well into § 129.67b, where the term appears in subsection (e)(2) and (3). The wording "For purposes of § 129.67b" is necessary in § 121.1 because "batch" appears in unrelated definitions in § 121.1 and also in unrelated § 129.63 and §§ 123.22 and 129.17 (relating to combustion units; and Kraft pulp mills). Similarly, the Board did not delete "varnish" in § 121.1, as its definition also does not fit well into § 129.67b, where the term appears in subsections (a), (d), (f), (h) and (l). Further, "varnish" is used in the definition of "non-heatset" in § 121.1. The wording "For purposes of § 129.67b" is necessary in § 121.1 because "varnish" also appears in unrelated § 129.102 (relating to emission standards) and in three unrelated sections in Chapter 130, Subchapter C (relating to architectural and industrial maintenance coatings).

IRRC commented that the last sentence of the definition of "first installation date" in § 121.1 is substantive and should be moved to the appropriate section or sections of the final-form rulemaking. The Board agrees and moved the definition of "first installation date" into Table 1 of § 129.67a and § 129.67b(d)(1)(ii).

Applicability

Two commentators wrote that conservative material use estimates should be followed that would allow facilities to determine applicability by tracking material use volumes rather than completing complex and time-consuming calculations. The Board disagrees. The Department consulted with the EPA on this matter and has decided not to create a separate applicability criterion based on material use limits since the lower applicability limits are based on actual emissions of 450 pounds per month and 2.7 tons per 12-month rolling total. The Department plans to include material use information in a Frequently Asked Questions document or Fact Sheet to assist owners and operators in making a preliminary determination of whether they might be subject to the regulation. In addition, the Department has added flexibility by removing the "per day" applicability threshold and by allowing actual emissions to be estimated by using the highest VOC content in any material in a class to represent that class of materials. Furthermore, the Department and staff of the Environmental Management Assistance Program (EMAP) are willing to work with the GAA on its toolkit for GAA members to provide assistance with the emission calculations when necessary. EMAP fulfills the technical assistance part of the small business compliance assistance program required under the CAA by providing free and confidential environmental regulation compliance assistance to small businesses in this Commonwealth on a nondiscriminatory basis. EMAP, associated with the Pennsylvania Small Business Development Centers, is a partnership funded, in part, through the Department and the Department of Community and Economic Development, the United States Small Business Administration and participating colleges and universities.

One commentator noted that the material use approach makes it much easier for facilities to determine their applicability and was approved by the EPA in its *Potential to Emit (PTE) Guidance for Specific Source Categories* released on April 14, 1998. The commentator suggested specific numeric edits and language to revise the section in accordance with the comment. The Board does not agree that it is technically advisable to use PTE guidance to determine actual emissions. The Board believes that, since the EPA did not reference the PTE guidance document in the LLP CTG when it referenced other documents, the EPA did not intend the PTE guidance to be used to determine applicability for the offset lithographic printing and letterpress printing source categories. Furthermore, the levels suggested by the commentator seem not to take into account the "50% of the major source threshold margin of safety factor" suggested by the PTE guidance document. Therefore, the Board is not including material use thresholds as an applicability criterion in the final-form rulemaking.

A commentator stated that proposed § 129.67b(a)(1)(i) is not consistent with the LLP CTG because in the CTG the exemption threshold of a potential to emit, prior to controls, of at least 25 tpy of VOC emissions applies only to the emissions of VOC from petroleum ink oil and not to total VOC emissions from the press dryer as was proposed. IRRC acknowledged comments regarding certain sections of the rulemaking being inconsistent with the CTG. IRRC referenced proposed § 129.67b(a)(1)(i)—(iii) and asked the Board to explain the need to deviate from the CTG.

The Board disagrees that the final-form rulemaking should be revised to account for only some, but not all, of the potential VOC emissions from the dryers, prior to controls, of heatset web offset lithographic printing and letterpress printing operations in determining applicability. Even though the LLP CTG recommends basing the "potential to emit" applicability threshold on potential emissions from the dryer, prior to controls, of VOCs from ink oils, basing the threshold on potential emissions, prior to controls, of all VOC emissions from the dryer is also reasonable. The Department had detailed discussions with EPA Region 3 concerning this issue. The Department understands that small to no amounts of coatings and adhesives go through lithographic printing presses and letterpress printing presses; therefore, the majority of potential VOC emissions will be from ink oils and the applicability will effectively be only to potential VOC emissions from heatset inks. Implementation of the add-on air pollution control measure requirements will continue to be cost-effective even if the small amounts of potential VOC emissions from coatings and adhesives are included. Several nearby states similarly base this potential emissions applicability threshold on the VOC emissions from more than just inks. For instance, New York's regulation is based on the VOC emissions from inks, coatings and adhesives used on the press (see 6 NYCRR § 234.3(b)(1)); Maryland's regulation is based on all VOC

emissions from the press (see COMAR 26.11.19.11(e)); and Connecticut's regulation is based on all VOC emissions from the dryers prior to control (see Conn. Agencies Regs. § 22a-174-20(gg)(4)). The EPA provides in the CTGs that the recommendations are guidance and that states may promulgate applicability criteria that differ from those recommended in the CTG. After considering this comment and the other information described in this response, the Board determined that changes to this provision are not being made in the final-form rulemaking.

A commentator suggested that the applicability threshold expressed in proposed § 129.67b(a)(1)(ii) and (iii) as 15 pounds per day or 2.7 tpy should be revised to reflect a single annual limit of 3 tpy over a 12-month rolling period, which the EPA has defined as one of several options for an acceptable applicability threshold. IRRC acknowledged comments regarding certain sections of the rulemaking being inconsistent with the CTG, referencing proposed §§ 129.67a(a)(1)(ii) and 129.67b(a)(1)(i)—(iii), and asked the Board to explain the need to deviate from the CTG.

The Board considered the comments but disagrees with using only an annual limit for the applicability threshold for actual VOC emissions, and with that limit being 3 tpy over a 12-month rolling period. The Board established the applicability threshold for actual VOC emissions in the final-form rulemaking as a per-month or as a per-12-month rolling period threshold. The Board deleted the proposed 15 pounds per day threshold. The monthly threshold provides the basis for evaluating the 12-month rolling period threshold. With regard to whether the 12-month rolling period threshold should be 3 tpy, the Board has historically used 2.7 tpy or 2.7 tons per 12-month rolling period as the equivalent to 15 pounds per day for surface coating and other VOC emission-control regulations. See, for instance, §§ 129.52 and 129.52a (relating to surface coating processes; and control of VOC emissions from large appliance and metal furniture surface coating processes) and § 129.52b. The Board derives 2.7 tpy as follows:

15 pounds per day x 365 days per year = 5,475 pounds per year

5,475 pounds per year/2,000 pounds per ton = 2.7375 tpy

The Board keeps one decimal place for more accuracy; the EPA rounds 2.7 to 3.

Using 3 tpy in the printing rulemakings would be inconsistent with other air quality regulations in Subpart C, Article III. The EPA provides in the CTGs that the recommendations are guidance and states may promulgate applicability criteria that differ from those recommended in the CTG.

One commentator stated that the "per day" applicability threshold imposes daily recordkeeping, which is not acceptable or technically feasible, given the nature of the printing industry and how it uses inks, fountain solutions, coatings and other input materials. The Board, in consideration of this comment and the recordkeeping comments received from other commentators, replaced the proposed "per day" applicability threshold with a 450 pounds per month applicability threshold in the final-form rulemaking. The monthly applicability threshold allows the owners or operators of all flexible packaging, lithographic printing and letterpress printing facilities to keep monthly records using purchase, use or production records.

A monthly applicability threshold for actual VOC emissions is consistent with the CTGs. The LLP CTG states on page 4: "In developing their RACT rules, State and local agencies should consider carefully the facts and circumstances of the affected sources in their States. As noted above, States can adopt the above recommended 15 lb/day actual emissions of VOC applicability criterion before consideration of controls, or an equivalent applicability level expressed on a monthly basis (e.g., 450 lb/month) or 12-month rolling basis (e.g., 3 tons per 12-month rolling period), or they can develop other applicability criteria that they determine are appropriate considering the facts and circumstances of the sources in their particular nonattainment areas." Page 3 of the FPP CTG has a similar sentence. Therefore, considering the number of small businesses that would be required to keep daily records to demonstrate applicability only, the Board decided instead to use the alternative monthly basis applicability level. In addition, the EPA provides in the CTGs that the recommendations are guidance and states may promulgate applicability criteria that differ from those recommended in the CTG. Note that for certain other VOC regulations applying to other industry sectors, the Board has found daily recordkeeping to be acceptable and technically feasible. The Board agrees that a "per day" applicability threshold imposes daily recordkeeping.

One commentator believes that the exclusion in proposed § 129.67b(a)(2) of only the VOCs from adhesives that are applied by means of the printing presses needs to be expanded to cover all adhesive application in a graphic arts operation, primarily because of the types of adhesives used. The commentator stated that adhesives are not commonly applied by the press, but for those that are, they are the same adhesives that are applied by means of other pieces of equipment in the facility. The commentator further requested that adhesives used in graphic arts operations also be excluded from the requirements of § 129.77. The commentator suggested revisions to §§ 129.67b(a)(2) and 129.77(l), saying the revisions are necessary to avoid the confusion that would be caused by requiring owners and operators of graphic arts facilities to comply with two separate regulations governing VOC emissions—the lithographic and letterpress regulation or the flexographic printing regulation and the miscellaneous industrial adhesives regulation.

The Board disagrees that all VOC emissions from adhesive application facility-wide should be excluded from regulation under both §§ 129.67b and 129.77. Further, the commentator is mistaken in asserting that the proposed rulemaking would have excluded VOC emissions from adhesives used or applied on or with an offset lithographic printing press or letterpress printing press from being regulated under § 129.67b. Section 129.67b(a)(2) excludes emissions of VOCs from adhesives that are not used or applied on or with the printing press from regulation under § 129.67b. Emissions of VOC from adhesives that are used or applied on or with an offset lithographic printing press or letterpress printing press are subject to regulation under § 129.67b. The Department consulted with EPA Region 3 about applicability to VOC emissions from adhesives when drafting § 129.67b(a)(2) and revising § 129.77.

The Board explains further that the meaning of "printing press" is integral to understanding these provisions, as only adhesives used or applied on or with the printing press are subject to § 129.67b. The Department crafted the definition of "printing press" in consultation with the EPA to address the situations described in the commenta-

tor's comments about how the adhesives used on the press versus the adhesives used elsewhere in the facility were to be regulated. The proposed rulemaking specifically included the following language in § 129.67b(a)(2) to direct the regulated community to other potentially applicable requirements:

> (2) VOCs from adhesives used at a facility that are not used or applied on or with an offset lithographic printing press or a letterpress printing press are not subject to this section and may be regulated under § 129.77 or Chapter 130, Subchapter D (relating to control of emissions from the use or application of adhesives, sealants, primers and solvents; and adhesives, sealants, primers and solvents).

The Board retained this wording in the final-form rulemaking, as the Board believes it is reasonable and that the regulated parties have the technical capability to implement the different regulations. The Board notes further that proposed § 129.67b(a)(2) is redesignated as final-form § 129.67b(a)(3). See the response to the next comment. Additionally, as previously explained, free and confidential assistance is available to the owners and operators of small businesses to explain how to comply with the requirements.

IRRC noted that a commentator suggested that the exemption under § 129.67b(a)(2) for VOCs from adhesives used at facilities that are not used or applied with an offset lithographic printing press or a letterpress printing press needs to be expanded to cover all adhesives applied in graphic art operations. IRRC further noted that § 129.67a(a)(3) contains a similar provision relating to flexible packaging printing presses. IRRC asked whether the Board considered expanding the exemption as suggested by the commentator. The Board responds that it considered the comments and decided not to modify the final-form rulemaking in this area, as explained in the preceding response.

One commentator indicated that the printing industry submitted comments on September 26, 2011, to EPA Region 3 requesting that a modification of the applicability requirements for § 129.77 be made that would specifically exclude adhesives used in graphic arts from the requirements of § 129.77. The Board explains that the September 26, 2011, comments to the EPA were submitted with reference to the EPA's proposed approval of the Pennsylvania SIP revision submittal to incorporate the adhesive and sealant rulemaking into the SIP. The EPA addressed the printing industry comments in its final action approving the SIP revision, stating that:

> Pennsylvania's regulation for adhesives and sealants clearly addresses the adhesives and adhesive application activities regulated. . . . Thus, we believe the Pennsylvania regulations are clear that the adhesives used in printing operations were considered and that the state intended to cover those adhesives.

The EPA approved the SIP revision at 77 FR 59090, 59091 (September 26, 2012).

Recordkeeping

Several commentators commented that they believe the daily recordkeeping requirements in the proposed rulemaking would be burdensome to printers without any benefit. The Board, in consideration of the recordkeeping comments received from these commentators, replaced the "per day" applicability threshold—which necessitated keeping daily material use records—with a 450 pounds per month applicability threshold. In addition, the Board has made several changes to streamline the recordkeeping requirements. For instance, the Board added language to the recordkeeping subsections that states: Records maintained for compliance demonstrations may include purchase, use, production and other records. Further, the Board deleted the requirement commented on, which specified records of particular parameters of each ink used. The Board added flexibility by including a paragraph that states: An owner or operator claiming exemption from a VOC control provision of this section based on potential or actual VOC emissions, as applicable, shall maintain records that demonstrate to the Department that the press or facility is exempt. The final-form rulemaking does not prescribe the records to be kept, but allows the owner or operator of the facility to calculate VOC emissions by whatever means are appropriate to demonstrate that the amount of emissions is below the level of actual or potential VOC emissions necessary to be exempted from the control provisions of the regulation, before consideration of add-on controls. In addition, the Board added flexibility by allowing VOC content records to be based upon the highest VOC content in any material in a class rather than on each individual material in the class.

One commentator suggested that the minimum recordkeeping requirements as set out under § 129.67a(e)(1) should be narrowed to only apply to companies using a "compliant ink" approach to comply with the rulemaking (under § 129.67a(c)(1), (2) or possibly (4)). The Board agrees. The Board revised the recordkeeping requirements to correspond to the per month-based applicability threshold and narrowed some of the parameters which were required in the proposed recordkeeping section. The recordkeeping requirements under final-form § 129.67a(e)(1) for an owner or operator subject to § 129.67a(a)(1)(i) using an add-on air pollution control device are specific to the add-on air pollution control device and not to the inks used. Final-form § 129.67a(e)(2) requires the owner or operator subject to § 129.67a(a)(1)(i) that is not using an add-on air pollution control device (in other words, using the "compliant ink" approach) to maintain records of the as applied VOC content of inks, coatings and adhesives sufficient to demonstrate compliance with the limitations under § 129.67a(c)(1) or (2). Proposed § 129.67a(c)(4), referenced in the comment, has been deleted in this final-form rulemaking because it was redundant. See provisions added to § 129.67a(e) and see the preceding response and other recordkeeping-related responses.

A commentator noted that the compliance demonstration for sites choosing to meet the requirements of the final-form rulemaking through the use of an add-on control device is to meet a minimum overall control efficiency. The commentator stated that the compliance demonstration under this option is completely independent of the composition or quantity of the ink being used. Since the material specific records are not needed to demonstrate compliance with the rulemaking, the commentator asserted that there is not an environmental or compliance benefit to maintain them. The commentator suggested the rulemaking set separate recordkeeping requirements specifically addressing appropriate records for the control device for sites meeting the rulemaking through § 129.67a(c)(3). The Board agrees and the records required of an owner or operator subject to § 129.67a(a)(1)(i) using an add-on air pollution control device in accordance with § 129.67a(c)(3) are in final-form § 129.67a(e)(1) and are specific to the add-on air pollution control device. Similar revisions were made to § 129.67b(f). See §§ 129.67a(e) and 129.67b(f) and the

two preceding responses in this preamble. In addition, the Board revised the final-form rulemaking to move the recordkeeping requirements relating to control devices from the compliance and monitoring portions of the final-form rulemaking (§§ 129.67a(d) and 129.67b(e)) to the recordkeeping sections (§§ 129.67a(e) and 129.67b(f)).

A commentator wrote that proposed § 129.67b(f) requires daily recordkeeping for a variety of parameters and that this entire subsection should be deleted and replaced with the recordkeeping requirements that are necessary to demonstrate compliance with the actual limits in the rulemaking (documentation of the composition of fountain solutions and cleaning solvents). The commentator wrote that recordkeeping of the composition of materials such as ink, varnish or coating, or the quantities of materials consumed are not relevant to demonstrating compliance. The commentator wrote that this type of recordkeeping is associated with determining VOC emissions and is contained in all plan approvals and operating permits issued to printing operations.

The Board disagrees that § 129.67b(f) should be deleted. The Board agrees that the recordkeeping of fountain solution and cleaning solvent composition requirements is necessary to demonstrate compliance with the requirements under § 129.67b(c)(1) and (2) and for determining applicability under § 129.67b(a). The Board made several changes to streamline the recordkeeping requirements. For instance, the Board added language to the recordkeeping subsections that states: Records maintained for compliance demonstrations may include purchase, use, production and other records. The Board revised § 129.67b(f) to set forth recordkeeping requirements under final-form § 129.67b(f)(1) specific to the add-on air pollution control device for those owners or operators subject to § 129.67b(a)(1)(i) and further revised § 129.67b(f) to specify under final-form § 129.67b(f)(2) the cleaning solution and fountain solution records required. The Board also revised § 129.67b(f) to specify under final-form § 129.67b(f)(3) that "An owner or operator claiming exemption from a VOC control provision of this section based on potential or actual VOC emissions, as applicable, shall maintain records that demonstrate to the Department that the press or facility is exempt." In addition, the Board added flexibility to final-form § 129.67b(f) by allowing an owner or operator to group materials into classes using the highest VOC content in any material in a class to represent that class of material, rather than requiring the actual VOC content of each individual material in the class be used for records. See the preceding responses regarding daily records and the following response.

A commentator wrote that, in many instances, daily recordkeeping is in direct conflict with the recordkeeping requirements that are included in plan approvals and operating permits issued to printing operations, and that the most common recordkeeping requirements are monthly. In response, the Board recognizes the commentator's concern. The Board revised the recordkeeping requirements in the final-form rulemaking and provided additional flexibility, as described in several previous responses.

A commentator wrote that, since the applicability threshold for permitting presses is 2.7 tpy, which is equivalent to the proposed threshold for this regulation, there is no reason to deviate from the current approach which is to allow monthly recordkeeping of input materials and to allow for the grouping of these materials into classes using the highest VOC content in any material in that class to represent that class of material. The commentator suggested language to revise the section. The Board responds that the proposed rulemaking had an applicability threshold of 15 pounds per day or 2.7 tons per 12-month rolling basis of VOC emissions. As discussed in previous responses, the "per day" applicability threshold would have required daily recordkeeping. However, in consideration of the recordkeeping comments received from commentators, the Board replaced the "per day" applicability threshold with a 450 pounds per month applicability threshold. The Board revised the recordkeeping requirements so as not to prescribe the records to be kept, but rather to enable the owner or operator of the facility to calculate VOC emissions by whatever means are appropriate to demonstrate that the amount of emissions is below the level of actual or potential VOC emissions necessary to be exempted from the control provisions of the regulation. Further, the Board agrees that facilities can group like materials into classes to determine applicability, as previously explained.

Emission limit options

A commentator noted that the compliance option of § 129.67a(c)(4) would appear to provide an equivalency approach where a site could meet the RACT rule by means of an averaging approach which would allow for use of noncomplying materials using control efficiencies below those specified under § 129.67a(c)(3). The commentator questioned whether it would meet the intent of RACT as suggested in the CTG. IRRC acknowledged comments regarding certain sections of the proposed rulemaking being inconsistent with the CTG. IRRC referenced proposed § 129.67a(c)(3) and (4) and asked the Board to explain the need to deviate from the CTG. In response, the Board explains that in considering this comment, the Board determined that proposed § 129.67a(c)(4) was redundant; therefore, the Board deleted this paragraph in the final-form rulemaking.

A commentator stated that proposed § 129.67b(c)(1)(i)(B) sets a VOC content limit of 30% VOC by weight. The commentator wrote that, while this limit was included in the 1993 draft CTG for offset lithography, it is superseded by the 70% VOC by weight content limit issued in the 2006 LLP CTG. The commentator submitted an excerpt from the CTG as support for its request that the proposed limit of 30% be revised to 70%. IRRC acknowledged this comment and asked the Board to explain the need to deviate from the CTG. IRRC also stated that this section is more stringent than the EPA requirements, and asked the Board to explain the need for the proposed language.

In response, the Board refers the commentators to the preamble to the proposed rulemaking, which explained that the Board proposed the 30% VOC by weight content limit for cleaning materials in part because a 30% VOC by weight content limit has been implemented in the Bureau of Air Quality-General Plan Approval/General Permit (BAQ-GPA/GP) -7 and BAQ-GPA/GP-10, which have been approved for use by permitted facilities since July 2, 1998, and July 3, 1999, respectively. These are the Department's general permits for sheet-fed offset lithographic printing presses and for non-heatset web offset lithographic printing presses, respectively. The limit of 30% VOC by weight content limit for cleaning materials is considered Best Available Technology (BAT) in the general permits; this limit has also been used in plan approvals and State-only operating permits. The Board specifically sought comment on this proposed provision in the preamble. In considering comments received on the proposed 30% VOC by weight content limit for cleaning

materials, the Board evaluated different options, including options to retain the 30% VOC by weight content limit while allowing flexibility, but the Board concluded that the most reasonable solution, on balance, is that suggested by the commentators. Consequently, the Board selected the CTG limit of 70% VOC by weight content limit for cleaning materials for the final-form rulemaking. Adopting the 70% VOC by weight content limit will not result in more VOC emissions from cleaning materials used at facilities subject to the final-form rulemaking than anticipated, since the emission reductions discussed in the proposed rulemaking were based on EPA calculations that used the CTG-recommended limit of 70%. Permits that already have the more stringent BAT limit of 30% VOC by weight content from cleaning materials will keep that limit to prevent backsliding. The Board notes further that the term "cleaning materials" in the proposed rulemaking has been revised to "cleaning solutions" in the final-form rulemaking.

A commentator noted that proposed § 129.67b(c)(1)(ii) allows a 55-gallon cleaning material allowance for those materials that do not meet the VOC limits in § 129.67b(c)(1)(i). The commentator believes that due to the nature of the equipment being cleaned, 55 gallons per year is not adequate to allow a facility to achieve the amount of cleaning required to be done with cleaning materials that do not meet the limit, and suggests an exclusion of 110 gallons per year as suggested in the LLP CTG. IRRC acknowledged this comment and asked the Board to explain the need to deviate from the CTG. IRRC also stated that this section is more stringent than EPA requirements, and asked the Board to explain the need for the proposed language.

In response, the Board refers the commentators to the preamble to the proposed rulemaking in which the Board explained that it proposed the 55-gallon limit because this limit has been implemented in BAQ-GPA/GP-7 and BAQ-GPA/GP-10, which have been approved for use by facilities since July 2, 1998, and July 3, 1999, respectively. These are the Department's general permits for sheet-fed offset lithographic printing presses and for non-heatset web offset lithographic printing presses. The limit of 55 gallons for noncompliant VOC solvent is considered BAT in the general permits; this limit has also been used in plan approvals and State-only operating permits. The Board specifically sought comment on this proposed provision in the preamble. In considering the comments received on the 55-gallon limit, the Board evaluated different options, including options to retain the 55-gallon limit while allowing flexibility, but the Board concluded that the most reasonable solution, on balance, is that suggested by the commentators. Consequently, the Board selected the CTG limit of 110 gallons of noncompliant VOC solvent for the final-form rulemaking. Adopting the 110-gallon limit will not result in more VOC emissions than anticipated from cleaning activities performed by facilities subject to the final-form rulemaking, since the emission reductions discussed in the proposed rulemaking were based on EPA calculations that used the CTG limit of noncompliant VOC solvent usage of 110 gallons. Permits that already have the more stringent BAT limit of 55 gallons will keep that limit to prevent backsliding.

A commentator wrote that proposed § 129.67b(c)(2)(i) was very confusing as written because it seemed to be setting a single limit for alcohol content in all fountain solutions and the limit was the same one that is specified in § 129.67b(c)(2)(i)(A). The same comment applies to § 129.67b(c)(2)(ii) and (2)(ii)(A). The Board agrees that § 129.67b(c)(2)(i) and (2)(i)(A) are duplicative, as are § 129.67b(c)(2)(ii) and (2)(ii)(A). The Board revised the language in the final-form rulemaking to delete the repetitive language.

A commentator wrote that proposed § 129.67b(c)(2)(i)(A) is not consistent with § 129.67b(c)(2)(i)(B) or (C). The commentator suggested that "reducing the" in § 129.67b(c)(2)(i)(A) be deleted and replaced with "using" and added that the same comment applies for § 129.67b(c)(2)(ii)(A). The Board agrees with this approach. The Board revised the provision in the final-form rulemaking to delete "reducing" and to base the provision on use.

A commentator wrote that proposed § 129.67b(c)(2)(i)—(iii) should express the fountain solution content limit as "VOC content" and not as a specific material such as "alcohol" or "alcohol substitute," as some printing operations are still using a combination of alcohol and alcohol substitutes in their fountain solution. Using "VOC content" will allow for this situation. The commentator suggested language to revise the section in accordance with the comment. The Board agrees that using "VOC content" in place of "alcohol" or "alcohol substitute" is an acceptable change and replaced the "alcohol" or "alcohol substitute" limits with VOC content limits.

A commentator wrote that proposed §§ 129.67b(d)(1), (2) and (2)(iii) are confusing because of the exclusions contained in each, and that the applicability language of § 129.67b(d)(1) duplicates that of § 129.67b(a)(1)(i). The commentator suggested language to revise the section in accordance with the comment, and suggested that proposed § 129.67b(d)(3) and (4) be renumbered to reflect these changes. In response, the Board revised § 129.67b(d)(1)—(4) to delete the duplicative language in subsection (d)(1), changed the order of the remaining paragraphs to clarify what is excluded and renumbered paragraphs as necessary.

Control options

A commentator suggested that proposed § 129.67b(d)(4)(i) be revised by deleting "overall" and replacing it with "destruction" so that it is consistent with the LLP CTG and does not introduce an unnecessary compliance demonstration for capture testing. The term "overall" is used to describe a requirement that is the product of both the capture of VOC emissions and their subsequent destruction by the use of a capture/control system. IRRC acknowledged comments regarding certain sections of the rulemaking being inconsistent with the CTG. IRRC referenced proposed § 129.67b(d)(4)(i) and asked the Board to explain the need to deviate from the CTG.

The Board agrees that the description of "overall" efficiency refers to the "capture" efficiency multiplied by the "destruction" efficiency. The final-form rulemaking means to limit the control (destruction) efficiency of any type of add-on air pollution control device including a thermal oxidizer or other approved device. The Board revised final-form § 129.67b(d)(1)(i) to replace "overall" with "control." The Board believes this change is warranted due to the following other changes in the final-form rulemaking. Section 129.67b(d)(1) requires that the heatset dryer pressure shall be maintained lower than the press room area pressure so that air flows into the heatset dryer at all times when the press is operating. This is operating at negative pressure. Since the unit is required to operate at negative pressure, the owner or operator of the facility may use the capture efficiency factor of 100% added under final-form § 129.67b(l)(2)(i) in the calculation of overall efficiency for control (destruction) of volatilized ink oils from oil-based heatset paste

inks and varnishes. The use of 100% is equivalent to 1 (that is, 100/100), which would mean that control (destruction) efficiency and overall efficiency would be equal.

The commentator noted that the EPA stated in both the LLP CTG and the Technical Support Document for Title V Permitting of Printing Operations that capture testing is not required and that only a one-time demonstration is necessary to demonstrate that the air flow is into the dryer. In response, the Board explains that it deleted the capture efficiency testing requirement in § 129.67b(h) and added § 129.67b(e)(1)(iv), which states: The negative dryer pressure shall be established during the initial test using an air flow direction indicator, such as a smoke stick or aluminum ribbons, or a differential pressure gauge. Capture efficiency retesting and continuous dryer air flow monitoring are not required.

The commentator suggested that proposed § 129.67b(d)(4)(ii) be revised to reflect that in addition to presses with a low inlet concentration, a press with a combination dryer/oxidizer unit does not have an inlet that meets the requirement for testing. The commentator suggested language to revise the section. IRRC acknowledged this comment and requested that if the concern can be addressed while meeting the required EPA standards, the Board should do so. The Board agrees and revised the final-form rulemaking to allow the owner or operator of a press with a combination dryer and oxidizer, or other control equipment configuration without an identifiable, measurable inlet, to apply for an alternative limit. The Board further notes that proposed § 129.67b(d)(4)(ii) is redesignated as § 129.67b(d)(1)(iii) in the final-form rulemaking.

The commentator suggested that proposed § 129.67b(d)(4)(ii) be revised to eliminate the requirement to seek an alternative limit in writing since that issue would be addressed at the time of permitting a press, thus making the requirement redundant as it imposes an unnecessary administrative burden. The commentator suggested language to revise the section. IRRC acknowledged this comment and requested that if the concern can be addressed while meeting the required EPA standards, the Board should do so.

The Board disagrees that the alternative limit issue will always be resolved at the time of permitting a press and that the proposed regulatory requirement is therefore redundant and imposes an unnecessary administrative burden. The January 1, 2015, compliance date for existing permitted presses subject to the final-form rulemaking will be after the issuance of the original plan approval or permit and does not supersede existing plan approval or permit requirements unless the plan approval or permit requirements are less stringent than the requirements in the final-form rulemaking. For a new press subject to the final-form rulemaking and installed after final-form publication of the requirements in the *Pennsylvania Bulletin* that uses a combination dryer and oxidizer, the alternative limit may be requested at the time of plan approval, but BAT may require a more stringent limit than the default limit in the final-form rulemaking. Whether an alternative limit is obtained through a plan approval, permit or other written approval from the Department, as appropriate, it is important from an environmental standpoint that the Department consider and approve (or disapprove) the request in writing, as an alternative limit could be less stringent than the 90% or 95% required efficiency. The final-form rulemaking continues to require a written request and specifies the information required for the Department to make the appropriate determination. The Board further notes that proposed § 129.67b(d)(4)(ii) is revised as set forth in § 129.67b(d)(1)(iii) and (iv) in the final-form rulemaking.

Compliance and monitoring

A commentator wrote that proposed § 129.67b(e) contains both monitoring and recordkeeping requirements, but that the recordkeeping requirements should be removed and placed into § 129.67b(f), which is dedicated to recordkeeping. The Board agrees and moved the recordkeeping requirements to subsection (f) in the final-form rulemaking.

A commentator requests that "incinerator" in § 129.67b(e)(1)(i)(A) and (B) be deleted and replaced with "oxidizer" as "oxidizer" is a more accurate term to use when describing add-on control devices used to control emissions from printing presses. The Board agrees and replaced "incinerator" with "oxidizer" in the final-form rulemaking. Corresponding changes were made to final-form § 129.67a.

A commentator wrote that proposed § 129.67b(e)(1)(i)(A) and (B) should qualify "continuously" to indicate that the temperature is to be recorded at least every 15 minutes to be consistent with the guidance in the EPA *TSD for Title V Permitting of Printing Operations* document. IRRC acknowledged this comment and asked if the Board considered requiring gauges be checked every 15 minutes. In response, the Board revised final-form § 129.67b(e)(1) to require that the temperature be continuously monitored; the temperature reading shall be recorded at least once every 15 minutes while the oxidizer is operating. The Board made similar revisions to final-form § 129.67a(d)(1).

IRRC commented that proposed § 129.67a(d)(3)(i)(A) and (B) requires certain temperatures to be "continuously monitored and recorded daily." IRRC asked how a printing facility would "continuously" monitor a temperature gauge. IRRC noted that another commentator commented on a similar provision in § 129.67b(e), and IRRC asked if the Board considered requiring gauges to be checked every 15 minutes. In response, the Board asks the reader to see the preceding response. Note that proposed § 129.67a(d)(3)(i)(A) and (B) is redesignated as final-form § 129.67a(d)(1)(i) and (ii).

A commentator noted that proposed § 129.67b(e)(1)(i)(B) requires daily monitoring of the inlet and exhaust gas temperatures of a catalytic unit. The commentator wrote that monitoring the outlet temperature of a catalytic unit is not necessary as it provides meaningless data due to the variations in coverage on a per job or per day basis. The commentator included language from the EPA *TSD for Title V Permitting of Printing Operations* document to provide several examples of catalytic oxidizer temperature monitoring that clearly state only the inlet temperature is to be monitored. In response, the Board agrees that monitoring of only the inlet temperature should occur. The requirement to monitor outlet temperature on the catalytic unit has been deleted from final-form § 129.67a(d)(1)(i)(A) for flexible package printing and § 129.67b(e)(1)(i)(B)(I) for lithographic printing and letterpress printing.

A commentator wrote that the Department needs to provide guidance to address temperature monitoring for regenerative thermal oxidizers. Since the temperature that is measured during the compliance test becomes the minimum temperature at which the unit can operate, a provision needs to be added specifying that the temperature to be monitored must equal the lower of the

minimum operating temperature or "set point" at which the unit is required to run or the temperature that was measured during the compliance test. The Board agrees that the temperature that is measured during the compliance stack test becomes the minimum temperature at which the unit can operate; however, once compliance is demonstrated at that particular temperature, the "set point" may no longer guarantee compliance with the required VOC control efficiency. The Board revised final-form §§ 129.67a(d)(1)(i) and 129.67b(e)(1)(i)(A) to read that the "minimum combustion or operating temperature must be continuously monitored" to address this concern.

A commentator wrote that a new condition needs to be added that recognizes that temperature fluctuations can and do occur with properly operating oxidizers. The EPA recognized this situation in the *TSD for Title V Permitting of Printing Operations* document and allows for a 50°F temperature fluctuation over a 3-hour average. The Board agrees and revised the final-form rulemaking to address this concern. See final-form §§ 129.67a(d)(2) and 129.67b(e)(1)(ii).

A commentator wrote that proposed § 129.67b(e)(1)(ii)(A) should be revised to clarify that records of the oxidizer temperature must be retained rather than the hours of operation. The temperature monitoring and recording requirements of § 129.67b(e)(1)(i) provide the necessary documentation that the unit was operating. The commentator suggested language to revise the section. The Board agrees. The final-form rulemaking requires records of only the oxidizer temperature because the clarification to recording the temperature from daily as proposed to once every 15 minutes in the final-form rulemaking provides enough data about when the oxidizer is operating. See final-form § 129.67b(f)(1) for the records required.

A commentator suggested that proposed § 129.67b(e)(2)(iii)(B) be revised to indicate that the calculation only needs to be performed once for each batch of fountain solution being used, not for each use of a batch of fountain solution. The commentator wrote that since more than one fountain solution can be used on different presses in one operation, the calculation needs to be performed for each fountain solution. The commentator added that this is important as once the printing operation determines the proper mix ratio for its fountain solution, the mix ratio is not altered. The commentator suggested language to revise the section. The Board agrees with the comment and revised the final-form rulemaking to require that the calculation be performed once for each recipe of fountain solution.

A commentator and IRRC questioned the necessity of permanently installing a temperature monitoring device for the fountain solution recirculating reservoir when a hand held thermometer is sufficient to accomplish the temperature monitoring requirement. The commentator suggested language to revise the section. IRRC further noted that § 129.67a(d)(3)(i) has a similar temperature monitoring requirement. The Board agrees that it is not necessary to permanently install a temperature monitoring device for the fountain solution recirculating reservoir; therefore, the Board deleted proposed § 129.67b(e)(2)(iv)(A). The Board believes a hand-held thermometer could be used for monitoring the temperature of the fountain solution recirculating reservoir with the recording of the temperature reading being at least once per operating day. The Board further notes that proposed § 129.67b(e)(2)(iv)(B) has been revised in the final-form rulemaking to be part of § 129.67b(e)(2)(iv). The Board disagrees, however, that § 129.67a(d)(3)(i) could be modified in the same way as § 129.67b(e)(2)(iv) because § 129.67a(d)(3)(i) discusses the temperature of the control device, for which use of a hand held thermometer is not sufficient. Therefore, changes were not made to that section. The Board notes that proposed § 129.67a(d)(3)(i) has been redesignated as final-form § 129.67a(d)(1).

A commentator stated that it is not necessary to require permission to use a conductivity meter to monitor the alcohol concentration in fountain solution. This is an unnecessary and burdensome requirement that is not warranted. The commentator suggested language to revise proposed § 129.67b(e)(2)(v)(C) accordingly. The Board agrees with the comment and revised § 129.67b(e)(2)(v)(C) to delete the written request to the Department. Further, the Board notes that proposed § 129.67b(e)(2)(v)(C) is redesignated as final-form § 129.67b(e)(2)(v)(B).

A commentator stated that proposed § 129.67b(e)(3)(v)(B) should be revised to indicate that the calculation only needs to be performed once for each batch of cleaning solution being used, not for each use of a batch of cleaning solution. This is important as once the printing operation determines the proper mix ratio for its cleaning solution, the mix ratio is not altered. The commentator suggested language to revise the section in accordance with the comment. The Board agrees with the comment and revised the final-form rulemaking to require that the calculation be performed once for each recipe of cleaning solution.

Sampling and testing

A commentator wrote that proposed § 129.67b(h) needs to be revised to reflect the testing requirements necessary for a successful destruction efficiency determination for an oxidizer used to control emissions from a heatset web offset lithographic press. The nature of the emissions from a heatset web offset lithographic press is such that simply following EPA protocols will result in failure forcing either re-testing or enforcement action. The commentator wrote that the EPA has recommended in the *TSD for Title V Printing Operations* document that compliance testing of the emissions from an add-on air pollution control device should be conducted at operating conditions representative of a typical production schedule. The commentator suggested language to revise the section. The Board agrees that the proposed language for emissions testing could be clearer and revised final-form § 129.67b(h) using a portion of the suggested language. The Board did not incorporate all of the suggested language regarding stack testing of an add-on air pollution control device. Stack testing of source emissions from an add-on air pollution control device must undergo a stack test protocol review by the Department prior to conducting the stack test. Certain operating conditions, such as temperatures, duration, frequency and loading, are based on the actual source and control device to be tested and should be specified in the stack test protocol submitted to the Department for review and approval in accordance with the procedures and test methods of Chapter 139.

A commentator suggested language for proposed § 129.67b(h) which specified an acceptable time frame for stack testing relative to the compliance date. The Board agrees that the final-form rulemaking should specify the acceptable time frame for performance of the stack test and added final-form § 129.67b(h)(1)(ii).

A commentator suggested that continuous dryer air flow or pressure monitoring is not required to demon-

strate constant negative pressure into the dryer, only an initial stack test. The Board agrees. Final-form § 129.67b(d)(1) requires that negative pressure be maintained at all times the press is operating; otherwise, the owner and operator of the press cannot assume 100% capture of emissions from volatilized ink oils from oil-based heatset paste inks and varnishes into the dryer. The proposed § 129.67b(h)(2) testing requirement for dryer constant negative pressure was deleted at final and replaced with requirements in § 129.67b(e)(1)(iv) for compliance and monitoring. See the response to the second comment under "control options."

A commentator suggested revising proposed § 129.67b(j) by adding "one of" between "by" and "the" so that it is clear that any of the identified methods are acceptable. The Board agrees with the comment and revised the final-form rulemaking accordingly.

Fiscal impact

IRRC agreed with other commentators that daily recordkeeping requirements could be costly to printing facilities, many of which are small businesses. IRRC asked the Board to quantify the costs of the daily recordkeeping requirements of the proposed rulemaking and explain the need for those requirements. In response, the Board reconsidered the need for daily records and revised the proposed applicability criterion of 15 pounds per day of actual VOC emissions to the equivalent threshold of 450 pounds per month in this final-form rulemaking. The Board also added language that allows the use of "purchase, use, production and other records" to demonstrate compliance, thereby providing additional flexibility. These revisions minimize the recordkeeping costs to printing facilities. The Board, therefore, did not quantify the costs required to comply with the proposed daily recordkeeping requirements.

IRRC wrote that the Board has acknowledged the large discrepancy between the number of potentially affected printing facilities identified by a trade association compared to the number of facilities identified by the Department's Air Information Management System (AIMS). IRRC wrote that it appreciates the Board's efforts to work with the regulated community and the SBCAC to gain a better understanding of the number of printing facilities that might be affected by this final-form rulemaking. IRRC asked the Board to incorporate its finding into any new fiscal impact calculations it prepares as it develops the final-form rulemaking. IRRC noted that this should include costs associated with the VOC emissions reduction equipment and recordkeeping requirements.

In response, the Board explains that in developing this final-form rulemaking, the Department made some inquiries of small business-sized printers, including certain print shops operated by the Commonwealth, to determine the applicability of this final-form rulemaking to them. The Board did not gain a significantly different understanding of the number of printing facilities that might be affected by this final-form rulemaking. Based on the findings, the Board still believes that the majority of small business-sized printing operations, those 73% of printers in this Commonwealth who employ fewer than 20 employees that were a concern for the trade association, will not emit enough VOC emissions to meet the applicability threshold for control requirements in this final-form rulemaking. Therefore, the owners and operators of these printing operations will not have increased cost other than the minimal cost of maintaining records to demonstrate that the amount of VOC emissions from their operation is below the applicability threshold of actual or potential VOC emissions that trigger the control provisions of the regulations. The Board has, however, revised the data presented for the final-form rulemaking cost analysis from the data presented for the proposed rulemaking cost analysis. The data were revised on final based on the slight changes in amounts of annual emissions and number of potentially subject operating facilities in 2011 versus the 2009 data that were used for the proposed rulemaking. See the responses to the preceding comment and the first two responses under "miscellaneous."

Miscellaneous

A commentator noted that there are approximately 1,812 companies in this Commonwealth employing about 60,000 workers engaged in the printing industry. As reported in the 2010 Print Market Atlas, reporting 2009 data, the value of goods shipped for the industry in this Commonwealth is approximately $9.4 billion. Over 73% of printers in this Commonwealth employ fewer than 20 employees. The Board thanks the commentator for the information.

Two commentators noted that, since the majority of the printers in this Commonwealth employ 20 persons or less, the proposed rules are too complicated and burdensome with which to comply. In response, the Board explains that it revised the rulemaking from proposed to final in ways that reduce the complexity and burden. For example, the Board revised the applicability provisions in the final-form rulemaking from daily to monthly emission thresholds and made revisions to recordkeeping requirements applicable to the owners and operators of smaller printing facilities. Furthermore, the addition of the ability to use the highest VOC content in any material in a class to represent that class of material offers an option which reduces the calculation and paperwork burden for the facilities in the flexographic, lithographic or letterpress printing industry. Under the final-form rulemaking, the owners and operators of a large portion of small business-sized printing operations will only need to keep minimal records to establish that they are not subject to the remaining control or compliance portions of the final-form rulemaking and report these records to the Department if requested.

In further response to this comment, and as referred to in the last response under "fiscal impact," the Board made some inquiries of owners or operators of small business-sized printing operations with less than 20 employees—the size that the printing industry trade association references for considering a printer to be a small business—about amounts of VOC emissions. The Department evaluated the Department of Transportation's (DOT) graphic arts operation, which is staffed with 18 employees and consists of 2 sheet-fed offset lithographic presses and 4 (offset) duplicating presses, and the associated annual material throughput of inks, fountain solutions, cleaning materials and adhesives, as an example. The evaluation determined that the print shop would not meet the minimum VOC emission threshold to be subject to the material VOC content limits or control requirements included in this final-form rulemaking. The Board believes that the DOT print shop is similar in size and throughput to the majority of printers in this Commonwealth that employ 20 persons or less and that are of concern to the printing industry trade association. The Board therefore further believes that few of the smaller printing operations will be subject to the control portions of the final-form rulemaking. See responses to previous

comments in which the Board explains its revisions to proposed provisions commentators identified as burdensome.

A commentator suggested that printers should be given credit for efficiencies captured on heatset presses. The Board agrees and included the VOC emission retention factors and capture efficiency factors in final-form § 129.67b(l).

A commentator noted that the draft rulemaking did not address key emission and retention factors that are specific to the lithographic printing industry and are necessary to perform accurate emission determinations. To ensure that the proper emission and retention factors are applied for purposes of determining applicability and compliance, the appropriate factors need to be included in the revisions to the final-form rulemaking. The recommended section clarifies the methodology for estimating actual emissions in the lithographic printing industry, saving administrative time and costs for both the Department and the printing industry. The inclusion of the emission and retention factors are supported by the EPA in the CTG on pages 18—20. The commentator suggested language to revise the section. The Board agrees with the comment and included the VOC emission retention factors and capture efficiency factors in final-form § 129.67b(l).

G. *Benefits, Costs and Compliance*

Benefits

Implementation of the VOC emission control measures in the final-form rulemaking for flexible package printing press, offset lithographic printing press and letterpress printing press sources will benefit the health and welfare of the approximately 12 million residents and the numerous animals, crops, vegetation and natural areas of this Commonwealth by reducing emissions of VOCs, which are precursors to the formation of ground-level ozone air pollution. Exposure to ground-level ozone is a serious human and animal health and welfare threat, causing respiratory illnesses and decreased lung function, agricultural crop loss, visible foliar injury to sensitive plant species, and damage to forests, ecosystems and infrastructure.

This final-form rulemaking is designed to adopt the standards and recommendations in the 2006 CTGs for flexible package printing and for offset lithographic printing and letterpress printing to meet the requirements of sections 172(c)(1), 182(b)(2) and 184(b)(1)(B) of the CAA. The final-form rulemaking will apply the CTGs' standards and recommendations across this Commonwealth, as required under section 184(b)(1)(B) of the CAA. The measures in the final-form rulemaking are reasonably necessary to attain and maintain the health-and welfare-based 8-hour ozone NAAQS in this Commonwealth.

The Statewide implementation of the final-form rulemaking control measures will assist the Department in reducing VOC emissions from flexible packaging printing presses, offset lithographic printing presses and letterpress printing presses locally and reducing the resultant local formation of ground-level ozone and transport of VOC emissions and ground-level ozone to downwind states, and will facilitate implementation and enforcement of the final-form rulemaking within this Commonwealth.

The GAA has identified approximately 1,800 printing facilities in this Commonwealth as potentially subject to this final-form rulemaking, including 114 flexographic and gravure printing and 1,758 lithographic and letterpress printing facilities. However, the Department believes that these numbers are an overestimation because they appear to double-count facilities that offer multiple types of printing services. Furthermore, due to the applicability thresholds in the final-form rulemaking, not all of these printing facilities will be subject to the VOC content limits, control provisions or work practice standards for cleaning activities of the final-form rulemaking. The Department used these GAA-provided numbers and certain assumptions provided by the EPA in the CTGs for these source categories to estimate the worst-case scenario of numbers of facilities subject to the final-form rulemaking and the associated emission reductions and costs.

The Department estimates that of the 114 flexographic and gravure printing facilities, there may be as many as 52 flexible packaging printing facilities subject to the final-form rulemaking at the equal to or greater than 450 pounds per month or 2.7 tons per 12-month rolling period threshold of actual VOC emissions and required to implement recordkeeping and reporting requirements and work practice standards for cleaning activities. Thirteen of these 52 facilities could also be subject at the threshold of potential VOC emissions equal to or greater than 25 tpy, before consideration of add-on controls, from the dryer of an individual press, thereby requiring VOC emission limitations or add-on air pollution control devices and implementation of recordkeeping and reporting requirements and work practice standards for cleaning activities. The remaining 62 facilities, namely those with actual VOC emissions below the 450 pounds per month or 2.7 tons per 12-month rolling period threshold, would be subject only to the recordkeeping requirements and, if requested by the Department, reporting requirements of the final-form rulemaking.

The Department estimates that as many as 387 of the 1,758 offset lithographic printing and letterpress printing facilities may be subject to the final-form rulemaking at the equal to or greater than 450 pounds per month or 2.7 tons per 12-month rolling period threshold of actual VOC emissions, thereby requiring implementation of VOC content emission limits for the fountain solutions for each offset lithographic printing press and control of the VOC content of cleaning solutions and work practice standards for cleaning activities and recordkeeping and reporting requirements for each affected offset lithographic printing press or letterpress printing press at the facility. The Department further estimates that 39 of these 387 facilities could be subject at the threshold of potential VOC emissions equal to or greater than 25 tpy, before consideration of add-on controls, from the dryer of a single heatset web offset lithographic printing press or heatset web letterpress printing press, thereby requiring VOC content emission limits or add-on control for the fountain solutions, and implementation of recordkeeping and reporting requirements and work practice standards for cleaning activities. The remaining 1,371 facilities, namely those with actual VOC emissions below the 450 pounds per month or 2.7 tons per 12-month rolling period threshold, would be subject only to the recordkeeping requirements and, if requested by the Department, reporting requirements of the final-form rulemaking.

The estimated maximum anticipated additional VOC emission reductions from implementation of the flexible packaging printing press portion of the final-form rulemaking range from 93 tpy to 114 tpy. The estimated maximum anticipated additional VOC emission reductions from implementation of the offset lithographic printing press and letterpress printing press portion of the

final-form rulemaking range from 553 tpy to 583 tpy. The actual amount of additional VOC emission reductions will be lower if the owners and operators of the affected facilities already comply with all or portions of the final-form rulemaking.

Although the final-form rulemaking is designed primarily to reduce ozone precursor emissions, the reformulation of noncomplying inks, coatings, adhesives and other printing materials or substitution of complying inks, coatings, adhesives and other printing materials to meet the VOC content limits applicable to users may also result in reduction of indoor and outdoor HAP emissions, which are also a serious health threat.

Compliance Costs

Flexible packaging printing press operations

The final-form rulemaking will affect the owner and operator of a flexible packaging printing press if an individual flexible packaging printing press has potential emissions from the dryer of at least 25 tpy of VOC from inks, coatings or adhesives, or a combination of these materials, before consideration of add-on controls. The final-form rulemaking requires an overall VOC control efficiency of 65% to 80% for each affected flexible packaging printing press, depending on date of first installation of the press and of the control device. This level of control may be met through the use of add-on controls, the use and application of low VOC-content or VOC-free inks, coatings and adhesives, or a combination of these methods. Users of inks, coatings and adhesives that meet the VOC emission limits in the final-form rulemaking will benefit by not needing to use add-on controls to reduce VOC emissions.

The final-form rulemaking includes requirements for work practice standards for cleaning activities that will apply to the owner and operator of an individual flexible packaging printing press with potential emissions of VOC equal to or greater than 25 tpy, before consideration of add-on controls, as well as the owner and operator of a facility where the total actual VOC emissions from all flexible packaging printing operations, and all emissions from related cleaning activities, are equal to or exceed 450 pounds per month or 2.7 tons per 12-month rolling period, before consideration of add-on controls.

The final-form rulemaking requires recordkeeping by owners and operators of flexible packaging printing presses with potential VOC emissions equal to or above the 25 tpy threshold, before consideration of add-on controls, and those with actual VOC emissions equal to and above, as well as those with actual VOC emissions below, the 450 pounds per month threshold.

Offset lithographic printing press and letterpress printing press operations

The final-form rulemaking affects the owner and operator of an individual heatset web offset lithographic printing press or an individual heatset web letterpress printing press if the potential emissions from the dryer, before consideration of add-on controls, are at least 25 tpy of VOC emissions from heatset inks, coatings and adhesives. The final-form rulemaking requires add-on VOC emission control, with a minimum level of VOC control efficiency of 90% to 95%, for the heatset dryer. The required minimum applicability level of VOC control efficiency for the control of VOC emissions from a heatset dryer is tied to the first installation date of the air pollution control device. The dryer pressure shall be maintained lower than the press room area pressure so that air flows into the dryer at all times when the press is operating.

The final-form rulemaking includes requirements for cleaning solutions and fountain solutions, and work practice requirements for cleaning solutions for owners and operators of offset lithographic printing press and letterpress printing press operations with VOC emissions equal to or above the 450 pounds per month or 2.7 tons per 12-month rolling period threshold.

The final-form rulemaking requires recordkeeping by owners and operators of offset lithographic printing press and letterpress printing press operations with potential VOC emissions equal to or above the 25 tpy threshold, before consideration of add-on controls, and those with actual VOC emissions equal to and above, as well as those with actual VOC emissions below, the 450 pounds per month or 2.7 tons per 12-month rolling period threshold.

Numbers applicable to all operations covered by the final-form rulemaking

The Department worked with information provided by the GAA and information in a Department database to estimate the number of facilities that will be covered by the final-form rulemaking. According to a representative of the GAA, there are about 1,800 printing facilities in this Commonwealth that offer a printing service potentially covered by this final-form rulemaking, including 114 flexographic and gravure facilities and 1,758 lithographic and letterpress facilities. However, these numbers are overestimations because they double count facilities that offer multiple printing services. Furthermore, due to the applicability thresholds in the final-form rulemaking, not all of these printing facilities will be subject to the VOC content limits, control provisions or work practice standards for cleaning activities of the final-form rulemaking. The GAA information does not list emission estimates; therefore, determining the number of facilities actually subject to the emission thresholds of the final-form rulemaking from this source of information alone is impossible.

A search of the Department's Environmental Facility Application Compliance Tracking System (eFACTS) database and AIMS database generated a list of over 100 printing facilities that could potentially be subject to the final-form rulemaking based on North America Industry Classification System codes regarding printing. These are two Department databases that share data and interface with each other. Facility contact information is inputted into eFACTS; the database contains records of permitted and some previously inspected facilities for which permits are not required. Site-specific sources and emissions are inputted into AIMS to maintain the emission inventory. However, eFACTS and AIMS do not provide an exhaustive list of all printing facilities in this Commonwealth, but only those that the Department has had contact with and a reason to input their data; these are usually the largest emitters. The Department recognizes the large discrepancy between total number of printing facilities in this Commonwealth compiled by the GAA and the number of printing facilities currently in the Department's eFACTS and AIMS databases. Therefore, the Department is continuing to work with the GAA, the NFIB and the SBCAC to reach out to printing facilities that might be affected by this final-form rulemaking.

The cost of complying with the requirements in the final-form rulemaking includes the cost of using low VOC-content or VOC-free inks, fountain solutions, coatings, adhesives and cleaning materials; add-on control systems; or a combination of these two approaches.

Based on information provided by the EPA in the flexible packaging printing CTG, the cost effectiveness of reducing VOC emissions from flexible packaging printing press operations is dependent on the flow rate, hourly solvent usage and operating hours. Using $5,700 per ton of VOC reduced from a catalytic oxidizer (in 2005 dollars), because the emission reductions of that scenario fit the scale of current emission estimates, the estimated maximum anticipated annual costs to the flexible packaging printing industry could range from $530,100 to $649,800 (93 tons VOC emissions reduced x $5,700/ton reduced; 114 tons VOC emissions reduced x $5,700/ton reduced).

Based on information provided by the EPA in the offset lithographic printing and letterpress printing CTG, the cost effectiveness of reducing VOC emissions from heatset offset lithographic and heatset letterpress printing operations is estimated to range from $855 to $2,010 per ton of VOC reduced for control of VOC emissions from cleaning materials and heatset inks, respectively. Using the $2,010 per ton of VOC removed for heatset inks, the estimated maximum anticipated annual costs to the offset lithographic printing and letterpress printing industry could range from $1,111,530 to $1,171,830 (553 tons VOC emissions reduced x $2,010/ton reduced; 583 tons VOC emissions reduced x $2,010/ton reduced). The estimated total maximum anticipated annual costs to the regulated printing industry as a whole could range from $1,641,630 to $1,821,630.

The owner and operator of a facility that already complies with the requirements of the 1996 NESHAP for the printing and publishing industry or other BAT permitting requirements through the use of add-on controls, including thermal oxidizers, may already satisfy the requirements of this final-form rulemaking and, if so, might have no additional annual costs.

The implementation of the work practices for the use and application of cleaning solutions is expected to result in a net cost savings. The recommended work practices should reduce the amounts of cleaning solutions used by reducing the amounts that are lost to evaporation, spillage and waste.

The recordkeeping and reporting requirements for owners and operators equal to, above and below the thresholds for control measures should be minimal because the records required under the final-form rulemaking are in line with what the industry currently tracks for inventory purposes or in current permits. The owner or operator of a printing press subject to the final-form rulemaking shall maintain records sufficient to demonstrate compliance with the applicable requirements. Records maintained for compliance demonstrations may include purchase, use, production and other records. Additionally, the Board added flexibility by deleting the "per day" applicability level and by allowing actual emissions to be estimated by using the highest VOC content in any material in a class to represent that class of materials.

Compliance Assistance Plan

The Department plans to educate and assist the public and regulated community in understanding the newly revised requirements and how to comply with them. This will be accomplished through the Department's ongoing compliance assistance program. The Department anticipates assisting the GAA and the NFIB with outreach information these organizations intend to send to their membership in relation to this final-form rulemaking.

Paperwork Requirements

The Board made several changes to streamline the recordkeeping requirements. For instance, the Board added language to the recordkeeping subsections that states: Records maintained for compliance demonstrations may include purchase, use, production and other records. In addition, the Board added flexibility by allowing VOC content records to be based upon the highest VOC content in any material in a class rather than on each individual material in the class. The owner and operator of an affected flexible packaging printing press or offset lithographic printing press or letterpress printing press will be required to keep records of information for inks, coatings, adhesives, fountain solutions and cleaning solvents, as applicable, sufficient to demonstrate compliance. The final-form rulemaking does not require daily records, as the proposed rulemaking would have. The final-form rulemaking requires owners and operators claiming an exemption from a VOC control provision based on potential or actual VOC emissions before consideration of controls to keep records sufficient to demonstrate that the press or facility is exempt. The records required in the final-form rulemaking shall be maintained for 2 years unless a longer period is specified by a plan approval or operating permit issued under Chapter 127 and submitted to the Department in an acceptable format upon receipt of a written request. Persons seeking to comply through the use of add-on controls are required to keep certain operational records and to meet the applicable reporting requirements in Chapter 139.

H. *Pollution Prevention*

The Pollution Prevention Act of 1990 (42 U.S.C.A. §§ 13101—13109) established a National policy that promotes pollution prevention as the preferred means for achieving state environmental protection goals. The Department encourages pollution prevention, which is the reduction or elimination of pollution at its source, through the substitution of environmentally friendly materials, more efficient use of raw materials and the incorporation of energy efficiency strategies. Pollution prevention practices can provide greater environmental protection with greater efficiency because they can result in significant cost savings to facilities that permanently achieve or move beyond compliance.

This final-form rulemaking will help ensure that the citizens and the environment of this Commonwealth experience the benefits of reduced emissions of VOCs and HAPs from flexible packaging printing presses, offset lithographic printing presses and letterpress printing presses. Although the final-form rulemaking is designed primarily to address ozone air quality, the reformulation or substitution of inks, coatings, adhesives, fountain solutions and cleaning materials to meet the VOC content limits applicable to users may also result in reduction of HAP emissions, which are also a serious health threat. The final-form rulemaking provides as one compliance option that inks, coatings, adhesives, fountain solutions and cleaning materials applied on or with flexible packaging printing presses, offset lithographic printing presses or letterpress printing presses in this Commonwealth meet specified limits for VOC content, usually through substitution of low VOC-content solvents or water for the high VOC-content solvents. The reduced levels of high VOC-content and HAP-content solvents will also benefit water quality through reduced loading on water treatment plants and in reduced quantities of high VOC-content and HAP-content solvents leaching into the ground.

I. *Sunset Review*

This final-form rulemaking will be reviewed in accordance with the sunset review schedule published by the Department to determine whether the regulations effectively fulfill the goals for which they were intended.

J. *Regulatory Review*

Under section 5(a) of the Regulatory Review Act (71 P. S. § 745.5(a)), on January 31, 2012, the Department submitted a copy of the notice of proposed rulemaking, published at 42 Pa.B. 779, to IRRC and the Chairpersons of the House and Senate Environmental Resources and Energy Committees for review and comment.

Under section 5(c) of the Regulatory Review Act, IRRC and the House and Senate Committees were provided with copies of the comments received during the public comment period, as well as other documents when requested. In preparing the final-form rulemaking, the Department has considered all comments from IRRC, the House and Senate Committees and the public.

Under section 5.1(j.2) of the Regulatory Review Act (71 P. S. § 745.5a(j.2)), on April 30, 2014, the final-form rulemaking was deemed approved by the House and Senate Committees. Under section 5.1(e) of the Regulatory Review Act, IRRC met on May 1, 2014, and approved the final-form rulemaking.

K. *Findings*

The Board finds that:

(1) Public notice of proposed rulemaking was given under sections 201 and 202 of the act of July 31, 1968 (P. L. 769, No. 240) (45 P. S. §§ 1201 and 1202) and regulations promulgated thereunder, 1 Pa. Code §§ 7.1 and 7.2.

(2) At least a 60-day public comment period was provided as required by law and all comments were considered.

(3) This final-form rulemaking does not enlarge the purpose of the proposed rulemaking published at 42 Pa.B. 779.

(4) These regulations are necessary and appropriate for administration and enforcement of the authorizing acts identified in Section C of this preamble.

(5) These regulations are reasonably necessary to attain and maintain the ozone NAAQS and to satisfy related CAA requirements.

L. *Order*

The Board, acting under the authorizing statutes, orders that:

(a) The regulations of the Department, 25 Pa. Code Chapters 121, 129 and 130, are amended by adding §§ 129.67a and 129.67b and by amending §§ 121.1, 129.51, 129.67, 129.77 and 130.703 to read as set forth in Annex A, with ellipses referring to the existing text of the regulations.

(b) The Chairperson of the Board shall submit this order and Annex A to the Office of General Counsel and the Office of Attorney General for review and approval as to legality and form, as required by law.

(c) The Chairperson of the Board shall submit this order and Annex A to IRRC and the Committees as required under the Regulatory Review Act.

(d) The Chairperson of the Board shall certify this order and Annex A and deposit them with the Legislative Reference Bureau as required by law.

(e) This final-form rulemaking will be submitted to the EPA as an amendment to the Pennsylvania SIP.

(f) This order shall take effect immediately upon publication in the *Pennsylvania Bulletin*.

E. CHRISTOPHER ABRUZZO,
Chairperson

(*Editor's Note*: For the text of the order of the Independent Regulatory Review Commission relating to this document, see 44 Pa.B. 2965 (May 17, 2014).)

Fiscal Note: Fiscal Note 7-469 remains valid for the final adoption of the subject regulations.

Annex A

TITLE 25. ENVIRONMENTAL PROTECTION

PART I. DEPARTMENT OF ENVIRONMENTAL PROTECTION

Subpart C. PROTECTION OF NATURAL RESOURCES

ARTICLE III. AIR RESOURCES

CHAPTER 121. GENERAL PROVISIONS

§ 121.1. Definitions.

The definitions in section 3 of the act (35 P. S. § 4003) apply to this article. In addition, the following words and terms, when used in this article, have the following meanings, unless the context clearly indicates otherwise:

* * * * *

Airtight cleaning system—A solvent cleaning machine that is automatically operated and seals at a differential pressure no greater than 0.50 psig, prior to the introduction of solvent or solvent vapor into the cleaning chamber and during all cleaning and drying cycles.

Alcohol—A chemical compound consisting of the hydroxyl (OH) group attached to an alkyl radical and having the general formula $C_nH_{2n+1}OH$, such as ethanol, n-propanol and isopropyl alcohol.

Alcohol substitute—Nonalcohol additives that contain VOCs and are used in the fountain solution including ethylene glycol and glycol ethers. Some additives are used to reduce the surface tension of water and others are added to prevent piling (ink build up).

Allegheny County air basin—Allegheny County.

* * * * *

As applied—

(i) The VOC and solids content of a coating, adhesive, sealant, adhesive primer, sealant primer, surface preparation solvent or cleanup solvent that is actually used to coat the substrate.

(ii) The term includes the contribution of materials used for in-house dilution of the coating.

(iii) For purposes of §§ 129.67a and 129.67b (relating to control of VOC emissions from flexible packaging printing presses; and control of VOC emissions from offset lithographic printing presses and letterpress printing presses), the VOC concentration of an ink, coating, adhesive, fountain solution or cleaning solution at the time it is actually used on a printing press.

As supplied—

(i) The VOC and solids content of a coating, adhesive, sealant, adhesive primer, sealant primer, surface preparation solvent or cleanup solvent as sold and delivered to the end user.

(ii) For purposes of §§ 129.67a and 129.67b, the VOC concentration of an ink, coating, adhesive, fountain solution or cleaning solution that is purchased for use on a printing press.

* * * * *

Baseline actual emissions—The rate of emissions, in tpy, of a regulated NSR pollutant, as determined in accordance with § 127.203a(a)(4) (relating to applicability determination).

Batch—

(i) For purposes of § 129.67b, a supply of fountain solution or cleaning solution that is prepared and used without alteration until completely used or removed from the printing process.

(ii) The term includes:

(A) A supply of fountain solution or cleaning solution prepared in a discrete amount.

(B) A supply of fountain solution that is continuously blended with an auto mix unit.

(C) A supply of cleaning solution that is blended and delivered to a press by use of an automatic blanket or roller wash system.

Batch vapor cleaning machine—

(i) A vapor cleaning machine in which individual parts or a set of parts move through the entire cleaning cycle before new parts are introduced into the cleaning machine.

(ii) The term includes solvent cleaning machines, such as ferris wheel cleaners or cross rod machines, that clean multiple loads simultaneously and are manually loaded.

(iii) The term does not include machines which do not have a solvent/air interface, such as airless and airtight cleaning systems.

* * * * *

CPDS—Certified Product Data Sheet—

(i) For purposes of wood furniture manufacturing operations under §§ 129.101—129.107 (relating to wood furniture manufacturing operations), documentation furnished by a coating supplier or an outside laboratory for a coating, strippable spray booth coating or solvent that provides the VOC content as pounds of VOC per pound of coating solids calculated from data measured using the EPA Reference Method 24 or an equivalent or alternative method. Batch formulation data may be used if it is demonstrated to the satisfaction of the Administrator of the EPA that the coating does not release additional VOC as reaction byproducts during the cure. The VOC content stated should represent the maximum VOC emission potential of the coating, strippable spray booth coating or solvent.

(ii) For purposes of printing operations under § 129.67b, documentation furnished by an ink supplier or an outside laboratory for an ink, fountain solution, cleaning solution or solvent that provides the VOC content calculated from data measured using the EPA Reference Method 24 or an equivalent or alternative method approved by the Department. The VOC content stated should represent the maximum VOC emission potential of the ink, fountain solution, cleaning solution or solvent.

* * * * *

Cleaning operation—Spray-gun, hand-wipe and flush cleaning operations.

Cleaning solution—A liquid solvent or solution used to remove ink, including dried ink, and debris from the operating surfaces of a printing press and its parts. The term includes a blanket wash, impression cylinder wash, roller wash, metering roller cleaner, plate cleaner, rubber rejuvenator and other cleaners used for cleaning a press or press parts or to remove dried ink or coating from areas around the press.

Cleaning solvent—A liquid material used for hand-wipe spray gun or flush cleaning. The term includes solutions that contain VOCs.

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Fleet average—For the purposes of motor vehicles subject to Pennsylvania's Clean Vehicles Program requirements, a motor vehicle manufacturer's average vehicle emissions of all NMOG emissions from vehicles which are produced and delivered for sale in this Commonwealth in any model year.

Flexible packaging—

(i) A package or part of a package, such as a bag, pouch, liner or wrap, the shape of which can be readily changed. Flexible packaging may be made of paper, plastic, film, aluminum foil, metalized or coated paper, metalized or coated film, or other material.

(ii) The term includes a shrink-wrap label or wrapper printed on or in-line with a flexible packaging printing press.

(iii) The term does not include folding cartons or other rigid packaging or self-adhesive labels.

Flexible packaging printing press—A printing press used for the production of printed flexible packaging materials using flexographic printing or rotogravure printing, or both.

Flexible primer—A primer applied to aerospace vehicles or components that meets flexibility requirements such as those needed for adhesive bond primed fastener heads or on surfaces expected to contain fuel. The flexible coating is required because it provides a compatible, flexible substrate over bonded sheet rubber and rubber-type coatings as well as a flexible bridge between the fasteners, skin and skin-to-skin joints on outer aircraft skins. This flexible bridge allows more topcoat flexibility around fasteners and decreases the chance of the topcoat cracking around the fasteners. The result is better corrosion resistance.

* * * * *

Fossil fuel fired—The combustion of fossil fuel or, if in combination with any other fuel, fossil fuel comprises 51% or greater of the annual heat input on a Btu basis.

Fountain solution—A mixture of water, volatile and nonvolatile chemicals and one or more additives that reduce the surface tension of the water so that the mixture spreads easily across the printing surface of a lithographic plate. The mixture wets the nonimage area so that the printing ink is maintained within the image area.

(i) Alcohols, specifically isopropyl alcohol, and alcohol substitutes, including ethylene glycol and glycol ethers, are the most common VOC additives used.

(ii) Nonvolatile additives include mineral salts and hydrophilic gums.

Freeboard ratio—

(i) For a cold cleaning machine or batch vapor cleaning machine, the distance from the liquid solvent in the idling mode to the top edge of the cleaning machine divided by the smaller dimension of the cleaning machine.

(ii) For an operating in-line vapor cleaning machine, the distance from the solvent/air interface to the bottom of the entrance or exit opening, whichever is lower, as measured during the idling mode.

* * * * *

Heat input—Heat derived from the combustion of fuel in a NO_x affected source. The term does not include the heat derived from preheated combustion air, recirculated flue gas or exhaust from another source or combination of sources.

Heatset—An operation in which heat is required to evaporate ink oils from the printing inks that are applied to the substrate.

Heatset ink—Printing ink that is set and dried with the use of heat.

Heavy-duty diesel engine—A diesel engine that is used to propel a motor vehicle with a GVWR of greater than 14,000 pounds.

* * * * *

Lease custody transfer—The transfer of produced crude oil or condensate, after processing or treating in the producing operations, from storage tanks or automatic transfer facilities to pipelines or other forms of transportation.

Letterpress printing—A printing process in which the image area of the plate is raised relative to the nonimage area and the paste ink is transferred to the substrate directly from the image surface. The substrate can be fed to the press as either an individual sheet or a rolled web.

Limited access space—Internal surfaces or passages of an aerospace vehicle or component to which coatings cannot be applied without the aid of an airbrush or a spray gun extension for the application of coatings.

Liquid service—Equipment which processes, transfers or contains a VOC or mixture of VOCs in the liquid phase.

Lithographic plate—The plate used in lithographic or offset lithographic printing which has chemically differentiated image and nonimage areas so that the printing ink adheres to the image areas.

Lithographic printing—A printing process in which the image and nonimage areas are in the same plane on the surface of a lithographic plate. The image and nonimage areas are chemically differentiated; the image area is oil receptive and the nonimage area is water receptive. The substrate can be fed to the press as either an individual sheet or a rolled web.

Low RVP gasoline—Gasoline that has an RVP of 7.8 pounds per square inch or less as determined in accordance with the appropriate sampling and testing methodologies in 40 CFR Part 80, Appendix E (relating to test for determining Reid vapor pressure (RVP) of gasoline and gasoline-oxygenate blends).

* * * * *

Noncommercial fuel—A gaseous or liquid fuel generated as a byproduct or waste product which is not specifically produced and manufactured for sale. A mixture of noncommercial and a commercial fuel oil where at least 50% of the heat content is derived from the noncommercial fuel portion is considered a noncommercial fuel.

Non-heatset—A lithographic or letterpress printing process in which the printing inks, including varnishes, are set and dried by absorption or oxidation of the ink oils rather than by evaporation with heat. These nonpolymerization processes are also known as "coldset" processes. Polymerization processes including the use of an infrared dryer, ultraviolet curing or electron beam curing are also considered non-heatset operations.

Nonmembrane roof installation/repair adhesive—

(i) An adhesive intended by the manufacturer for use in the installation or repair of nonmembrane roofs and that is not intended for the installation of prefabricated single-ply flexible roofing membrane.

(ii) The term includes:

(A) Plastic or asphalt roof cement.

(B) Asphalt roof coating.

(C) Cold application cement.

* * * * *

OTC MOU—Ozone Transport Commission Memorandum of Understanding—The memorandum of understanding signed by representatives of ten states and the District of Columbia as members of the Ozone Transport Commission on September 27, 1994.

Offset lithographic printing—A printing process in which the image and nonimage areas are in the same plane on the surface of a lithographic plate and the image and nonimage areas are chemically differentiated. The ink film is transferred from the lithographic plate to an intermediary surface, typically a rubber-covered cylinder called a blanket, which in turn transfers the ink film to the substrate. The substrate can be fed to the press as either an individual sheet or a rolled web.

Offset vehicle—A light-duty vehicle which has been certified by California as set forth in 13 CCR, Division 3, Chapter 1.

* * * * *

Paper, film or foil coating or *paper, film or foil surface coating*—Coatings applied in a continuous, uniform layer to paper, film or foil surfaces, and pressure-sensitive tapes, regardless of substrate. The coatings are applied to provide a covering, finish or functional or protective layer to the substrate, saturate a substrate for lamination or provide adhesion between two substrates for lamination.

(i) The term includes coatings used in web coating processes on the following substrates:

(A) Pressure sensitive tapes and labels, including fabric coated for use in pressure sensitive tapes and labels.

(B) Plastic and photographic films.

(C) Industrial and decorative laminates.

(D) Abrasive products, including fabric coated for use in abrasive products.

(E) Flexible packaging, including coating of nonwoven polymer substrates for use in flexible packaging, if the coating is not applied on or in-line with a flexible packaging printing press.

(F) Those used in miscellaneous coating operations, including the following:

* * * * *

Printed interior panel—A panel on which the grain or natural surface is obscured by filler and basecoat upon which a simulated grain or decorative pattern is printed.

Printing press—The equipment used to apply words, pictures or designs to a sheet or continuous substrate of paper, plastic or other material. The equipment must include at least one printing work station. The following equipment, if present, is also considered part of the term:

(i) One or multiple unwind or feed sections.

(ii) A series of individual work stations, which may include inboard and outboard work stations. A work station that employs another technology, including surface coating, is considered part of the printing press if the station is capable of printing or coating on the same substrate and if the work station is physically connected as part of the printing press.

(iii) A dryer associated with a work station.

(iv) A rewind, stack or collection section.

Process—A method, reaction or operation in which materials are handled or whereby materials undergo physical change—that is, the size, shape, appearance, temperature, state or other physical property of the material is altered—or chemical change—that is, a substance with different chemical composition or properties is formed or created. The term includes all of the equipment, operations and facilities necessary for the completion of the transformation of the materials to produce a physical or chemical change. There may be several processes in series or parallel necessary to the manufacture of a product.

* * * * *

Rotogravure printing—The application of words, designs and pictures to a substrate by means of a roll printing technique which involves an intaglio or recessed image area in the form of cells.

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Sheet rubber installation—

(i) The process of applying sheet rubber liners by hand to metal or plastic substrates to protect the underlying substrate from corrosion or abrasion.

(ii) The term includes laminating sheet rubber to fabric by hand.

Sheet-fed printing—A printing process in which individual sheets of substrate are fed sequentially to the printing press.

Shutdown—For purposes of §§ 129.301—129.310, the period of time during which a glass melting furnace is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to a cold or ambient temperature as the fuel supply is turned off.

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Vapor up control switch—A thermostatically controlled switch which shuts off or prevents condensate from being sprayed when there is no vapor. On in-line vapor cleaning machines, the switch also prevents the conveyor from operating when there is no vapor.

Varnish—For purposes of § 129.67b, an unpigmented offset lithographic ink which is used or applied on an offset lithographic printing press in the same manner as a pigmented offset lithographic ink. The term includes a heatset varnish, sheet-fed varnish and non-heatset varnish.

Vehicle—A highway vehicle powered by an internal combustion engine with fewer than nine seating positions for adults.

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Waxy, heavy-pour crude oil—A crude oil with a pour point of 50°F or higher as determined by the *American Society of Testing and Materials Standard D 97-66*, "Test for Pour Point of Petroleum Oils."

Web printing—A printing process in which continuous rolls of substrate material are fed to the printing press and rewound or cut to size after printing.

Wet fastener installation coating—A primer or sealant applied to aerospace vehicles or components by dipping, brushing or daubing on fasteners which are installed before the coating is cured.

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CHAPTER 129. STANDARDS FOR SOURCES

SOURCES OF VOCs

§ 129.51. General.

(a) *Equivalency.* Compliance with §§ 129.52, 129.52a, 129.52b, 129.52c, 129.54—129.69, 129.71—129.73 and 129.77 may be achieved by alternative methods if the following exist:

(1) The alternative method is approved by the Department in an applicable plan approval or operating permit, or both.

(2) The resulting emissions are equal to or less than the emissions that would have been discharged by complying with the applicable emission limitation.

(3) Compliance by a method other than the use of a low VOC coating, adhesive, sealant, adhesive primer, sealant primer, surface preparation solvent, cleanup solvent, cleaning solution, fountain solution or ink which meets the applicable emission limitation in §§ 129.52, 129.52a, 129.52b, 129.52c, 129.67, 129.67a, 129.67b, 129.73 and 129.77 shall be determined on the basis of equal volumes of solids.

(4) Capture efficiency testing and emissions testing are conducted in accordance with methods approved by the EPA.

(5) Adequate records are maintained to ensure enforceability.

(6) The alternative compliance method is incorporated into a plan approval or operating permit, or both, reviewed by the EPA, including the use of an air cleaning device to comply with § 129.52, § 129.52a, § 129.52b, § 129.52c, § 129.67, § 129.67a, § 129.67b, § 129.68(b)(2) and (c)(2), § 129.73 or § 129.77.

(b) *New source performance standards.* Sources covered by new source performance standards which are more stringent than those contained in this chapter shall comply with those standards in lieu of the standards in this chapter.

(c) *Demonstration of compliance.* Unless otherwise set forth in this chapter, test methods and procedures used to monitor compliance with the emission requirements of this section are those specified in Chapter 139 (relating to sampling and testing).

(d) *Records.* The owner or operator of a facility or source subject to one or more of the VOC emission limitations and control requirements in this chapter shall keep records to demonstrate compliance with the applicable limitation or control requirement.

(1) The records shall provide sufficient data and calculations to clearly demonstrate that the applicable emission limitation or control requirement is met. Data or information required to determine compliance with an applicable limitation shall be recorded and maintained in a time frame consistent with the averaging period of the standard.

(2) The records shall be maintained onsite for 2 years, unless a longer period is required by a plan approval or operating permit issued under Chapter 127 (relating to construction, modification, reactivation and operation of sources). The records shall be made available to the Department on request.

(e) *Demonstration of exempt status.* The owner or operator of a facility or source claiming that the facility or source is exempt from the VOC control provisions of this chapter shall maintain records that clearly demonstrate to the Department that the facility or source is not subject to the VOC emission limitations or control requirements of this chapter.

§ 129.67. Graphic arts systems.

(a) This section applies as follows:

(1) This section applies to the owner and operator of a facility whose rotogravure and flexographic printing presses by themselves or in combination with a surface coating operation subject to § 129.52, § 129.52a, § 129.52b or § 129.52c or in combination with a flexible packaging printing press subject to § 129.67a (relating to control of VOC emissions from flexible packaging printing presses) have the potential to emit or have emitted VOCs into the outdoor atmosphere in quantities greater than 1,000 pounds (460 kilograms) per day or 100 tons (90,900 kilograms) per year during any calendar year since January 1, 1987.

(2) This section applies to the owner and operator of a flexographic or rotogravure printing press that prints flexible packaging materials subject to § 129.67a(a)(1)(ii) if the owner or operator was required to install a control device under this section prior to June 28, 2014.

(3) This section does not apply to the owner or operator of a flexible packaging printing press subject to § 129.67a(a)(1)(i).

(b) A person may not permit the emission into the outdoor atmosphere of VOCs from a rotogravure or flexographic printing press subject to this section unless one of the following limitations is met:

(1) The volatile fraction of the ink, as applied to the substrate, contains 25% or less by volume of VOC and 75% or more by volume of water.

(2) The ink, as applied to the substrate, less water, contains 60% by volume or more of solid material.

(3) The owner or operator installs and operates a carbon adsorption system, an incineration system or an alternative VOC emission reduction system which recovers or destroys at least 90% of the VOCs entering the system. The overall level of emission recovery or destruction may not be less than that necessary to comply with subsection (c).

(c) A capture system shall be used in conjunction with the emission control systems in subsection (b)(3). The design and operation of the capture and control system shall be consistent with good engineering practice and shall be designed to provide for a contemporaneous, overall reduction in VOC emission from each ink/press of at least the following:

(1) Seventy-five percent where a publication rotogravure process is employed.

(2) Sixty-five percent where another rotogravure process is employed.

(3) Sixty percent where a flexographic printing process is employed.

(d) Presses used only to check the quality of the image formation of newly etched or engraved printing cylinders are exempted from this section if the aggregate emissions from the presses do not exceed 400 pounds in a 30-day running period.

(e) To determine applicability under this section, emissions of VOCs used in clean-up operations shall be summed with emissions from surface coating and printing.

§ 129.67a. Control of VOC emissions from flexible packaging printing presses.

(a) *Applicability.*

(1) Except as specified in paragraph (3) or (4), this section applies to the owner and operator of a flexible packaging printing press if one or more of the following apply:

(i) *Potential VOC emissions.* An individual flexible packaging printing press has potential emissions from the dryer, before consideration of add-on controls, of at least 25 tpy of VOCs from inks, coatings and adhesives combined. This section supersedes § 129.67 (relating to graphic arts systems).

(ii) *Actual VOC emissions at or above threshold.* The total actual VOC emissions from all inks, coatings and adhesives combined from all flexible packaging printing presses and all VOC emissions from related cleaning activities at the facility are equal to or greater than 450 pounds (204.1 kilograms) per month or 2.7 tons (2,455 kilograms) per 12-month rolling period, before consideration of add-on controls.

(iii) *Actual VOC emissions below threshold.* The total actual VOC emissions from all inks, coatings and adhesives combined from all flexible packaging printing presses and all VOC emissions from related cleaning activities at the facility are less than 450 pounds (204.1 kilograms) per month or 2.7 tons (2,455 kilograms) per 12-month rolling period, before consideration of add-on controls.

(2) The owner or operator of a flexographic or rotogravure printing press subject to paragraph (1)(ii) and § 129.67, who was required to install a control device under § 129.67 prior to June 28, 2014, shall continue the operation of that control device and also meet the requirements of this section.

(3) VOCs from adhesives used at a facility that are not used or applied on or with a flexible packaging printing press are not subject to this section and may be regulated under § 129.52b, § 129.77 or Chapter 130, Subchapter D (relating to control of VOC emissions from paper, film and foil surface coating processes; control of emissions from the use or application of adhesives, sealants, primers and solvents; and adhesives, sealants, primers and solvents).

(4) Surface coating of flexible packaging substrates that is not done with a flexible packaging printing press is regulated under § 129.52b.

(b) *Existing RACT permit.* This section supersedes the requirements of a RACT permit issued to the owner or operator of a source subject to this section prior to January 1, 2015, under §§ 129.91—129.95 (relating to stationary sources of NO_x and VOCs) to control, reduce or minimize VOCs from a flexible packaging printing press, except to the extent the RACT permit contains more stringent requirements.

(c) *Emission limits.* Beginning January 1, 2015, a person subject to subsection (a)(1)(i) may not cause or permit the emission into the outdoor atmosphere of VOCs from a flexible packaging printing press unless one or more of the following limitations is met:

(1) *Individual ink, coating or adhesive.* The VOC content of each as applied ink, coating or adhesive used on a single flexible packaging printing press meets the following requirements:

(i) The VOC content is equal to or less than one or both of the following limits:

(A) 0.16 lb VOC per lb material as applied.

(B) 0.8 lb VOC per lb material solids as applied.

(ii) The VOC content is calculated as follows for VOC content expressed in units of weight of VOC per weight of material solids:

$$VOC_B = (W_o)/(W_n)$$

Where:

VOC_B = VOC content in lb VOC/lb of solids as applied or kg VOC/kg of solids as applied

W_o = Weight percent of VOC (W_v-W_w-W_{ex})

W_v = Weight percent of total volatiles (100%-weight percent solids)

W_w = Weight percent of water

W_{ex} = Weight percent of exempt solvents

W_n = Weight percent of solids of the as applied ink, coating or adhesive

(iii) Sampling of the ink, coating or adhesive and testing for the VOC content of the ink, coating or adhesive is performed in accordance with subsection (f).

(2) *Weighted average.* The daily weighted-average VOC content of all inks, coatings and adhesives combined used on a single flexible packaging printing press meets one or both of the VOC content limits in paragraph (1)(i). The use of averaging to meet the VOC content limits may not be used across multiple printing presses. Averaging is available on a single flexible packaging printing press if the following requirements are met:

(i) The daily weighted average is calculated using the following equation:

$$VOC_w = \frac{\sum_{i=1}^{n} C_i V_i}{V_t}$$

Where:

VOC_w=The daily weighted average VOC content, as applied, of all inks, coatings and adhesives combined used on a single flexible packaging printing press, in lb VOC/gal of coating solids

n=The number of different inks, coatings and adhesives used each day on the single flexible packaging printing press

V_i=The volume of solids for each ink, coating and adhesive, as applied, used each day on the single flexible packaging printing press, in gallons

C_i=The VOC content of each ink, coating and adhesive, as applied, used each day on the single flexible packaging printing press, in lb VOC/gal coating solids

V_t=The total volume of solids for all inks, coatings and adhesives combined, as applied, used each day on the single flexible packaging printing press, in gallons

(ii) Sampling of the inks, coatings and adhesives and testing for the VOC content of the inks, coatings and adhesives is performed in accordance with subsection (f).

(3) *Add-on air pollution control device.* The overall weight of VOCs emitted to the atmosphere from all inks, coatings and adhesives combined used on a single flexible packaging printing press is reduced through the use of vapor recovery or oxidation or another method that is acceptable under § 129.51(a) (relating to general). The overall control efficiency of a control system, as determined by the test methods and procedures specified in subsection (f), may not be less than that listed in Table 1.

Table 1

Overall Control Efficiency Requirement of a Control System on a Single Flexible Packaging Printing Press with Potential Emissions ≥ 25 tpy of VOC Before Control

Control System Overall Control Efficiency	*Printing Press First Installation Date*[1]		*Air Pollution Control Device First Installation Date*[1]	
Requirement	*Prior to*	*On or after*	*Prior to*	*On or after*
	March 14, 1995*	March 14, 1995*	January 1, 2015**	January 1, 2015**
≥ 65%	X		X	
≥ 70%	X			X
≥ 75%		X	X	
≥ 80%		X		X

[1] First installation date is the first date of operation for a source or a control device. This date does not change if the source or control device is moved to a new location or if the control device is later used to control a new source.

* March 14, 1995, is the date of the proposed 1996 NESHAP for the printing and publishing industry.

** January 1, 2015, is the compliance date of the flexible packaging printing press regulation.

(4) *Restriction on potential VOC emissions.* The Department has issued a plan approval, operating permit or Title V permit to the owner or operator prior to January 1, 2015, establishing a Federally-enforceable limitation to limit the potential emissions of VOC from the flexible packaging printing press below 25 tpy before consideration of add-on controls.

(d) *Compliance and monitoring requirements for an add-on air pollution control device.* The owner or operator of a flexible packaging printing press subject to subsection (a)(1)(i) using an add-on air pollution control device in accordance with subsection (c)(3) shall comply with the following requirements:

(1) The add-on air pollution control device shall be equipped with the applicable monitoring equipment and the monitoring equipment shall be installed, calibrated, operated and maintained according to manufacturer's specifications at all times the add-on air pollution control device is in use. If the add-on air pollution control device is a:

(i) Noncatalytic thermal oxidizer, the minimum combustion or operating temperature must be continuously monitored. The temperature reading shall be recorded in accordance with subsection (e)(1) at least once every 15 minutes while the noncatalytic thermal oxidizer is operating.

(ii) Catalytic thermal oxidizer:

(A) The inlet gas temperature must be continuously monitored. The temperature reading shall be recorded in accordance with subsection (e)(1) at least once every 15 minutes while the catalytic thermal oxidizer is operating.

(B) A catalyst activity test shall be performed a minimum of one time per rolling 2-year period.

(iii) Control device other than that specified in subparagraph (i) or (ii), parameters specific to the control device must be continuously monitored. The parameters shall be recorded in accordance with subsection (e)(1) at least once every 15 minutes while the control device is operating.

(2) The add-on air pollution control device specified in paragraph (1) shall be operated at a 3-hour average temperature not lower than 50°F below the average temperature demonstrated during the most recent compliant source test approved by the Department.

(3) The add-on air pollution control device specified in paragraph (1) shall be in operation at all times that the source is operating.

(4) The add-on air pollution control device shall be approved, in writing, by the Department in a plan approval, operating permit or Title V permit prior to use.

(e) *Recordkeeping and reporting requirements.* Beginning January 1, 2015, the owner or operator of a flexible packaging printing press subject to this section shall maintain records sufficient to demonstrate compliance with the requirements of this section. Records maintained for compliance demonstrations may include purchase, use, production and other records.

(1) An owner or operator subject to subsection (a)(1)(i) using an add-on air pollution control device shall maintain records sufficient to demonstrate compliance with subsection (d), including records of the following information:

(i) Temperature reading of the add-on air pollution control device.

(ii) Maintenance performed on the add-on air pollution control device and monitoring equipment, including the date and type of maintenance.

(iii) Catalyst activity test performed, if applicable.

(2) An owner or operator subject to subsection (a)(1)(i) not using an add-on air pollution control device shall maintain records of the as applied VOC content of inks, coatings and adhesives sufficient to demonstrate compliance with the limitations under subsection (c)(1) or (2).

(3) An owner or operator claiming exemption from a VOC control provision of this section based on potential or actual VOC emissions, as applicable, shall maintain records that demonstrate to the Department that the press or facility is exempt.

(4) The owner or operator may group materials into classes using the highest VOC content in any material in a class to represent that class of material.

(5) The records required under paragraphs (1)—(4) shall be maintained for 2 years, unless a longer period is required by a plan approval or operating permit issued under Chapter 127 (relating to construction, modification, reactivation and operation of sources). The records shall be submitted to the Department in an acceptable format upon receipt of a written request.

(6) The owner or operator of a flexible packaging printing press subject to subsection (a)(1)(i) that is required to demonstrate overall control efficiency in accordance with subsections (c)(3) and (d) shall submit reports to the Department in accordance with Chapter 139 (relating to sampling and testing).

(f) *Sampling and testing.*

(1) Sampling and testing shall be performed as follows:

(i) Sampling of an ink or coating and testing for the VOC content of the ink or coating shall be performed in accordance with the procedures and test methods specified in Chapter 139.

(ii) Sampling and testing of an add-on air pollution control device shall be performed in accordance with the procedures and test methods specified in Chapter 139 and meet one of the following:

(A) Sampling and testing shall be performed no later than 180 days after the compliance date of the press.

(B) Sampling and testing shall have been performed within 5 years prior to January 1, 2015, and previously approved by the Department. Capture efficiency retesting may be waived for capture systems that are not permanent total enclosures if the operating parameters indicate that a fundamental change has not taken place in the operation or design of the equipment, unless retesting is required under Subpart C, Article III (relating to air resources) or a plan approval, operating permit or an order issued by the Department. For purposes of this clause, fundamental changes include adding printing stations to a press, increasing or decreasing the volumetric flow rate from the dryer or changing the static duct pressure.

(2) The overall control efficiency of the add-on air pollution control device shall be determined by the following test methods and procedures subject to prior written approval by the Department.

(i) The capture efficiency shall be determined in accordance with either of the following methods:

(A) 40 CFR Part 51, Appendix M, Methods 204—204F, including updates and revisions.

(B) 40 CFR Part 63, Subpart KK, Appendix A (relating to data quality objective and lower confidence limit approaches for alternative capture efficiency protocols and test methods).

(ii) The control efficiency shall be determined using one or more of the following methods, as applicable. The method used to measure the inlet concentration of VOC may be the same method used to determine the outlet concentration of VOC unless use of the same method is determined to be technically infeasible.

(A) EPA Reference Method 25, *Determination of Total Gaseous Nonmethane Organic Emissions as Carbon*, codified in 40 CFR Part 60, Appendix A, including updates and revisions. EPA Reference Method 25 may be used if the total gaseous nonmethane organic compound concentration is equal to or greater than 50 parts per million by volume, measured as carbon.

(B) EPA Reference Method 25A, *Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer*, codified in 40 CFR Part 60, Appendix A, including updates and revisions. EPA Reference Method 25A may not be used if the total gaseous nonmethane organic compound concentration at the outlet of the add-on air pollution control device is equal to or greater than 50 parts per million by volume, measured as carbon.

(C) EPA Reference Method 18, *Measurement of Gaseous Organic Compound Emissions by Gas Chromatography*, codified in 40 CFR Part 60, Appendix A, including updates and revisions. EPA Reference Method 18 may be used if the total gaseous nonmethane organic compound concentration is equal to or greater than 50 parts per million by volume, measured as carbon. EPA Reference Method 18 may be used in conjunction with EPA Reference Method 25A to subtract emissions of exempt VOCs.

(3) Other test methods demonstrated to provide results that are acceptable for purposes of determining compliance with this section may be used if prior approval is obtained in writing from the Department and the EPA.

(g) *Work practice requirements for cleaning activities.*

(1) Except as specified in paragraph (3), beginning January 1, 2015, the owner or operator of a flexible packaging printing press subject to subsection (a)(1)(i), (1)(ii) or (2) shall comply with the following work practices for cleaning activities at the facility:

(i) Store all VOC-containing cleaning solutions, waste cleaning solutions and used shop towels in closed containers.

(ii) Ensure that mixing vessels and storage containers used for VOC-containing cleaning solutions, waste cleaning solutions and used shop towels are kept closed at all times, except when depositing or removing these solutions or shop towels.

(iii) Minimize spills of VOC-containing cleaning solutions and waste cleaning solutions and clean up spills immediately.

(iv) Convey VOC-containing cleaning solutions, waste cleaning solutions and used shop towels from one location to another in closed containers or pipes.

(2) The requirements in paragraph (1) apply to the following activities:

(i) Cleaning of ink, coating or adhesive from a press.

(ii) Cleaning of ink, coating or adhesive from press parts, including press parts that have been removed from the press for cleaning.

(iii) Cleaning of ink, coating or adhesive from areas around a press.

(3) The requirements in paragraph (1) do not apply to the following activities:

(i) Cleaning electronic components of a press.

(ii) Cleaning in pre-press (for example, platemaking) operations.

(iii) Cleaning in post-press (for example, binding) operations.

(iv) Using janitorial supplies (for example, detergents or floor cleaners) for general cleaning around a press.

(v) The use of parts washers or cold cleaners at a flexible packaging printing facility. The use of parts washers and cold cleaners is regulated under § 129.63 (relating to degreasing operations).

§ 129.67b. Control of VOC emissions from offset lithographic printing presses and letterpress printing presses.

(a) *Applicability.*

(1) Except as specified in paragraph (3), this section applies to the owner and operator of an offset lithographic printing press or a letterpress printing press, or both, if the press meets one or a combination of the following:

(i) *Add-on air pollution control device.* A single heatset web offset lithographic printing press or heatset web letterpress printing press that has potential emissions from the dryer, before consideration of add-on controls, of at least 25 tpy of VOCs from all heatset inks (including varnishes), coatings and adhesives combined.

(ii) *Letterpress printing.* One or more letterpress printing presses if the total actual VOC emissions from all inks (including varnishes), coatings and adhesives combined from all letterpress printing presses and all VOC emissions from related cleaning activities at the facility are equal to or greater than 450 pounds (204.1 kilograms) per month or 2.7 tons (2,455 kilograms) per 12-month rolling period, before consideration of add-on controls.

(iii) *Offset lithographic printing.* One or more offset lithographic printing presses if the total actual VOC emissions from all inks (including varnishes), coatings, adhesives and fountain solutions combined from all offset lithographic printing presses and all VOC emissions from related cleaning activities at the facility are equal to or greater than 450 pounds (204.1 kilograms) per month or 2.7 tons (2,455 kilograms) per 12-month rolling period, before consideration of add-on controls.

(iv) *Offset lithographic printing and letterpress printing.* One or more offset lithographic printing presses and one or more letterpress printing presses if the total actual VOC emissions from all inks (including varnishes), coatings, adhesives and fountain solutions combined and all VOC emissions from related cleaning activities at the facility are equal to or greater than 450 pounds (204.1 kilograms) per month or 2.7 tons (2,455 kilograms) per 12-month rolling period, before consideration of add-on controls.

(v) *Emissions below 450 pounds per month and 2.7 tons per 12-month rolling period.* The total actual VOC emissions from all inks (including varnishes), coatings, adhesives and fountain solutions combined from all offset lithographic printing presses, all letterpress printing presses and all VOC emissions from related cleaning activities at the facility are less than 450 pounds (204.1

kilograms) per month and 2.7 tons (2,455 kilograms) per 12-month rolling period, before consideration of add-on controls.

(2) The owner or operator of an offset lithographic printing press subject to paragraph (1) may use the VOC emission retention factors and capture efficiency factors specified in subsection (l) to determine the amount of potential or actual VOC emissions that is available for capture and control from the inks (including varnishes), fountain solutions and cleaning solutions used on the offset lithographic printing press.

(3) VOCs from adhesives used at a facility that are not used or applied on or with an offset lithographic printing press or a letterpress printing press are not subject to this section and may be regulated under § 129.77 or Chapter 130, Subchapter D (relating to control of emissions from the use or application of adhesives, sealants, primers and solvents; and adhesives, sealants, primers and solvents).

(b) *Existing RACT permit.* This section supersedes the requirements of a RACT permit issued to the owner or operator of a source subject to subsection (a) prior to January 1, 2015, under §§ 129.91—129.95 (relating to stationary sources of NO_x and VOCs) to control, reduce or minimize VOCs from an offset lithographic printing press or a letterpress printing press, or both, except to the extent the RACT permit contains more stringent requirements.

(c) *Emission limits for cleaning solutions and fountain solutions used in or on printing presses subject to this section.*

(1) *Cleaning solutions.* Beginning January 1, 2015, a person subject to subsection (a)(1)(i), (ii), (iii) or (iv) may not cause or permit the emission into the outdoor atmosphere of VOCs from cleaning solutions used in or on an offset lithographic printing press or a letterpress printing press unless the following conditions are met:

(i) The cleaning solutions used must meet one or both of the following VOC limits:

(A) A VOC composite partial vapor pressure less than 10 millimeters of mercury at 68°F (20°C).

(B) A VOC content less than 70% by weight.

(ii) The use of one or more cleaning solutions with a higher VOC composite partial vapor pressure or higher VOC content, or both, than is listed in subparagraph (i) is limited to 110 gallons per year, combined, of all cleaning solutions that exceed the limits in subparagraph (i).

(2) *Fountain solutions.* Except as specified in paragraph (3), beginning January 1, 2015, a person subject to subsection (a)(1)(i), (iii) or (iv) may not cause or permit the emission into the outdoor atmosphere of VOCs from a fountain solution used in an offset lithographic printing press unless the fountain solution meets one or more of the following VOC limits.

(i) For each heatset web offset lithographic printing press, the press-ready (as applied) fountain solution must meet one of the following limits:

(A) A VOC content of 1.6% or less by weight.

(B) A VOC content of 3% or less by weight if the fountain solution is refrigerated below 60°F (15.5°C).

(C) A VOC content of 5% or less by weight and no alcohol in the fountain solution.

(D) Another method that achieves a level of control of VOC emissions from the press-ready (as applied) fountain solution equal to or better than the methods listed in clauses (A)—(C).

(ii) For each sheet-fed offset lithographic printing press, the press-ready (as applied) fountain solution must meet one of the following limits:

(A) A VOC content of 5% or less by weight.

(B) A VOC content of 8.5% or less by weight if the fountain solution is refrigerated below 60°F (15.5°C).

(C) A VOC content of 5% or less by weight and no alcohol in the fountain solution.

(D) Another method that achieves a level of control of VOC emissions from the press-ready (as applied) fountain solution equal to or better than the methods listed in clauses (A)—(C).

(iii) For each non-heatset web offset lithographic printing press, the press-ready (as applied) fountain solution shall contain a VOC content of 5% or less by weight and no alcohol in the fountain solution.

(3) *Fountain solution exceptions.* The control requirements under paragraph (2) for a fountain solution do not apply to the owner or operator of either of the following:

(i) A sheet-fed offset lithographic printing press with maximum sheet size 11 x 17 inches or smaller.

(ii) An offset lithographic printing press with total fountain solution reservoir of less than 1 gallon.

(d) *Emission limits for heatset web offset lithographic printing presses and heatset web letterpress printing presses.*

(1) Except as specified in paragraph (2) or (3), beginning January 1, 2015, a person subject to subsection (a)(1)(i) may not cause or permit the emission into the outdoor atmosphere of VOCs from a heatset web offset lithographic printing press or a heatset web letterpress printing press, or both, unless the overall weight of VOCs emitted to the atmosphere from the heatset dryer is reduced through the use of vapor recovery or oxidation or another method that is authorized under § 129.51(a) (relating to general). The heatset dryer pressure must be maintained lower than the press room area pressure so that air flows into the heatset dryer at all times when the press is operating.

(i) The VOC control efficiency of an add-on air pollution control device for a heatset dryer, determined in accordance with subsection (h), must meet either of the following:

(A) At least 90% for an add-on air pollution control device whose first installation date was prior to January 1, 2015.

(B) At least 95% for an add-on air pollution control device whose first installation date is on or after January 1, 2015.

(ii) The first installation date is the first date of operation for a source or a control device. This date will not change if the source or control device is moved to a new location or if the control device is later used to control a new source.

(iii) The owner or operator of the printing press may request the Department's approval for an alternative limitation if the following requirements are met:

(A) The request is submitted to the Department in writing.

(B) The request demonstrates one of the following:

(I) The inlet VOC concentration to the control device is so low that compliance with the 90% or 95% overall efficiency in subparagraph (i) is not achievable.

(II) The press is using a combination dryer and oxidizer or other control equipment configuration that does not have an inlet that meets the requirement for testing specified in subsection (h).

(C) The request demonstrates the minimum outlet VOC concentration that the unit can achieve, not to exceed 20 ppm as hexane (40 ppm as propane) on a dry basis.

(iv) The alternative limitation requested under subparagraph (iii) must be approved by the Department in a plan approval, operating permit or Title V permit.

(2) This subsection does not apply for one or a combination of the following circumstances:

(i) The press is used for book printing.

(ii) The press has a maximum web width of 22 inches or less.

(iii) The press is operated with one or a combination of the following inks, coatings or varnishes:

(A) Waterborne coatings.

(B) Ultra-violet light or electron beam radiation cured materials.

(C) Sheet-fed or non-heatset web inks.

(D) Sheet-fed or non-heatset web varnishes.

(3) This subsection does not apply to the owner or operator of the press if the Department has issued a plan approval, operating permit or Title V permit to the owner or operator prior to January 1, 2015, establishing a Federally-enforceable limitation to limit the potential emissions of VOC from the offset lithographic printing press or the letterpress printing press below 25 tpy, before consideration of add-on controls.

(e) *Compliance and monitoring requirements.*

(1) *Add-on air pollution control device.* The owner or operator of a heatset web offset lithographic printing press or heatset web letterpress printing press subject to this section using an add-on air pollution control device in accordance with subsection (d) shall comply with the following requirements:

(i) The add-on air pollution control device shall be equipped with the applicable monitoring equipment and the monitoring equipment shall be installed, calibrated, operated and maintained according to manufacturer's specifications at all times the add-on air pollution control device is in use. If the add-on air pollution control device is a:

(A) Noncatalytic thermal oxidizer, the minimum combustion or operating temperature must be continuously monitored. The temperature reading shall be recorded in accordance with subsection (f)(1) at least once every 15 minutes while the noncatalytic thermal oxidizer is operating.

(B) Catalytic thermal oxidizer:

(I) The inlet gas temperature must be continuously monitored. The temperature reading shall be recorded in accordance with subsection (f)(1) at least once every 15 minutes while the thermal catalytic oxidizer is operating.

(II) A catalyst activity test shall be performed a minimum of one time per rolling 2-year period.

(C) Control device other than that specified in clause (A) or (B), parameters specific to the control device must be continuously monitored. The parameters shall be recorded in accordance with subsection (f)(1) at least once every 15 minutes while the control device is operating.

(ii) The add-on air pollution control device specified in subparagraph (i) must be operated at a 3-hour average temperature not lower than 50°F below the average temperature demonstrated during the most recent compliant source test approved by the Department.

(iii) The add-on air pollution control device specified in subparagraph (i) must be in operation at all times that the source is operating.

(iv) The negative dryer pressure shall be established during the initial test using an air flow direction indicator, such as a smoke stick or aluminum ribbons, or a differential pressure gauge. Capture efficiency testing and continuous dryer air flow monitoring are not required.

(v) The add-on air pollution control device shall be approved, in writing, by the Department in a plan approval, operating permit or Title V permit prior to use.

(2) *Fountain solution.* The owner or operator of an offset lithographic printing press subject to this section that is required to meet one of the fountain solution VOC limits of subsection (c)(2) shall demonstrate compliance by using one or more of the following methods:

(i) Analysis of a sample of the press-ready (as applied) fountain solution for VOC content using EPA Reference Method 24, *Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings*, codified in 40 CFR Part 60, Appendix A, including updates and revisions.

(ii) Maintenance onsite of MSDS, CPDS or other data provided by the manufacturer of the fountain solution that indicates the VOC content of the press-ready (as applied) fountain solution.

(iii) Calculation of the VOC content of the press-ready (as applied) fountain solution that combines the EPA Reference Method 24 analytical VOC content data for each of the concentrated components or additives used to prepare the press-ready fountain solution.

(A) The VOC content data for each of the concentrated components or additives shall be combined in the proportions in which the concentrated components or additives are mixed to make the batch of press-ready (as applied) fountain solution.

(B) The VOC content shall be calculated one time for each recipe of press-ready (as applied) fountain solution. The recipe name, VOC content for each concentrated component or additive and fountain solution mix ratio shall be recorded in a logbook.

(C) The EPA Reference Method 24 analysis of the concentrated components or additives used to prepare the press-ready (as applied) fountain solution may be performed by the supplier of the components or additives and these results provided to the owner or operator of the affected press.

(iv) Measurement of the recirculating reservoir temperature of a refrigerated press-ready (as applied) fountain solution specified in subsection (c)(2)(i)(B) or (ii)(B) with a thermometer or other temperature detection device capable of reading to 0.5°F (0.28°C) to ensure that the temperature of the refrigerated fountain solution containing alcohol is maintained below 60°F (15.5°C) at all times. The temperature on the thermometer or other tempera-

ture detection device shall be continuously monitored. The temperature reading shall be recorded at least once per operating day to verify that the refrigeration system is operating properly.

(v) Monitoring of the press-ready (as applied) fountain solution for alcohol concentration or VOC content with one or more of the following instruments:

(A) A refractometer or a hydrometer to monitor the fountain solution alcohol concentration. The instrument must:

(I) Be corrected for temperature one time per 8-hour shift.

(II) Have a visual, analog or digital readout with an accuracy of 0.5%.

(III) Be calibrated with a standard solution for the type of alcohol used in the fountain solution.

(B) A conductivity meter to determine the fountain solution VOC content. Reading for the fountain solution must be referenced to the conductivity of the incoming water.

(vi) Another method to determine compliance with the VOC content limits for fountain solutions in subsection (c)(2) if the following requirements are met:

(A) The facility owner or operator submits a request, in writing, to the appropriate regional office of the Department for approval of the alternative method.

(B) The request demonstrates that the alternative method provides results that accurately determine the fountain solution VOC content.

(C) The Department provides prior written approval of the alternative method.

(3) *Cleaning solution.* The owner or operator of an offset lithographic printing press or a letterpress printing press subject to this section shall demonstrate compliance with the VOC content limit or VOC composite partial vapor pressure limit for cleaning solutions in subsection (c)(1) by one or more of the following methods:

(i) Analysis of a sample of press-ready (as applied) cleaning solution for VOC content using EPA Reference Method 24.

(ii) Use of the equation in subsection (j) to calculate the composite partial vapor pressure of the press-ready (as applied) cleaning solution.

(iii) Use of the methods in subsection (k) to determine the VOC composite partial vapor pressure of a single concentrated component or additive used to prepare the press-ready (as applied) cleaning solution.

(iv) Maintenance onsite of MSDS, CPDS or other data provided by the manufacturer of the press-ready (as applied) cleaning solution that indicates the VOC content or the VOC composite partial vapor pressure, or both, of the press-ready (as applied) cleaning solution.

(v) Calculation of the VOC content or the VOC composite partial vapor pressure, or both, of the press-ready (as applied) cleaning solution that combines the EPA Reference Method 24 analytical VOC content data or analytical VOC composite partial vapor pressure data for each of the concentrated components or additives used to prepare the press-ready (as applied) cleaning solution.

(A) The VOC content data or VOC composite partial vapor pressure data for each of the concentrated components or additives shall be combined in the proportions in which the concentrated components or additives are mixed to make the batch of press-ready (as applied) cleaning solution.

(B) The VOC content or VOC composite partial vapor pressure shall be calculated one time for each recipe of press-ready (as applied) cleaning solution. The recipe name, VOC content or VOC composite partial vapor pressure for each concentrated component or additive and cleaning solution mix ratio shall be recorded in a log book.

(C) The EPA Reference Method 24 analysis of the concentrated components or additives used to prepare the press-ready (as applied) cleaning solution may be performed or the VOC composite partial vapor pressure data may be determined by the supplier of the components or additives and these results provided to the owner or operator of the affected press.

(vi) Another method to determine compliance with the VOC content limits for cleaning solutions in subsection (c)(1) if the following requirements are met:

(A) The facility owner or operator submits a request, in writing, to the appropriate regional office of the Department for approval of the alternative method.

(B) The request demonstrates that the alternative method provides results that accurately determine the cleaning solution VOC content or VOC composite partial vapor pressure.

(C) The Department provides prior written approval of the alternative method.

(f) *Recordkeeping requirements.* Beginning January 1, 2015, the owner or operator of a printing press subject to this section shall maintain records sufficient to demonstrate compliance with this section. Records maintained for compliance demonstrations may include purchase, use, production and other records.

(1) An owner or operator using an add-on air pollution control device shall maintain records sufficient to demonstrate compliance with subsection (e), including the following:

(i) Temperature reading of the add-on air pollution control device.

(ii) Maintenance performed on the add-on air pollution control device and monitoring equipment, including the date and type of maintenance.

(iii) Catalyst activity test performed, if applicable.

(2) An owner or operator subject to subsection (a)(1)(i), (ii), (iii) or (iv) shall maintain records of cleaning solutions and fountain solutions used at the facility, including:

(i) The following parameters for each press ready blanket, roller or other cleaning solution:

(A) The name and identification number for the blanket, roller or other cleaning solution.

(B) The VOC content (weight %) or VOC composite partial vapor pressure of each cleaning solution as applied.

(C) The volume used of each cleaning solution as applied, if the owner or operator is using cleaning solutions which exceed the limits in subsection (c)(1)(i).

(D) Records of cleaning solution monitoring as required under subsection (e)(3).

(ii) The following parameters for each press-ready (as applied) fountain solution:

(A) The VOC content (weight %).

(B) Records of fountain solution monitoring as required under subsection (e)(2).

(3) An owner or operator claiming exemption from a VOC control provision of this section based on potential or actual VOC emissions, as applicable, shall maintain records that demonstrate to the Department that the press or facility is exempt.

(4) The owner or operator may group materials into classes using the highest VOC content in any material in a class to represent that class of material.

(g) *Reporting requirements.* Beginning January 1, 2015, the owner or operator of an offset lithographic printing press or a letterpress printing press subject to this section shall meet the following reporting requirements:

(1) The records required under subsection (f) shall be maintained onsite for 2 years unless a longer period is required by a plan approval or operating permit issued under Chapter 127 (relating to construction, modification, reactivation and operation of sources). The records shall be submitted to the Department in an acceptable format upon receipt of a written request.

(2) The owner or operator of an offset lithographic printing press or letterpress printing press required to demonstrate VOC control efficiency in accordance with subsection (d) shall submit reports to the Department in accordance with Chapter 139 (relating to sampling and testing).

(h) *Sampling and testing.*

(1) Sampling and testing shall be performed as follows:

(i) Sampling of an ink, varnish, coating, fountain solution or cleaning solution and testing for the VOC content of the ink, varnish, coating, fountain solution or cleaning solution shall be performed in accordance with the procedures and test methods specified in Chapter 139.

(ii) Sampling and testing of an add-on air pollution control device shall be performed in accordance with the procedures and test methods specified in Chapter 139 and meet one of the following:

(A) Sampling and testing shall be performed no later than 180 days after the compliance date of the press.

(B) Sampling and testing shall have been performed within 5 years prior to January 1, 2015, and previously approved by the Department.

(2) The control efficiency shall be determined using one or more of the following methods, as applicable, subject to prior written approval by the Department. The method used to measure the inlet concentration of VOC may be the same method used to determine the outlet concentration of VOC unless use of the same method is determined to be technically infeasible.

(i) EPA Reference Method 25, *Determination of Total Gaseous Nonmethane Organic Emissions as Carbon*, codified in 40 CFR Part 60, Appendix A, including updates and revisions. EPA Reference Method 25 may be used if the total gaseous nonmethane organic compound concentration is equal to or greater than 50 parts per million by volume, measured as carbon.

(ii) EPA Reference Method 25A, *Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer*, codified in 40 CFR Part 60, Appendix A, including updates and revisions. EPA Reference Method 25A may not be used if the total gaseous nonmethane organic compound concentration at the outlet of the add-on air pollution control device is equal to or greater than 50 parts per million by volume, measured as carbon.

(iii) EPA Reference Method 18, *Measurement of Gaseous Organic Compound Emissions by Gas Chromatography*, codified in 40 CFR Part 60, Appendix A, including updates and revisions. EPA Reference Method 18 may be used if the total gaseous nonmethane organic compound concentration is equal to or greater than 50 parts per million by volume, measured as carbon. EPA Reference Method 18 may be used in conjunction with EPA Reference Method 25A to subtract emissions of exempt VOCs.

(3) Other test methods demonstrated to provide results that are acceptable for purposes of determining compliance with this section may be used if prior approval is obtained in writing from the Department and the EPA.

(i) *Work practice requirements for cleaning activities.*

(1) Except as specified in paragraph (3), beginning January 1, 2015, the owner or operator of an offset lithographic printing press or a letterpress printing press subject to subsection (a)(1)(i), (ii), (iii) or (iv) shall comply with the following work practices for cleaning activities at the facility:

(i) Store all VOC-containing cleaning solutions, waste cleaning solutions and used shop towels in closed containers.

(ii) Ensure that mixing vessels and storage containers used for VOC-containing cleaning solutions, waste cleaning solutions and used shop towels are kept closed at all times, except when depositing or removing these solutions or shop towels.

(iii) Minimize spills of VOC-containing cleaning solutions and waste cleaning solutions and clean up spills immediately.

(iv) Convey VOC-containing cleaning solutions, waste cleaning solutions and used shop towels from one location to another in closed containers or pipes.

(2) The requirements in paragraph (1) apply to the following activities:

(i) Cleaning of a press, including blanket washing, roller washing, plate cleaners, metering roller cleaners, impression cylinder cleaners and rubber rejuvenators.

(ii) Cleaning of press parts, including press parts that have been removed from the press for cleaning.

(iii) Cleaning of ink, coating or adhesive from areas around a press.

(3) The requirements in paragraph (1) do not apply to the following activities:

(i) Cleaning electronic components of a press.

(ii) Cleaning in pre-press (for example, platemaking) operations.

(iii) Cleaning in post-press (for example, binding) operations.

(iv) Using janitorial supplies (for example, detergents or floor cleaners) for general cleaning around a press.

(v) The use of parts washers or cold cleaners at an offset lithographic printing or a letterpress printing facility. The use of parts washers and cold cleaners is regulated under § 129.63 (relating to degreasing operations).

(j) *Composite partial vapor pressure.* The composite partial vapor pressure of organic compounds in cleaning solutions shall be determined by one of the following procedures:

(1) Quantifying the amount of each compound in the blend using gas chromatographic analysis, using an appropriate and current ASTM test method with prior written approval by the Department.

(2) Calculating the composite partial vapor pressure using the following equation:

$$PP_c = \frac{\sum_{i=1}^{n} (W_i)\,(VP_i)/MW_i}{W_w/MW_w + \sum_{e=1}^{k} W_e/MW_e + \sum_{i=1}^{n} W_i/MW_i}$$

Where:

PP_c = VOC composite partial vapor pressure at 20°C, in mm mercury

W_i = Weight of the "i"th VOC compound, in grams

W_w = Weight of water, in grams

W_e = Weight of the "e"th exempt compound, in grams

MW_i = Molecular weight of the "i"th VOC compound, in grams per g-mole, as given in chemical reference literature

MW_w = Molecular weight of water, in grams per g-mole (18 grams per g-mole)

MW_e = Molecular weight of the "e"th exempt compound, in grams per g-mole, as given in chemical reference literature

VP_i = Vapor pressure of the "i"th VOC compound at 20°C, in mm mercury, as determined by subsection (k)

(k) *Determination of vapor pressure of single organic compounds in cleaning solutions.* The vapor pressure of each single component compound shall be determined from one or more of the following:

(1) An appropriate and current ASTM test method with prior written approval by the Department.

(2) The most recent edition of one or more of the following sources:

(i) *Vapour Pressures of Pure Substances*, Boublik, Elsevier Scientific Publishing Company, New York.

(ii) *Perry's Chemical Engineers' Handbook*, Green and Perry, McGraw-Hill Book Company.

(iii) *CRC Handbook of Chemistry and Physics*, CRC Press.

(iv) *Lange's Handbook of Chemistry*, McGraw-Hill Book Company.

(v) Additional sources approved by the Department.

(l) *VOC retention factors and capture efficiency factors.* As specified in subsection (a)(2), if:

(1) A portion of the VOCs contained in the ink or cleaning solution, or both, is retained in the printed web substrate or in the shop towels used for cleaning, the following VOC emission retention factors shall be used, as applicable:

(i) A 20% VOC emission retention factor for a petroleum ink oil-based heatset ink printed on an absorptive substrate, meaning 80% of the petroleum ink oil content is emitted as VOC during the printing process and is available for capture and control by an add-on air pollution control device. The petroleum ink oil content of a heatset ink may be determined from formulation data included on a CPDS or MSDS.

(ii) A 95% VOC emission retention factor for a petroleum ink oil-based non-heatset web or non-heatset sheet-fed ink, meaning 5% of the petroleum ink oil content is emitted as VOC during the printing process and is available for capture and control by an add-on air pollution control device. The petroleum ink oil content of a non-heatset web or non-heatset sheet-fed ink may be determined from formulation data included on a CPDS or MSDS.

(iii) A 100% VOC emission retention factor for vegetable ink oil-based heatset and non-heatset inks.

(iv) A 50% VOC emission retention factor for low VOC composite vapor pressure cleaning solutions in shop towels if both of the following conditions are met:

(A) The VOC composite vapor pressure of the cleaning solution is less than 10mm Hg at 20°C (68°F).

(B) The cleaning solutions and used shop towels are kept in closed containers.

(2) A portion of the VOCs contained in one or more of the ink, fountain solution or automatic blanket wash materials is captured in the press dryer for control by the add-on air pollution control device, the following capture efficiency factors shall be used, as applicable:

(i) A 100% VOC emission capture efficiency for volatilized ink oils for oil-based heatset paste inks and varnishes as specified in paragraph (1) if both of the following conditions are met:

(A) The press dryer is operating at negative pressure relative to the surrounding pressroom.

(B) The air flow is into the press dryer.

(ii) A 70% VOC emission capture efficiency for a fountain solution that contains an alcohol substitute.

(iii) A 40% VOC emission capture efficiency for an automatic blanket wash if the VOC composite vapor pressure of the cleaning solution is less than 10mm Hg at 20°C (68°F).

§ 129.77. Control of emissions from the use or application of adhesives, sealants, primers and solvents.

* * * * *

(k) This section does not apply to the use or application of the following compounds or products:

(1) Adhesives, sealants, adhesive primers or sealant primers being tested or evaluated in a research and development, quality assurance or analytical laboratory, if records are maintained as required in subsections (p) and (q).

(2) Adhesives, sealants, adhesive primers or sealant primers that are subject to other sections in this chapter or Chapter 130 (relating to standards for products).

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CHAPTER 130. STANDARDS FOR PRODUCTS

Subchapter D. ADHESIVES, SEALANTS, PRIMERS AND SOLVENTS

GENERAL PROVISIONS

§ 130.703. Exemptions and exceptions.

(a) This subchapter does not apply to the use, application, sale, supply, offer for sale or manufacture for sale for use in this Commonwealth of the following compounds or products:

(1) Adhesives, sealants, adhesive primers or sealant primers being tested or evaluated in a research and development, quality assurance or analytical laboratory, if records are maintained as required under § 130.704 (relating to recordkeeping requirements).

(2) Adhesives, sealants, adhesive primers or sealant primers that are subject to other sections in this chapter or Chapter 129 (relating to standards for sources).

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[Pa.B. Doc. No. 14-1341. Filed for public inspection June 27, 2014, 9:00 a.m.]

BOARD OF COAL MINE SAFETY

[25 PA. CODE CH. 208]

Requirements for High-Voltage Continuous Mining Machines

The Board of Coal Mine Safety (Board) adds §§ 208.81—208.93 (relating to high-voltage continuous mining machine standards for underground coal mines). The final-form rulemaking, with one exception, conforms Commonwealth regulations to Federal regulations, thereby establishing standards for the use of high-voltage continuous mining machines of up to 2,400 volts in underground bituminous coal mines.

Sections 106 and 106.1 of the Bituminous Coal Mine Safety Act (BCMSA) (52 P. S. §§ 690-106 and 690-106.1) authorize the adoption of regulations implementing the BCMSA, including additional safety standards. The Board is authorized to promulgate regulations that are necessary or appropriate to implement the requirements of the BCMSA and to protect the health, safety and welfare of miners and other individuals in and about mines.

This final-form rulemaking was given under Board order at its meeting of March 11, 2014.

A. *Effective Date*

This final-form rulemaking will be effective upon publication in the *Pennsylvania Bulletin*.

B. *Contact Persons*

For further information, contact Joe Sbaffoni, Director, Bureau of Mine Safety, Fayette County Health Center, 100 New Salem Road, Room 167, Uniontown PA 15401, (724) 439-7469, jsbaffoni@pa.gov; or Andrew Jenkins, Assistant Counsel, Bureau of Regulatory Counsel, Office of Chief Counsel, Rachel Carson State Office Building, 9th Floor, P.O. Box 8464, Harrisburg, PA 17105-8464, (717) 787-9376, andjenkins@pa.gov.

C. *Statutory Authority*

The final-form rulemaking is authorized under sections 106 and 106.1 of the BCMSA, which grant the Board the authority to adopt regulations implementing the BCMSA, including additional safety standards. The Board is authorized to promulgate regulations that are necessary or appropriate to implement the BCMSA and to protect the health, safety and welfare of miners and other individuals in and about mines.

D. *Background and Purpose*

This final-form rulemaking establishes electrical safety standards for the installation, use and maintenance of high-voltage continuous mining machines in underground bituminous coal mines.

On April 6, 2010, the Federal Mine Safety and Health Administration (MSHA) issued a final rulemaking addressing electrical safety standards for the installation, use and maintenance of high-voltage continuous mining machines in underground coal mines. See 75 FR 17529 (April 6, 2010). Previously, the MSHA's standards did not specifically address high-voltage continuous mining machines because those machines were not available when the Federal standards were developed. To use high-voltage equipment in underground mines, the MSHA required mine operators to submit a Petition for Modification (PFM), as provided for under section 101(c) of the Federal Mine Safety and Health Act of 1977 (30 U.S.C.A. § 811(c)). Since 1997, the MSHA has granted 52 PFMs to allow mine operators to use high-voltage continuous mining machines. The final rulemaking issued by the MSHA includes most of the requirements that were granted in the PFMs and new requirements to enhance safety associated with the operation of continuous mining machines, including provisions to protect against fires, explosions and shock hazards. The final rulemaking became effective on June 7, 2010, and superseded all PFMs issued prior to the effective date of the final rulemaking.

In developing the final rulemaking, the MSHA considered the experience of mine operators who had been using high-voltage continuous mining machines in underground coal mines. The MSHA also considered the comments, hearing testimony and its previous experience in reviewing and issuing PFMs in its development of the final rulemaking. The final Federal rulemaking is codified in 30 CFR 75.823—75.834 and 75.1002 and establishes mandatory electrical safety standards for the installation of high-voltage continuous mining machines, electrical and mechanical protection of the equipment, handling of trailing cables and procedures for performing electrical work. In promulgating the final rulemaking, the MSHA attested that the regulatory requirements are technologically and economically feasible and will reduce the potential for electrical-related accidents, thereby offering greater protection for underground coal miners against electrical shock, cable overheating, fire hazards, unsafe work and repair practices, and back injuries and other sprains caused by handling trailing cables.

On July 7, 2008, the General Assembly enacted the BCMSA. The BCMSA is the first significant update of the Commonwealth's underground bituminous coal mine safety laws since 1961. See section 103(a) of the BCMSA (52 P. S. § 690-103(a)). One of the significant changes made by the BCMSA is the authority to promulgate regulations for mine safety. The General Assembly established the Board to promulgate regulations. Under section 106 of the BCMSA, this seven-member board consists of the Secretary of the Department of Environmental Protection (Department) as Chairperson, three members representing the viewpoint of mine workers and three members representing the viewpoint of underground bituminous coal mine operators. Section 106.1(a) of the BCMSA contains broad rulemaking authority to adopt

regulations that are necessary or appropriate to implement the requirements of the BCMSA and to protect the health, safety and welfare of miners and other individuals in and about mines. Moreover, the Board may promulgate regulations consistent with Federal standards under section 106.1(c) of the BCMSA.

After learning of the revised MSHA standards concerning high-voltage continuous mining machines in underground coal mines, the Board determined it should promulgate an identical requirement with the exception of provisions concerning the mandatory distance between a spliced high voltage trailing cable and a continuous mining machine. Under section 316(d)(6) of the BCMSA (52 P. S. § 690-316(d)(6)), spliced trailing cables are prohibited within 50 feet of a continuous mining machine. In contrast, 30 CFR 75.830(b)(1) (relating to splicing and repair of trailing cables) prohibits the splicing of high-voltage trailing cables within 35 feet of a continuous mining machine. Because Commonwealth law provides a more protective standard that enhances miner safety, the more stringent State requirement is included in the final-form rulemaking. The Board developed the final-form rulemaking to, among other things, obtain independent authority necessary to implement the Federal regulations.

Revising electrical safety standards for the use, installation and maintenance of high-voltage continuous mining machines plays an important role in enhancing safety protection against fires, explosions and shock hazards in underground bituminous coal mines. In addition, it facilitates the use of advanced equipment designs. By adopting the Federal MSHA regulations, with certain exceptions, the Board believes it will enhance the Department's ability to ensure the safety of miners by reducing the potential or severity of fires, explosions and shock hazards in bituminous coal mines, and allow the Department to have independent authority to enforce the Federal requirements.

E. *Summary of Comments and Responses to the Proposed Rulemaking*

The Board did not receive comments from the public or from the Independent Regulatory Review Commission (IRRC) on this final-form rulemaking.

F. *Summary of Final Regulatory Requirements*

The final-form rulemaking adds §§ 208.81—208.93 to establish requirements for the use, installation and maintenance of high-voltage continuous mining machines in underground bituminous coal mines.

Section 208.81 (relating to scope) incorporates by reference 30 CFR 75.823 (relating to scope), which provides that the standard addresses requirements for the use of high-voltage continuous mining machines of up to 2,400 volts in underground coal mines.

Section 208.82 (relating to electrical protection) incorporates by reference 30 CFR 75.824 (relating to electrical protection), which establishes the electrical protection requirements for high-voltage continuous mining machines including requirements associated with the use of an adequate circuit-interrupting device capable of providing short-circuit, overload, ground-fault and under-voltage protection.

Section 208.83 (relating to power centers) incorporates by reference 30 CFR 75.825 (relating to power centers). The Federal provisions set forth the requirements for power centers that supply high-voltage continuous mining machines, including provisions for the disconnecting switches and devices, barriers and covers, interlocks, emergency stop switches, grounding sticks and caution labels.

Section 208.84 (relating to high-voltage trailing cables) incorporates by reference 30 CFR 75.826 (relating to high-voltage trailing cables). The Federal regulation defines the requirements that high-voltage trailing cables must meet, including compliance with existing design requirements in 30 CFR 18.35 (relating to portable (trailing) cables and cords) and the approval requirements of high-voltage continuous mining machines.

Section 208.85 (relating to guarding of trailing cables) incorporates by reference 30 CFR 75.827 (relating to guarding of trailing cables). Section 75.827 of 30 CFR establishes the requirements for guarding trailing cables, including the location where the cables must be guarded, the materials (nonconductive flame-resistant material or grounded metal) to be used in constructing the guarding and the requirements applicable to situations when equipment must cross any portion of the cables.

Section 208.86 (relating to trailing cable pulling) incorporates by reference 30 CFR 75.828 (relating to trailing cable pulling). Section 75.828 of 30 CFR establishes the requirements to be followed when the trailing cables are to be pulled by any equipment other than the continuous mining machine.

Section 208.87 (relating to tramming continuous mining machines in and out of the mine and from section to section) incorporates by reference 30 CFR 75.829 (relating to tramming continuous mining machines in and out of the mine and from section to section). Section 75.829 of 30 CFR includes requirements associated with tramming continuous mining machines in and out of the mine or from one section to another and testing required prior to tramming.

Section 208.88 (relating to splicing and repair of trailing cables) incorporates by reference 30 CFR 75.830 with the exception of requirements in 30 CFR 75.830(b)(1). Section 75.830 of 30 CFR establishes the requirements for performing splices and repairs of trailing cables and the manner in which the trailing cable shall be spliced or repaired to ensure that miners are not exposed to shock and burn hazards. Concerning 30 CFR 75.830(b)(1), which requires a mandatory distance of 35 feet between a spliced high voltage trailing cable and a continuous mining machine, the Board determined that the Federal requirement was not as protective as requirements established under the BCMSA. Therefore, § 208.88(b)(1) is consistent with the BCMSA and establishes that splicing of high-voltage trailing cables within 50 feet of a continuous mining machine is prohibited.

Section 208.89 (relating to electrical work; troubleshooting and testing) incorporates by reference 30 CFR 75.831 (relating to electrical work; troubleshooting and testing).

Section 208.90 (relating to frequency of examinations; recordkeeping) incorporates by reference 30 CFR 75.832 (relating to frequency of examinations; recordkeeping). Section 75.832 of 30 CFR specifies the frequency of testing certain equipment and circuits and the requirements for creating and maintaining adequate records.

Section 208.91 (relating to handling high-voltage trailing cables) incorporates by reference 30 CFR 75.833 (relating to handling high-voltage trailing cables). Section 75.833 of 30 CFR sets forth the requirements for handling energized trailing cables including provisions that prohibit handling energized trailing cables unless high-voltage insulating gloves or insulating cable handling tools are used.

Section 208.92 (relating to training) incorporates by reference 30 CFR 75.834 (relating to training). Section 75.834 of 30 CFR requires that miners who perform maintenance on high-voltage continuous mining machines be trained in high-voltage safety, testing and repair, and maintenance procedures. Training provisions are also included for miners who work in the vicinity of high-voltage continuous mining machines or who move the high-voltage equipment or cables.

Section 208.93 (relating to installation of electric equipment and conductors; permissibility) incorporates by reference 30 CFR 75.1002 (relating to installation of electric equipment and conductors; permissibility). Section 75.1002 of 30 CFR addresses requirements for conductors and cables used in or in by the last open crosscut, as well as electrical equipment, conductors and cables used within 150 feet of pillar workings and allows the use of shielded, high-voltage cables that supply power to permissible continuous mining machines in underground coal mines.

G. *Benefits and Costs*

Benefits

The final-form rulemaking will reduce the potential for electrical-related fatalities and injuries or loss of property when using high-voltage continuous mining machines in underground bituminous coal mine operations in this Commonwealth. The design and work practice requirements included in this final-form rulemaking will result in greater protections for underground bituminous coal mine operators, including measures to reduce electrical shock, cable overheating, fire hazards, unsafe work and repair practices, and back injuries and other sprains caused by handling trailing cables. In addition, the final-form rulemaking facilitates the use of more advanced equipment designs. The final-form rulemaking incorporates, with certain exceptions, the Federal regulations into the Commonwealth's regulations, thus enhancing the Commonwealth's mine safety program and its reputation for excellence.

Compliance Costs

The final-form rulemaking will not add any compliance costs to those already existing, as Federal regulations are already in place in this regard. This final-form rulemaking imposes standards that the MSHA has already imposed and with which underground bituminous coal mines in this Commonwealth shall comply.

Compliance Assistance Plan

The Department plans to educate and assist the public and regulated community in understanding the final-form rulemaking and how to comply with it. This will be accomplished through the Department's ongoing compliance assistance program.

Paperwork Requirements

The final-form rulemaking will not increase the paperwork that is already generated because of the existing Federal regulations that are already in place.

H. *Sunset Review*

These regulations will be reviewed in accordance with the sunset review schedule published by the Department to determine whether they effectively fulfill the goals for which they were intended.

I. *Regulatory Review*

Under section 5(a) of the Regulatory Review Act (71 P. S. § 745.5(a)), on September 25, 2013, the Department submitted a copy of the notice of proposed rulemaking, published at 43 Pa.B. 5819 (October 5, 2013), to IRRC and the Chairpersons of the Senate and House Environmental Resources and Energy Committee for review and comment.

Under section 5(c) of the Regulatory Review Act, IRRC and the House and Senate Committees were provided with copies of the comments received during the public comment period, as well as other documents when requested. In preparing the final-form rulemaking, the Department has considered all comments from IRRC, the House and Senate Committees and the public.

Under section 5.1(j.2) of the Regulatory Review Act (71 P. S. § 745.5a(j.2)), on May 21, 2014, the final-form rulemaking was deemed approved by the House and Senate Committees. Under section 5(g) of the Regulatory Review Act, the final-form rulemaking was deemed approved by IRRC effective May 21, 2014.

J. *Findings*

The Board finds that:

(1) Public notice of proposed rulemaking was given under sections 201 and 202 of the act of July 31, 1968 (P. L. 769, No. 240) (45 P. S. §§ 1201 and 1202) and regulations promulgated thereunder, 1 Pa. Code §§ 7.1 and 7.2.

(2) A public comment period was provided as required by law and no comments were submitted.

(3) This final-form rulemaking does not enlarge the purpose of the proposed rulemaking published at 43 Pa.B. 5819.

(4) These regulations are necessary and appropriate for administration and enforcement of the authorizing acts identified in section C of this preamble.

K. *Order*

The Board, acting under the authorizing statutes, orders that:

(1) The regulations of the Department, 25 Pa. Code Chapter 208, are amended by adding §§ 208.81—208.93 to read as set forth at 43 Pa.B. 5819.

(2) The Chairperson of the Board shall submit this order and 43 Pa.B. 5819 to the Office of General Counsel and the Office of Attorney General for review and approval as to legality and form as required by law.

(3) The Chairperson of the Board shall submit this order and 43 Pa.B. 5819 to IRRC and the Senate and House Environmental Resources and Energy Committees as required by the Regulatory Review Act.

(4) The Chairperson of the Board shall certify this order and 43 Pa.B. 5819 and deposit them with the Legislative Reference Bureau, as required by law.

(5) This order shall take effect immediately.

E. CHRISTOPHER ABRUZZO,
Chairperson

(*Editor's Note*: For the text of the order of the Independent Regulatory Review Commission relating to this document, see 44 Pa.B. 3470 (June 7, 2014).)

Fiscal Note: Fiscal Note 7-482 remains valid for the final adoption of the subject regulations.

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