Chapter NR 466

NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR PRINTING AND FLEXIBLE SUBSTRATE SURFACE COATING PROCESSES

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Subchapter I — Printing and Publishing

NR 466.01 Applicability; purpose. (1) APPLICABILITY. (a) This chapter applies to all of the following:

1. Each facility that is a major source of hazardous air pollutants at which publication rotogravure, product and packaging rotogravure, or wide−web flexographic printing presses are operated.

2. Each facility at which publication rotogravure, product and packaging rotogravure, or wide−web flexographic printing presses are operated for which the owner or operator, for purposes of establishing the facility to be an area source with respect to this chapter, chooses to commit to, and meets the following criteria:

a. Use less than 9.1 Mg (10 tons) per each rolling 12−month period of each HAP at the facility, including materials used for source categories or purposes other than printing and publishing.

b. Use less than 22.7 Mg (25 tons) per each rolling 12−month period of any combination of HAPs at the facility, including materials used for source categories or purposes other than printing and publishing.

(b) Each facility for which the owner or operator chooses to commit to and meets the criteria in par. (a) 2. shall be considered an area source, and is subject only to the provisions of ss. NR 466.11 (4) and 466.12 (2) (a).

(c) Each facility for which the owner or operator chooses to commit to and meets the criteria in par. (a) 2. may exclude, for the purpose of determining compliance with the usage restrictions in par. (a) 2., material used in routine janitorial or facility grounds maintenance, personal uses by employees or other persons, the use of products for the purpose of maintaining electric, propane, gasoline and diesel powered motor vehicles operated by the facility, and the use of HAP contained in intake water, used for processing or noncontact cooling, or intake air, used either as compressed air or for combustion.

(d) Each facility for which the owner or operator chooses to commit to and meets the criteria in par. (a) 2. to become an area source, but subsequently exceeds either of the thresholds in par. (a) 2. for any rolling 12−month period, without first obtaining and complying with other limits that keep its potential to emit HAP below major source levels, shall be considered in violation of its commitment for that 12−month period and shall be considered a major source of HAP beginning the first month after the end of the 12−month period in which either of the HAP−use thresholds was exceeded. As a major source of HAP, each facility is subject to this chapter as provided under par. (a) 1. and is no longer eligible to use the provisions of par. (a) 2., even if in subsequent 12−month periods the facility uses less HAP than the thresholds in par. (a) 2.

(e) An owner or operator of an affected source subject to par. (a) 2. who chooses to no longer be subject to par. (a) 2. shall notify the department of the change. If, by no longer being subject to par. (a) 2., the facility at which the affected source is located becomes a major source, the owner or operator shall continue to comply with the HAP usage provisions of par. (a) 2. until the source is in compliance with all relevant requirements for a new MACT source or an existing source under this chapter.

(f) Nothing in this subsection is intended to preclude a facility from establishing area source status by limiting its potential to emit through other appropriate mechanisms.

(g) This chapter does not apply to research or laboratory equipment.

(2) PURPOSE. This chapter is adopted under ss. 285.27 (2) and 285.65, Stats., to establish emission standards for hazardous air pollutants for the printing and publishing industry in order to protect air quality.

Note: This chapter is based on the federal regulations contained in 40 CFR part 63 Subpart KK, created May 30, 1996.

History: Cr. Register, March, 2000, No. 531, eff. 4−1−00.

NR 466.015 Designation of affected sources. (1) The affected sources subject to this chapter are all of the following:

(a) All of the publication rotogravure presses and all associated equipment, including proof presses, cylinder and parts cleaners, ink and solvent mixing and storage equipment, and solvent recovery equipment at a facility.

(b) All of the product and packaging rotogravure or wide−web flexographic printing presses at a facility plus any other equipment at that facility which the owner or operator chooses to include in accordance with sub. (2), except any of the following:

1. Proof presses.

2. Any product and packaging rotogravure or wide−web flexographic press which is used primarily for coating, laminating or other operations which the owner or operator chooses to exclude, provided that the owner or operator maintains records as required under s. NR 466.11 (6), and the sum of the total mass of inks, coatings, varnishes, adhesives, primers, solvents, thinners, reducers and other materials applied by the press using product and packaging rotogravure print stations and wide−web flexographic print stations in each month never exceeds 5% by weight of the total mass of inks, coatings, varnishes, adhesives, primers, solvents, thinners, reducers and other materials applied by the press in that month, including all inboard and outboard stations.

(2) The owner or operator of an affected source, as defined in sub. (1) (b), may elect to include in that affected source stand−alone coating equipment subject to all of the following provisions:

(a) All stand−alone coating equipment which is located at the facility, and which is described by any of the following, is included in the affected source:

1. The stand−alone coating equipment and one or more product and packaging rotogravure or wide−web flexographic presses are used to apply solids−containing materials to the same web or substrate.

2. The stand−alone coating equipment and one or more product and packaging rotogravure or wide−web flexographic presses apply a common solids−containing material.

3. A common control device is used to control organic HAP emissions from the stand−alone coating equipment and from one or more product and packaging rotogravure or wide−web flexographic printing presses.

(b) No product and packaging rotogravure or wide−web flexographic presses are excluded from the affected source under the provisions of sub. (1) (b) 2.

(3) Each product and packaging rotogravure or wide−web flexographic printing affected source at a facility that is a major source of HAP that complies with either of the following criteria on and after the applicable compliance date as specified in s. NR 466.08 is subject only to the requirements of ss. NR 466.11 (5) and 466.12 (2) (a):

(a) The owner or operator of the source applies no more than 500 kg (1102 pounds) per month, for every month, of inks, coatings, varnishes, adhesives, primers, solvents, thinners, reducers and other materials on product and packaging rotogravure or wide−web flexographic printing presses.

(b) The owner or operator of the source applies no more than 400 kg (882 pounds) per month, for every month, of organic HAP on product and packaging rotogravure or wide−web flexographic printing presses.

(4) Each product and packaging rotogravure or wide−web flexographic printing affected source at a facility that is a major source of HAP that does not comply with either criterion in sub. (3) in any month after the applicable compliance date as specified in s. NR 466.08 is, starting with that month, subject to all relevant requirements of this chapter and is no longer eligible to use the provisions of sub. (3), even if in subsequent months the affected source meets either of the criteria in sub. (3).

History: Cr. Register, March, 2000, No. 531, eff. 4−1−00.

NR 466.02 Definitions. For terms not defined in this section, the definitions contained in chs. NR 400 and 460 apply to the terms used in this chapter, with definitions in ch. NR 460 taking priority over definitions in ch. NR 400. If this section defines a term which is also defined in ch. NR 400 or 460, the definition in this section applies in this chapter.

(1) "Always−controlled work station" means a work station associated with a dryer from which the exhaust is delivered to a control device, with no provision for the dryer exhaust to bypass the control device. Sampling lines for analyzers and relief valves needed for safety purposes are not considered bypass lines.

(2) "Car−seal" means a seal that is placed on a device that is used to change the position of a valve or damper, for example, from open to closed, in a way that the position of the valve or damper cannot be changed without breaking the seal.

(3) "Certified product data sheet" or "CPDS" means documentation furnished by suppliers of inks, coatings, varnishes, adhesives, primers, solvents and other materials or by an outside laboratory that provides the organic HAP content of these materials, by weight, measured using Method 311 in 40 CFR Part 63, Appendix A, incorporated by reference in s. NR 484.04, or an equivalent or alternative method, or formulation data as provided for in s. NR 466.09 (2), and the solids content of these materials, by weight, determined in accordance with s. NR 466.09 (3).

(4) "Coating operation" means the application of a uniform layer of material across the entire width of a substrate.

(5) "Coating station" means a work station on which a coating operation is conducted.

(6) "Control device efficiency" means the ratio of organic HAP emissions recovered or destroyed by a control device to the total HAP emissions that are introduced into the control device, expressed as a percentage.

(7) "Facility" means all contiguous or adjoining property that is under common ownership or control, including properties that are separated only by a road or other public right−of−way.

(8) "Flexographic press" means an unwind or feed section, a series of individual work stations, one or more of which is a flexographic print station, any dryers, including interstage dryers and overhead tunnel dryers, associated with the work stations, and a rewind, stack or collection station. The work stations may be oriented vertically, horizontally or around the circumference of a single large impression cylinder. Inboard and outboard work stations, including those employing any other technology, such as rotogravure, are included if they are capable of printing or coating on the same substrate.

(9) "Flexographic print station" means a work station on which a flexographic printing operation is conducted. A flexographic print station includes a printing plate which is an image carrier made of rubber or other elastomeric material on which the image, type and art, to be printed is raised above the printing plate.

(10) "HAP applied" means the organic HAP content of all inks, coatings, varnishes, adhesives, primers, solvent and other materials applied to a substrate by a product and packaging rotogravure or wide−web flexographic printing affected source.

(12) "HAP used" means the organic HAP applied by a publication rotogravure printing affected source, including all organic HAP used for cleaning, parts washing, proof presses and all organic HAP emitted during tank loading, ink mixing and storage.

(13) "Intermittently−controllable work station" means a work station associated with a dryer with provisions for the dryer exhaust to be delivered to or diverted from a control device depending on the position of a valve or damper.

(14) "Month" means a calendar month or a prespecified period of 28 days to 35 days.

(15) "Never−controlled work station" means a work station which is not equipped with provisions by which any emissions, including those in the exhaust from any associated dryer, may be delivered to a control device.

(16) "Overall organic HAP control efficiency" means the total efficiency of a control system, determined either by the product of the capture efficiency and the control device efficiency or a liquid−liquid material balance.

(17) "Print station" means a work station on which a printing operation is conducted.

(18) "Printing operation" means the formation of words, designs and pictures on a substrate other than fabric through the application of material to that substrate.

(19) "Product and packaging rotogravure printing" means the production, on a rotogravure press, of any printed substrate not otherwise defined as publication rotogravure printing. This includes, but is not limited to, folding cartons, flexible packaging, labels and wrappers, gift wraps, wall and floor coverings, upholstery, decorative laminates and tissue products.

(20) "Proof press" means any device used only to check the quality of the image formation of rotogravure cylinders or flexographic plates, which prints only non−saleable items.

(21) "Publication rotogravure printing" means the production, on a rotogravure press, of any of the following saleable paper products:

(a) Catalogues, including mail order and premium.

(b) Direct mail advertisements, including circulars, letters, pamphlets, cards, and printed envelopes.

(c) Display advertisements, including general posters, outdoor advertisements, car cards, window posters; counter and floor displays; and point of purchase and other printed display material.

(d) Magazines.

(e) Miscellaneous advertisements, including brochures, pamphlets, catalog sheets, circular folders, announcements, package inserts, book jackets, market circulars, magazine inserts and shopping news.

(f) Newspapers, magazine and comic supplements for newspapers, and preprinted newspaper inserts, including hi−fi and spectacolor rolls and sections.

(g) Periodicals.

(h) Telephone and other directories, including business reference services.

(22) "Research or laboratory equipment" means any equipment for which the primary purpose is to conduct research and development into new processes and products, where the equipment is operated under the close supervision of technically trained personnel and is not engaged in the manufacture of products for commercial sale in commerce, except in a de minimis manner.

(23) "Rotogravure press" means an unwind or feed section, a series of one or more work stations, one or more of which is a rotogravure print station, any dryers associated with the work stations, and a rewind, stack or collection section. Inboard and outboard work stations including those employing any other technology, such as flexography, are included if they are capable of printing or coating on the same substrate.

(24) "Rotogravure print station" means a work station on which a rotogravure printing operation is conducted. A rotogravure print station includes both a cylinder on which the image, type and art, to be printed is etched or engraved below the surface of the cylinder, and an ink supply.

(25) "Stand−alone coating equipment" means an unwind or feed section, a series of one or more coating stations and any associated dryers, and a rewind, stack or collection section that is not part of a product and packaging rotogravure or wide−web flexographic press, but is used to conduct one or more coating operations on a substrate. Stand−alone coating equipment may or may not do any of the following:

(a) Process substrate that is also processed by a product and packaging rotogravure or wide−web flexographic press.

(b) Apply solids−containing materials that are also applied by a product and packaging rotogravure or wide−web flexographic press.

(c) Utilize a control device that is also utilized by a product and packaging rotogravure or wide−web flexographic press.

Note: Stand−alone coating equipment is sometimes referred to as "off−line" coating equipment.

(26) "Wide−web flexographic press" means a flexographic press capable of printing substrates greater than 18 inches in width.

(27) "Work station" means a unit on a rotogravure or wide−web flexographic press where material is deposited onto a substrate.

History: Cr. Register, March, 2000, No. 531, eff. 4−1−00.

NR 466.03 Symbols. The symbols used in equations in this chapter have the following meanings:

(1) C_{ahi} is the monthly average, as−applied, organic HAP content of solids−containing material, i, expressed as a weight−fraction, in kg/kg (lb/lb).

(2) C_{asi} is the monthly average, as applied, solids content of solids−containing material, i, expressed as a weight−fraction, in kg/kg (lb/lb).

(3) C_{hi} is the organic HAP content of solids−containing material, i, expressed as a weight−fraction, in kg/kg (lb/lb).

(4) C_{hij} is the organic HAP content of solvent j, added to solids−containing material i, expressed as a weight−fraction, in kg/kg (lb/lb).

(5) C_{hj} is the organic HAP content of solvent j, expressed as a weight−fraction, in kg/kg (lb/lb).

(6) C_i is the organic volatile matter concentration in ppm, dry basis, of compound i in the vent gas, as determined by Method 25 or Method 25A in 40 CFR Part 60, Appendix A, incorporated by reference in s. NR 484.04.

(7) C_{si} is the solids content of solids−containing material, i, expressed as a weight−fraction, in kg/kg (lb/lb).

(8) C_{vi} is the volatile matter content of solids−containing material, i, expressed as a weight−fraction, in kg/kg (lb/lb).

(9) E is the organic volatile matter control efficiency of the control device, expressed as a percent.

(10) F is the organic volatile matter capture efficiency of the capture system as a percent.

(11) G_i is the mass fraction of each solids−containing material, i, which was applied at 20% by weight or greater solids content, on an as−applied basis, in kg/kg (lb/lb).

(12) H is the total monthly organic HAP applied, in kg (lb).

(13) H_a is the monthly allowable organic HAP emissions, in kg (lb).

(14) H_L is the monthly average, as−applied, organic HAP content of all solids−containing materials applied at less than 0.04 kg organic HAP per kg of material applied (0.04 lb/lb), in kg/kg (lb/lb).

(15) H_s is the monthly average, as−applied, organic HAP to solids ratio, kg organic HAP/kg solids applied (lb/lb).

(16) H_{si} is the as−applied, organic HAP to solids ratio of material i.

(17) L is the mass organic HAP emission rate per mass of solids applied, in kg/kg (lb/lb).

(18) M_{Bi} is the sum of the mass of solids−containing material, i, applied on intermittently−controllable work stations operating in bypass mode and the mass of solids−containing material, i, applied on never−controlled work stations, in a month, in kg (lb).

(19) M_{Bj} is the sum of the mass of solvent, thinner, reducer, diluent or other non−solids−containing material, j, applied on intermittently−controllable work stations operating in bypass mode and the mass of solvent, thinner, reducer, diluent or other non−solids−containing material, j, applied on never−controlled work stations, in a month, in kg (lb).

(20) M_{Ci} is the sum of the mass of solids−containing material, i, applied on intermittently−controllable work stations operating in controlled mode and the mass of solids−containing material, i, applied on always−controlled work stations, in a month, in kg (lb).

(21) M_{Cj} is the sum of the mass of solvent, thinner, reducer, diluent or other non−solids−containing material, j, applied on intermittently−controllable work stations operating in controlled mode and the mass of solvent, thinner, reducer, diluent or other non−solids−containing material, j, applied on always−controlled work stations in a month, in kg (lb).

(22) M_f is the total organic volatile matter mass flow rate, in kg/hr (lb/hr).

(23) M_{fi} is the organic volatile matter mass flow rate at the inlet to the control device, in kg/hr (lb/hr).

(24) M_{fo} is the organic volatile matter mass flow rate at the outlet of the control device, in kg/hr (lb/hr).

(25) M_{hu} is the mass of organic HAP used in a month, in kg (lb).

(26) M_i is the mass of solids−containing material, i, applied in a month, in kg (lb).

(27) M_{ij} is the mass of solvent, thinner, reducer, diluent or other non−solids−containing material, j, added to solids−containing material, i, in a month, in kg (lb).

(28) M_j is the mass of solvent, thinner, reducer, diluent or other non−solids−containing material, j, applied in a month, in kg (lb).

(29) M_{Lj} is the mass of solvent, thinner, reducer, diluent or other non−solids−containing material, j, added to solids−containing materials which were applied at less than 20% by weight solids content, on an as−applied basis, in a month, in kg (lb).

(30) M_{vr} is the mass of volatile matter recovered in a month, in kg (lb).

(31) M_{vu} is the mass of volatile matter, including water, used in a month, in kg (lb).

(32) MW_i is the molecular weight of compound i in the vent gas, kg/kg−mol.

(33) n is the number of organic compounds in the vent gas.

(34) p is the number of different inks, coatings, varnishes, adhesives, primers and other solids−containing materials applied in a month.

(35) q is the number of different solvents, thinners, reducers, diluents or other non−solids−containing materials applied in a month.

(36) Q_{sd} is the volumetric flow rate of gases entering or exiting the control device in dscm/hr, as determined by Method 2 in 40 CFR Part 60, Appendix A, incorporated by reference in s. NR 484.04.

(37) R is the overall organic HAP control efficiency as a percent.

(38) R_e is the overall effective organic HAP control efficiency for publication rotogravure as a percent.

(39) R_v is the organic volatile matter collection and recovery efficiency as a percent.

(40) S is the mass organic HAP emission rate per mass of material applied, in kg/kg (lb/lb).

(41) 0.0416 is the conversion factor for molar volume, kg−mol/m^3, at standard conditions.

History: Cr. Register, March, 2000, No. 531, eff. 4−1−00.

NR 466.05 Standards: general. General provisions of ch. NR 460 apply to owners and operators of affected sources subject to this chapter as indicated in ch. NR 460 Appendix KK.

History: Cr. Register, March, 2000, No. 531, eff. 4−1−00.

NR 466.06 Standards: publication rotogravure printing. (1) COMPLIANCE DATES. Each owner or operator of any publication rotogravure printing affected source that is subject to the requirements of this chapter shall comply with this section on and after the compliance dates as specified in s. NR 466.08.

(2) EMISSION LIMITATION. The owner or operator of each publication rotogravure affected source shall limit organic HAP emissions to no more than 8% of the total volatile matter used each month.

(3) COMPLIANCE METHODS. The emission limitation in sub. (2) shall be achieved by any of the following methods:

(a) Overall control of at least 92% of organic HAP used.

(b) Substitution of non−HAP materials for organic HAP.

(c) A combination of capture and control technologies and substitution of materials.

(4) COMPLIANCE DEMONSTRATION. (a) *Solvent recovery.* Each owner or operator using a solvent recovery device to control emissions shall demonstrate compliance by showing that the HAP emission limitation is achieved by doing either of the following:

1. Perform a liquid−liquid material balance for each month according to the following procedures:

a. Measure the mass of each ink, coating, varnish, adhesive, primer, solvent and other material used by the affected source during the month.

b. Determine the organic HAP content of each ink, coating, varnish, adhesive, primer, solvent and other material used by the affected source during the month following the procedure in s. NR 466.09 (2) (a).

c. Determine the volatile matter content, including water, of each ink, coating, varnish, adhesive, primer, solvent and other material used by the affected source during the month following the procedure in s. NR 466.09 (3) (a).

d. Install, calibrate, maintain and operate, according to the manufacturer's specifications, a device that indicates the cumulative amount of volatile matter recovered by the solvent recovery device on a monthly basis. The device shall be initially certified by the manufacturer to be accurate to within ±2.0%.

e. Measure the amount of volatile matter recovered for the month.

f. Calculate the overall effective organic HAP control efficiency (R_e) for the month using Equation 1. For the purposes of this calculation, the mass fraction of organic HAP present in the recovered volatile matter is assumed to be equal to the mass fraction of organic HAP present in the volatile matter used.

$$R_e = (100)\ \frac{M_{vu} - M_{hu} + [\,(M_{vr})(M_{hu}/M_{vu})\,]}{M_{vu}}$$

(Equation 1)

2. Use continuous emission monitors, conduct an initial performance test of capture efficiency, and continuously monitor a site specific operating parameter to assure capture efficiency as specified in the following procedures:

a. Install continuous emission monitors to determine the total organic volatile matter mass flow rate at both the inlet to and the outlet from the control device, and calculate the percent efficiency (E) of the control device for each month.

b. Determine the percent capture efficiency (F) of the capture system according to s. NR 466.09 (5).

c. Calculate the overall effective organic HAP control efficiency (R_e) achieved for each month using Equation 2.

$$R_e = (100)\ \frac{M_{vu} - M_{hu} + [(E/100)\,(F/100)\,M_{hu}]}{M_{vu}}$$

(Equation 2)

d. Install, calibrate, operate and maintain the instrumentation necessary to measure continuously the site−specific operating parameter established in accordance with s. NR 466.10 (6) whenever a publication rotogravure printing press is operated.

e. Operate the capture device at an average value greater than, or less than, as appropriate, the operating parameter value established in accordance with s. NR 466.10 (6) for each 3−hour period.

(b) *Oxidation.* Each owner or operator using an oxidizer to control emissions shall demonstrate compliance by showing that the HAP emission limitation is achieved by doing either of the following:

1. Demonstrate initial compliance through performance tests and continuing compliance through continuous monitoring according to the following procedures:

a. Determine the oxidizer destruction efficiency (E) using the procedure in s. NR 466.09 (4).

b. Determine the capture efficiency (F) using the procedure in s. NR 466.09 (5).

c. Calculate the overall effective organic HAP control efficiency (R_e) achieved using Equation 2 in par. (a) 2. c.

d. Continuously monitor an appropriate oxidizer operating parameter in accordance with s. NR 466.10 (5), and continuously monitor an appropriate capture system monitoring parameter in accordance with s. NR 466.10 (6).

e. Operate the capture device at an average value greater than or less than, as appropriate, the operating parameter value established in accordance with s. NR 466.10 (6).

f. If an oxidizer other than a catalytic oxidizer is used, operate the oxidizer at an average combustion temperature for all 3−hour periods greater than or equal to the average combustion temperature established under s. NR 466.09 (4).

g. If a catalytic oxidizer is used, operate the oxidizer so that the average catalyst bed inlet temperature for all 3−hour periods is greater than or equal to the average catalyst bed inlet temperature established under s. NR 466.09 (4).

2. Use continuous emission monitors, conduct an initial performance test of capture efficiency and continuously monitor a site specific operating parameter to assure capture efficiency in accordance with the requirements of par. (a) 2.

(c) *Low HAP materials.* . Each owner or operator demonstrating compliance without the use of a control device shall compare the mass of organic HAP used to the mass of volatile matter used each month, as specified in the following procedures:

1. Measure the mass of each ink, coating, varnish, adhesive, primer, solvent and other material used in the affected source during the month.

2. Determine the organic HAP content of each ink, coating, varnish, adhesive, primer, solvent and other material used during the month following the procedure in s. NR 466.09 (2) (a).

3. Determine the volatile matter content, including water, of each ink, coating, varnish, adhesive, primer, solvent and other material used during the month following the procedure in s. NR 466.09 (3) (a).

(d) *Compliance criteria.* 1. Under par. (a) 1., the affected source is in compliance for the month with the emission limitation if R_e is at least 92% for that month.

2. Under par. (a) 2., the affected source is in compliance for the month with the emission limitation if R_e is at least 92% for that month, and the capture device is operated at an average value greater than, or less than, as appropriate, the operating parameter value established in accordance with s. NR 466.10 (6) for each 3−hour period.

3. Under par. (b) 1., the affected source is in initial compliance with the emission limitation if R_e is at least 92%. The affected source is in continuing compliance with the emission limitation if par. (b) 1. e. and either par. (b) 1. f. or g. are satisfied.

4. Under par. (b) 2., the affected source is in compliance for the month with the emission limitation if the criteria of subd. 2. are satisfied.

5. Under par. (c), the affected source is in compliance for the month with the emission limitation if the mass of organic HAP used does not exceed 8% of the mass of volatile matter used.

History: Cr. Register, March, 2000, No. 531, eff. 4−1−00.

NR 466.07 Standards: product and packaging rotogravure and wide−web flexographic printing. (1) COMPLIANCE DATES. Each owner or operator of any product and packaging rotogravure or wide−web flexographic printing affected source that is subject to the requirements of this chapter shall comply with this section on and after the compliance dates as specified in s. NR 466.08.

(2) EMISSION LIMITATIONS. The owner or operator of each product and packaging rotogravure or wide−web flexographic printing affected source shall limit organic HAP emissions to no more than any one of the following:

(a) Five percent of the organic HAP applied for the month.

(b) Four percent of the mass of inks, coatings, varnishes, adhesives, primers, solvents, reducers, thinners and other materials applied for the month.

(c) Twenty percent of the mass of solids applied for the month.

(d) A calculated equivalent allowable mass based on the organic HAP and solids contents of the inks, coatings, varnishes, adhesives, primers, solvents, reducers, thinners and other materials applied for the month.

(3) COMPLIANCE METHODS. The owner or operator of each product and packaging rotogravure or wide−web flexographic printing affected source shall demonstrate compliance with sub. (2) according to one of the following procedures:

(a) Demonstrate that each ink, coating, varnish, adhesive, primer, solvent, diluent, reducer, thinner and other material applied during the month contains no more than 0.04 weight−fraction organic HAP, on an as−purchased basis, as determined in accordance with s. NR 466.09 (2) (b).

(b) Demonstrate that each ink, coating, varnish, adhesive, primer and other solids−containing material applied during the month contains no more than 0.04 weight−fraction organic HAP, on a monthly average as−applied basis, as determined in accordance with the following procedures:

1. Determine the organic HAP content of each ink, coating, varnish, adhesive, primer, solvent, diluent, reducer, thinner and other material applied on an as−purchased basis in accordance with s. NR 466.09 (2) (b).

2. Calculate the monthly average as−applied organic HAP content (C_{ahi}) of each ink, coating, varnish, adhesive, primer and other solids−containing material using Equation 3.

$$C_{ahi} = \frac{\left(C_{hi} M_i + \sum_{j=1}^{q} C_{hij} M_{ij}\right)}{M_i + \sum_{j=1}^{q} M_{ij}} \qquad \text{(Equation 3)}$$

(c) Demonstrate that each ink, coating, varnish, adhesive, primer and other solids−containing material applied, contains no more than one of the following:

1. 0.04 weight−fraction organic HAP on a monthly average as−applied basis, when determined in accordance with par. (b).

2. 0.20 kg (0.20 lb) of organic HAP per kg (lb) of solids applied, on a monthly average as−applied basis, when determined in accordance with the following procedures:

a. Determine the as−applied solids content following the procedure in s. NR 466.09 (3) (b) of all materials which do not meet the requirements of subd.1.

b. Calculate the monthly average as−applied solids content of materials which are reduced, thinned or diluted prior to application, using Equation 4.

$$C_{asi} = \frac{C_{si} M_i}{M_i + \sum_{j=1}^{q} M_{ij}} \qquad \text{(Equation 4)}$$

c. Calculate the as−applied organic HAP to solids ratio, H_{si}, for all materials which do not meet the requirements of subd. 1., using Equation 5.

$$H_{si} = \frac{C_{ahi}}{C_{asi}} \qquad \text{(Equation 5)}$$

(d) Demonstrate that the monthly average as−applied organic HAP content, H_L, of all materials applied is less than 0.04 kg (0.04 lb) HAP per kg (lb) of material applied, using Equation 6.

$$H_L = \frac{\sum_{i=1}^{p} M_i C_{hi} + \sum_{j=1}^{q} M_j C_{hj}}{\sum_{i=1}^{p} M_i + \sum_{j=1}^{q} M_j} \qquad \text{(Equation 6)}$$

(e) Demonstrate that the monthly average as−applied organic HAP content, H_S, is less than 0.20 kg (0.20 lb) HAP per kg (lb) solids applied using Equation 7.

$$H_s = \frac{\sum_{i=1}^{p} M_i C_{hi} + \sum_{j=1}^{q} M_j C_{hj}}{\sum_{i=1}^{p} M_i C_{si}} \qquad \text{(Equation 7)}$$

(f) Demonstrate that the total monthly organic HAP applied, H, as determined using Equation 8, is less than the calculated equivalent allowable organic HAP, H_a, as determined under sub. (6).

$$H = \sum_{i=1}^{p} M_i C_{hi} + \sum_{j=1}^{q} M_j C_{hj} \qquad \text{(Equation 8)}$$

(g) Operate a capture system and control device and demonstrate an overall organic HAP control efficiency of at least 95% for each month. If the affected source operates more than one capture system or more than one control device, and has only always−controlled work stations, the owner or operator shall demonstrate compliance in accordance with the provisions of sub. (7) or (9). If the affected source operates one or more never−controlled work stations or one or more intermittently−controllable work stations, the owner or operator shall demonstrate compliance in accordance with the provisions of sub. (7). Otherwise, the owner or operator shall demonstrate compliance in accordance with the procedure in sub. (4) when emissions from the affected source are controlled by a solvent recovery device or the procedure in sub. (5) when emissions are controlled by an oxidizer.

(h) Operate a capture system and control device and limit the organic HAP emission rate to no more than 0.20 kg (0.20 lb) organic HAP emitted per kg (lb) solids applied as determined on a monthly average as−applied basis. If the affected source operates more than one capture system, more than one control device, one or more never−controlled work stations, or one or more intermittently−controllable work stations, the owner or operator shall demonstrate compliance in accordance with the provisions of sub. (7). Otherwise, the owner or operator shall demonstrate compliance following the procedure in sub. (4) when emissions from the affected source are controlled by a solvent recovery device or the procedure in sub. (5) when emissions are controlled by an oxidizer.

(i) Operate a capture system and control device and limit the organic HAP emission rate to no more than 0.04 kg (0.04 lb) organic HAP emitted per kg (lb) material applied as determined on a monthly average as−applied basis. If the affected source operates more than one capture system, more than one control device, one or more never−controlled work stations, or one or more intermittently−controllable work stations, then the owner or operator shall demonstrate compliance in accordance with the provisions of sub. (7). Otherwise, the owner or operator shall demonstrate compliance following the procedure in sub. (4) when emissions from the affected source are controlled by a solvent recovery device or the procedure in sub. (5) when emissions are controlled by an oxidizer.

(j) Operate a capture system and control device and limit the monthly organic HAP emissions to less than the allowable emissions as calculated in accordance with sub. (6). If the affected source operates more than one capture system, more than one control device, one or more never−controlled work stations, or one or more intermittently−controllable work stations, the owner or operator shall demonstrate compliance in accordance with the provisions of sub. (7). Otherwise, the owner or operator shall demonstrate compliance following the procedure in sub. (4) when emissions from the affected source are controlled by a solvent recovery device or the procedure in sub. (5) when emissions are controlled by an oxidizer.

(4) COMPLIANCE DEMONSTRATION FOR A SOLVENT RECOVERY DEVICE. (a) To demonstrate the overall organic HAP control efficiency required under sub. (3) (g), or the organic HAP emission limitation requirements in sub. (3) (h) to (j), each owner or operator using a solvent recovery device to control emissions shall do one of the following:

1. Perform a liquid−liquid material balance for each month according to the following procedures:

a. Measure the mass of each ink, coating, varnish, adhesive, primer, solvent and other material applied on the press or group of presses controlled by a common solvent recovery device during the month.

b. If demonstrating compliance with sub. (2) (b), (c) or (d), determine the organic HAP content of each ink, coating, varnish, adhesive, primer, solvent and other material applied during the month following the procedure in s. NR 466.09 (2) (b).

c. Determine the volatile matter content of each ink, coating, varnish, adhesive, primer, solvent and other material applied during the month following the procedure in s. NR 466.09 (3) (b).

d. If demonstrating compliance with sub. (2) (c) or (d), determine the solids content of each ink, coating, varnish, adhesive, primer, solvent and other material applied during the month following the procedure in s. NR 466.09 (3) (b).

e. Install, calibrate, maintain and operate according to the manufacturer's specifications, a device that indicates the cumulative amount of volatile matter recovered by the solvent recovery device on a monthly basis. The device shall be initially certified by the manufacturer to be accurate to within ± 2.0%.

f. Measure the amount of volatile matter recovered for the month.

g. Calculate the volatile matter collection and recovery efficiency, R_v, using Equation 9.

$$R_v = 100 \frac{M_{vr}}{\sum_{i=1}^{p} M_i C_{vi} + \sum_{j=1}^{q} M_j} \qquad \text{(Equation 9)}$$

h. If demonstrating compliance with sub. (2) (b), (c) or (d), calculate the organic HAP emitted during the month, H, using Equation 10.

$$H = \left[1 - \frac{R_v}{100}\right]\left[\sum_{i=1}^{p}\left(C_{hi} M_i + \sum_{j=1}^{q} C_{hij} M_{ij}\right)\right] \qquad \text{(Equation 10)}$$

i. If demonstrating compliance with sub. (2) (c), calculate the organic HAP emission rate based on solids applied, L, using Equation 11.

$$L = \frac{H}{\sum_{i=1}^{p} C_{si} M_i} \qquad \text{(Equation 11)}$$

j. If demonstrating compliance with sub. (2) (b), calculate the organic HAP emission rate based on material applied, S, using Equation 12.

$$S = \frac{H}{\sum_{i=1}^{p} \left[M_i + \sum_{j=1}^{q} M_{ij} \right]} \qquad \text{(Equation 12)}$$

2. Conduct continuous emission monitoring of the control device, conduct an initial performance test of capture efficiency, and continuously monitor a site specific operating parameter to assure capture efficiency according to the following procedures:

a. If demonstrating compliance with sub. (2) (b), (c) or (d), measure the mass of each ink, coating, varnish, adhesive, primer, solvent and other material applied on the press or group of presses controlled by a common control device during the month.

b. If demonstrating compliance with sub. (2) (b), (c) or (d), determine the organic HAP content of each ink, coating, varnish, adhesive, primer, solvent and other material applied during the month following the procedure in s. NR 466.09 (2) (b).

c. Install continuous emission monitors to determine the total organic volatile matter mass flow rate at both the inlet to and the outlet from the control device, and calculate the percent efficiency (E) of the control device for each month.

d. If demonstrating compliance with sub. (2) (c) or (d), determine the solids content of each ink, coating, varnish, adhesive, primer, solvent and other material applied during the month following the procedure in s. NR 466.09 (3) (b).

e. Install, calibrate, operate and maintain the instrumentation necessary to measure continuously the site−specific operating parameter established in accordance with s. NR 466.10 (6) whenever a product and packaging rotogravure or wide−web flexographic printing press is operated.

f. Determine the capture efficiency (F) in accordance with s. NR 466.09 (5) and (6).

g. Calculate the overall organic HAP control efficiency, (R), achieved for each month using Equation 13.

$$R = \frac{E\ F}{100} \qquad \text{(Equation 13)}$$

h. If demonstrating compliance with sub. (2) (b), (c) or (d), calculate the organic HAP emitted during the month, H, for each month using Equation 14.

$$H = \left[1 - \left(\frac{E}{100}\frac{F}{100}\right)\right]\left[\sum_{i=1}^{p}\left(C_{hi}M_i + \sum_{j=1}^{q} C_{hij}M_{ij}\right)\right] \qquad \text{(Equation 14)}$$

i. If demonstrating compliance with sub. (2) (c), calculate the organic HAP emission rate based on solids applied, L, using Equation 15.

$$L = \frac{H}{\sum_{i=1}^{p} C_{si} M_i} \qquad \text{(Equation 15)}$$

j. If demonstrating compliance with sub. (2) (b), calculate the organic HAP emission rate based on material applied, S, using Equation 16.

$$S = \frac{H}{\sum_{i=1}^{p} \left[M_i + \sum_{j=1}^{q} M_{ij} \right]} \qquad \text{(Equation 16)}$$

(b) 1. Under par. (a) 1., the affected source is in compliance with an emission limitation if one of the following is satisfied:

a. The organic volatile matter collection and recovery efficiency, R_v, is 95% or greater.

b. The organic HAP emission rate based on solids applied, L, is 0.20 kg (0.20 lb) organic HAP per kg (lb) solids applied or less.

c. The organic HAP emission rate based on material applied, S, is 0.04 kg (0.04 lb) organic HAP per kg (lb) material applied or less.

d. The organic HAP emitted during the month, H, is less than the calculated allowable organic HAP, H_a, as determined using sub. (6).

2. Under par. (a) 2., the affected source is in compliance with an emission limitation if the capture system operating parameter is operated at an average value greater than or less than, as appropriate, the operating parameter value established in accordance with s. NR 466.10 (6) for each 3 hour period, and one of the following is satisfied:

a. The organic volatile matter collection and recovery efficiency, R_v, is 95% or greater.

b. The organic HAP emission rate based on solids applied, L, is 0.20 kg (0.20 lb) organic HAP per kg (lb) solids applied or less.

c. The organic HAP emission rate based on material applied, S, is 0.04 kg (0.04 lb) organic HAP per kg (lb) material applied or less.

d. The organic HAP emitted during the month, H, is less than the calculated allowable organic HAP, H_a, as determined using sub. (6).

(5) COMPLIANCE DEMONSTRATION FOR AN OXIDIZER. (a) To demonstrate the overall organic HAP control efficiency required under sub. (3) (g) or the organic HAP emission limitation requirements in sub. (3) (h) to (j), each owner or operator using an oxidizer to control emissions shall do one of the following:

1. Conduct initial performance tests of capture efficiency and control device efficiency and continuously monitor capture system and control device operating parameters according to the following procedures:

a. Determine the oxidizer destruction efficiency (E) using the procedure in s. NR 466.09 (4).

b. Determine the capture system capture efficiency (F) in accordance with s. NR 466.09 (5) and (6).

c. Calculate the overall organic HAP control efficiency, (R), achieved using Equation 13 in sub. (4) (a) 2. g.

d. If demonstrating compliance with sub. (2) (b), (c) or (d), measure the mass of each ink, coating, varnish, adhesive, primer, solvent and other material applied on the press or group of presses controlled by a common solvent recovery device during the month.

e. If demonstrating compliance with sub. (2) (b), (c) or (d), determine the organic HAP content of each ink, coating, varnish, adhesive, primer, solvent and other material applied during the month following the procedure in s. NR 466.09 (2) (b).

f. If demonstrating compliance with sub. (2) (c) or (d), determine the solids content of each ink, coating, varnish, adhesive, primer, solvent and other material applied during the month following the procedure in s. NR 466.09 (3) (b).

g. If demonstrating compliance with sub. (2) (b), (c) or (d), calculate the organic HAP emitted during the month, H, for each month using Equation 14 in sub. (4) (a) 2. h.

h. If demonstrating compliance with sub. (2) (c), calculate the organic HAP emission rate based on solids applied, L, for each month using Equation 15 in sub. (4) (a) 2. i.

i. If demonstrating compliance with sub. (2) (b), calculate the organic HAP emission rate based on material applied, S, using Equation 16 in sub. (4) (a) 2. j.

j. Install, calibrate, operate and maintain the instrumentation necessary to measure continuously the site−specific operating parameters established in accordance with s. NR 466.10 (5) and (6) whenever a product and packaging rotogravure or wide−web flexographic press is operating.

2. Conduct continuous emission monitoring of the control device, conduct an initial performance test of capture efficiency, and continuously monitor a site specific operating parameter to assure capture efficiency in accordance with the requirements in sub. (4) (a) 2.

(b) 1. Under par. (a) 1., the affected source is in compliance with an emission limitation if the oxidizer is operated such that the average operating parameter value is greater than the operating parameter value established in accordance with s. NR 466.10 (5) for each 3−hour period, and the capture system operating parameter is operated at an average value greater than or less than, as appropriate, the operating parameter value established in accordance with s. NR 466.10 (6) for each 3−hour period, and one of the following is satisfied:

a. The overall organic HAP control efficiency, R, is 95% or greater.

b. The organic HAP emission rate based on solids applied, L, is 0.20 kg (0.20 lb) organic HAP per kg (lb) solids applied or less.

c. The organic HAP emission rate based on material applied, S, is 0.04 kg (0.04 lb) organic HAP per kg (lb) material applied or less.

d. The organic HAP emitted during the month, H, is less than the calculated allowable organic HAP, H_a, as determined using sub. (6).

2. Under par. (a) 2., the affected source is in compliance with an emission limitation if sub. (4) (b) 2. is satisfied.

(6) CALCULATING MONTHLY ALLOWABLE HAP EMISSIONS (H_A). Owners or operators shall calculate the monthly allowable HAP emissions, H_a, as required under sub. (3) (f), (4) (b) 1. d. or 2. d., or (5) (b) 1. d., according to the following procedures:

(a) Determine the as−purchased mass of each ink, coating, varnish, adhesive, primer and other solids−containing material applied each month, M_i.

(b) Determine the as−purchased solids content of each ink, coating, varnish, adhesive, primer and other solids−containing material applied each month, in accordance with s. NR 466.09 (3) (b), C_{si}.

(c) Determine the as−purchased mass fraction of each ink, coating, varnish, adhesive, primer and other solids−containing material which was applied at 20% by weight or greater solids content, on an as−applied basis, G_i.

(d) Determine the total mass of each solvent, diluent, thinner or reducer added to materials which were applied at less than 20% by weight solids content, on an as−applied basis, each month, M_{Lj}.

(e) Calculate the monthly allowable HAP emissions, H_a, using Equation 17.

$$H_a = 0.20\left[\sum_{i=1}^{p} M_i G_i C_{si}\right] + 0.04\left[\sum_{i=1}^{p} M_i(1-G_i) + \sum_{j=1}^{q} M_{Lj}\right] \qquad \text{(Equation 17)}$$

(7) OPERATING MORE THAN ONE CAPTURE SYSTEM OR CONTROL DEVICE, OR ONE OR MORE NEVER−CONTROLLED OR INTERMITTENTLY−CONTROLLABLE WORK STATIONS. This subsection applies to owners or operators of product and packaging rotogravure or wide−web flexographic printing presses operating more than one capture system, more than one control device, one or more never−controlled work stations, or one or more intermittently−controllable work stations.

(a) The owner or operator of each solvent recovery system used to control one or more product and packaging rotogravure or wide−web flexographic presses for which the owner or operator chooses to perform a liquid−liquid material balance under sub. (4) (a) 1. shall determine the organic HAP emissions for those presses controlled by that solvent recovery system according to one of the following:

1. In accordance with sub. (4) (a) 1. a. to c. and e. to h., if the presses controlled by that solvent recovery system have only always−controlled work stations.

2. In accordance with subs. (4) (a) 1. b., c., e. and f. and (8), if the presses controlled by that solvent recovery system have one or more never−controlled or intermittently−controllable work stations.

(b) The owner or operator of each solvent recovery system used to control one or more product and packaging rotogravure or wide−web flexographic presses, for which the owner or operator chooses to conduct continuous emission monitoring of the control device, conduct an initial test of capture efficiency, and continuously monitor a site specific operating parameter to assure capture efficiency under sub. (4) (a) 2., shall do both of the following:

1. For each capture system delivering emissions to that solvent recovery system, monitor an operating parameter established in accordance with s. NR 466.10 (6) to assure capture system efficiency.

2. Determine the organic HAP emissions for those presses served by each capture system delivering emissions to that solvent recovery system according to one of the following:

a. In accordance with sub. (4) (a) 2. a. to c. and e. to h., if the presses served by that capture system have only always−controlled work stations.

b. In accordance with subs. (4) (a) 2. b., c. and e. to g. and (8), if the presses served by that capture system have one or more never−controlled or intermittently−controllable work stations.

(c) The owner or operator of each oxidizer used to control emissions from one or more product and packaging rotogravure or wide−web flexographic presses, for which the owner or operator chooses to conduct performance tests of capture efficiency and control device efficiency and continuously monitor capture system and control device operating parameters under sub. (5) (a) 1., shall do all of the following:

1. Monitor an operating parameter established in accordance with s. NR 466.10 (5) to assure control device efficiency.

2. For each capture system delivering emissions to that oxidizer, monitor an operating parameter established in accordance with s. NR 466.10 (6) to assure capture efficiency.

3. Determine the organic HAP emissions for those presses served by each capture system delivering emissions to that oxidizer according to one of the following:

a. In accordance with sub. (5) (a) 1. a. to e. and g., if the presses served by that capture system have only always−controlled work stations.

b. In accordance with subs. (5) (a) 1. a. to c. and e. and (8), if the presses served by that capture system have one or more never–controlled or intermittently–controllable work stations.

(d) The owner or operator of each oxidizer used to control emissions from one or more product and packaging rotogravure or wide–web flexographic presses, for which the owner or operator chooses to conduct continuous emission monitoring of the control device, conduct an initial performance test of capture efficiency and continuously monitor a site specific operating parameter to assure capture efficiency under sub. (5) (a) 2., shall do both of the following:

1. For each capture system delivering emissions to that oxidizer, monitor an operating parameter established in accordance with s. NR 466.10 (6) to assure capture efficiency.

2. Determine the organic HAP emissions for those presses served by each capture system delivering emissions to that oxidizer according to one of the following:

a. In accordance with sub. (4) (a) 2. a. to c. and e. to h., if the presses served by that capture system have only always–controlled work stations.

b. In accordance with subs. (4) (a) 2. b., c., e. to g. and (8), if the presses served by that capture system have one or more never–controlled or intermittently–controllable work stations.

(e) The owner or operator of one or more uncontrolled product and packaging rotogravure or wide–web flexographic printing presses shall determine the organic HAP applied on those presses using Equation 8 in sub. (3) (f). For the purpose of a determination under this paragraph, the organic HAP emitted from an uncontrolled press shall be considered equal to the organic HAP applied on that press.

(f) If demonstrating compliance with sub. (2) (c) or (d), the owner or operator shall determine the solids content of each ink, coating, varnish, adhesive, primer, solvent and other material applied during the month following the procedure in s. NR 466.09 (3) (b).

(g) The owner or operator shall determine the organic HAP emissions for the affected source for the month by summing all organic HAP emissions calculated according to pars. (a), (b) 2., (c) 3., (d) 2. and (e).

(h) Under this subsection, the affected source is in compliance for the month with an emission limitation, if all operating parameters required to be monitored under pars. (b) to (d), were maintained at the appropriate values, and one of the following is satisfied:

1. The total mass of organic HAP emitted by the affected source was not more than 4% of the total mass of inks, coatings, varnishes, adhesives, primers, solvents, diluents, reducers, thinners and other materials applied by the affected source.

2. The total mass of organic HAP emitted by the affected source was not more than 20% of the total mass of solids applied by the affected source.

3. The total mass of organic HAP emitted by the affected source was not more than the equivalent allowable organic HAP emissions for the affected source, H_a, calculated in accordance with sub. (6).

4. The total mass of organic HAP emitted by the affected source was not more than 5% of the total mass of organic HAP applied by the affected source. The total mass of organic HAP applied by the affected source in the month shall be determined by the owner or operator using Equation 8 in sub. (3) (f).

(8) OPERATING NEVER–CONTROLLED OR INTERMITTENTLY CONTROLLABLE WORK STATIONS. Owners or operators determining organic HAP emissions from a press or group of presses having one or more never–controlled or intermittently–controllable work stations and using the procedures specified in sub. (7) (a) 2., (b) 2. b., (c) 3. b. or (d) 2. b., shall do the following for that press or group of presses:

(a) Determine the sum of the mass of all inks, coatings, varnishes, adhesives, primers and other solids–containing materials which are applied on intermittently–controllable work stations in bypass mode and the mass of all inks, coatings, varnishes, adhesives, primers and other solids–containing materials which are applied on never–controlled work stations during the month, M_{Bi}.

(b) Determine the sum of the mass of all solvents, reducers, thinners and other diluents which are applied on intermittently–controllable work stations in bypass mode and the mass of all solvents, reducers, thinners and other diluents which are applied on never–controlled work stations during the month, M_{Bj}.

(c) Determine the sum of the mass of all inks, coatings, varnishes, adhesives, primers and other solids–containing materials which are applied on intermittently–controllable work stations in controlled mode and the mass of all inks, coatings, varnishes, adhesives, primers and other solids–containing materials which are applied on always–controlled work stations during the month, M_{Ci}.

(d) Determine the sum of the mass of all solvents, reducers, thinners and other diluents which are applied on intermittently–controllable work stations in controlled mode and the mass of all solvents, reducers, thinners and other diluents which are applied on always–controlled work stations during the month, M_{Cj}.

(e) For each press or group of presses for which the owner or operator uses the provisions of sub. (7) (a) 2., calculate the organic HAP emitted during the month using Equation 18.

$$H = \left[\sum_{i=1}^{p} M_{Ci}C_{hi} + \sum_{j=1}^{q} M_{Cj}C_{hj}\right]\left[1 - \frac{M_{vr}}{\sum_{i=1}^{p} M_{Ci}C_{vi} + \sum_{j=1}^{q} M_{Cj}}\right] + \left[\sum_{i=1}^{p} M_{Bi}C_{hi} + \sum_{j=1}^{q} M_{Bj}C_{hj}\right] \qquad \text{(Equation 18)}$$

(f) For each press or group of presses for which the owner or operator uses the provisions of sub. (7) (b) 2. b., (c) 3. b. or (d) 2. b., the owner or operator shall calculate the organic HAP emitted during the month using Equation 19.

$$H = \left[\sum_{i=1}^{p} M_{Ci}\,C_{hi} + \sum_{j=1}^{q} M_{Cj}C_{hj}\right]\left[1 - \left(\frac{E}{100}\frac{F}{100}\right)\right] + \left[\sum_{i=1}^{p} M_{Bi}C_{hi} + \sum_{j=1}^{q} M_{Bj}C_{hj}\right] \qquad \text{(Equation 19)}$$

(9) OPERATING MORE THAN ONE CAPTURE SYSTEM OR CONTROL DEVICE AND NO NEVER–CONTROLLED AND NO INTERMITTENTLY CONTROLLABLE WORK STATIONS. If the owner or operator of an affected source operates more than one capture system or more than one control device, and has no never–controlled work stations and no intermittently–controllable work stations, the affected source is in compliance with the 95% overall organic HAP control efficiency requirement for the month if for each press or group of presses controlled by a common control device one of the following is satisfied:

(a) The organic volatile matter collection and recovery efficiency, R_v, as determined by sub. (4) (a) 1. a., c. and e. to g., is equal to or greater than 95%.

(b) The overall organic HAP control efficiency as determined by sub. (4) (a) 2. c. and e. to g., for each press or group of presses served by that control device and a common capture system, is equal to or greater than 95% and the average capture system operating parameter value for each capture system serving that control device is greater than or less than, as appropriate, the operating parameter value established for that capture system in accordance with s. NR 466.10 (6) for each 3−hour period.

(c) The overall organic HAP control efficiency as determined by sub. (5) (a) 1. a. to c. and j., for each press or group of presses served by that control device and a common capture system, is equal to or greater than 95%, the oxidizer is operated such that the average operating parameter value is greater than the operating parameter value established in accordance with s. NR 466.10 (5) for each 3−hour period, and the average capture system operating parameter value for each capture system serving that control device is greater than or less than, as appropriate, the operating parameter value established for that capture system in accordance with s. NR 466.10 (6) for each 3−hour period.

History: Cr. Register, March, 2000, No. 531, eff. 4−1−00.

NR 466.08 Compliance dates. (1) The owner or operator of an existing source subject to this chapter shall comply with the provisions of this chapter on or before May 30, 1999.

(2) The owner or operator of a new MACT source subject to this chapter shall comply with the provisions of this chapter immediately upon startup of the affected source, or May 30, 1996, whichever is later.

(3) Affected sources which have undergone reconstruction are subject to the requirements for new MACT sources. The costs associated with the purchase and installation of air pollution control equipment are not considered in determining whether the affected source has been reconstructed. Additionally, the costs of retrofitting and replacement of equipment that is installed specifically to comply with this chapter are not considered reconstruction costs.

Note: Compliance dates are federally enforceable under 40 CFR 63.826 prior to the effective date of this section.

History: Cr. Register, March, 2000, No. 531, eff. 4−1−00.

NR 466.09 Performance test methods. (1) INITIAL PERFORMANCE TEST EXCEPTIONS FOR CONTROL DEVICES. An owner or operator using a control device to comply with the requirements of s. NR 466.06 or 466.07 is not required to conduct an initial performance test to demonstrate compliance as is otherwise required under ss. NR 466.06 (4) (a) 2., (b) 1. and 2. and 466.07 (4) (a) 2. and (5) (a) 1. and 2. if any of the following criteria are met:

(a) The control device was in operation prior to May 30, 1996 and is equipped with continuous emission monitors for determining inlet and outlet total organic volatile matter concentration; capture efficiency has been determined in accordance with the requirements of this chapter such that an overall HAP control efficiency can be calculated; and the continuous emission monitors are used to demonstrate continuous compliance in accordance with s. NR 466.10.

(b) The owner or operator has met the requirements of either s. NR 460.06 (4) (b) 3. or (7).

(c) The control device is a solvent recovery system and the owner or operator chooses to comply by means of a monthly liquid−liquid material balance as provided for in s. NR 466.06 (4) (a) 1. and 466.07 (4) (a) 1.

(2) ORGANIC HAP WEIGHT−FRACTION. (a) For the purpose of meeting the requirements of s. NR 466.06, the organic HAP weight−fraction of each ink, coating, varnish, adhesive, primer, solvent and other material used in a publication rotogravure affected source shall be determined in accordance with one of the following procedures:

1. Use Method 311 in 40 CFR Part 63, Appendix A, incorporated by reference in s. NR 484.04, or obtain the results of a Method 311 test performed by the manufacturer of the material. If the organic HAP weight−fraction for any material cannot be determined using Method 311, the owner or operator shall submit an alternate method to the U.S. environmental protection agency for approval by the administrator. The recovery efficiency of the proposed technique shall be determined for all of the target organic HAP and a correction factor, if necessary, shall be determined and applied.

2. Determine the volatile matter content of the material in accordance with sub. (3) (a), and use this value for the organic HAP content for all compliance purposes.

3. Use formulation data provided by the manufacturer of the material on a CPDS if the manufacturer has done both of the following:

a. Included in the organic HAP content determination all HAP present at a level greater than 0.1% in any raw material used, weighted by the mass fraction of each raw material used in the material.

b. Determined the HAP content of each raw material present in the formulation by Method 311 in 40 CFR Part 63, Appendix A, incorporated by reference in s. NR 484.04, or by an alternate method approved by the administrator, or by reliance on a CPDS from a raw material supplier prepared in accordance with subpar. a.

(b) For the purpose of meeting the requirements of s. NR 466.07, the organic HAP weight−fraction of each ink, coating, varnish, adhesive, primer, solvent, thinner, reducer, diluent and other material used in a product and packaging rotogravure or wide−web flexographic affected source shall be determined in accordance with one of the following procedures:

1. Use Method 311 in 40 CFR Part 63, Appendix A, incorporated by reference in s. NR 484.04, or obtain the results of a Method 311 test performed by the manufacturer of the material. If the organic HAP weight−fraction for any material cannot be determined using Method 311, the owner or operator shall submit an alternate method to the U.S. environmental protection agency for approval by the administrator. The recovery efficiency of the proposed technique shall be determined for all of the target organic HAP and a correction factor, if necessary, shall be determined and applied.

2. Determine the volatile matter content of the material in accordance with sub. (3) (b), and use this value for the organic HAP content for all compliance purposes.

3. Use formulation data provided by the manufacturer of the material on a CPDS if the manufacturer has done both of the following:

a. Included in the organic HAP content determination all organic HAP present at a level greater than 0.1% in any raw material used, weighted by the mass fraction of each raw material used in the material.

b. Determined the organic HAP content of each raw material present in the formulation by Method 311 in 40 CFR Part 63, Appendix A, incorporated by reference in s. NR 484.04, or by an alternate method approved by the administrator, or by reliance on a CPDS from a raw material supplier prepared in accordance with subpar. a.

(c) In the event of any inconsistency between the organic HAP content of a material determined using test data from Method 311 in 40 CFR Part 63, Appendix A, incorporated by reference in s. NR 484.04, and the organic HAP content of the same material determined using formulation data as allowed under par. (a) 3. or (b) 3., the Method 311 test data shall govern, unless after consulta-

tion, an owner or operator demonstrates to the satisfaction of the department that the formulation data are correct.

(3) VOLATILE MATTER WEIGHT–FRACTION. (a) For the purpose of meeting the requirements of s. NR 466.06, the volatile matter weight–fraction of each ink, coating, varnish, adhesive, primer, solvent, diluent, reducer, thinner and other material used in a publication rotogravure affected source shall be determined in accordance with one of the following procedures:

1. Use Method 24A in 40 CFR Part 60, Appendix A, incorporated by reference in s. NR 484.04, or obtain the results of a Method 24A test performed by the manufacturer of the material. If the volatile matter weight–fraction for any material cannot be determined using Method 24A, the owner or operator shall submit an alternate method to the U.S. environmental protection agency for approval by the administrator.

2. Use formulation data, or volatile matter content data provided by material suppliers.

(b) For the purpose of meeting the requirements of s. NR 466.07, the volatile matter and solids weight–fraction of each ink, coating, varnish, adhesive, primer, solvent, diluent, reducer, thinner and other material used in a product and packaging rotogravure or wide–web flexographic affected source shall be determined in accordance with one of the following procedures:

1. Use Method 24 in 40 CFR Part 60, Appendix A, incorporated by reference in s. NR 484.04, or obtain the results of a Method 24 test performed by the manufacturer of the material. If the volatile matter or solids weight–fraction for any material cannot be determined using Method 24, the owner or operator shall submit an alternate method to the U.S. environmental protection agency for approval by the administrator.

2. Use formulation data, or volatile matter and solids content data provided by material suppliers.

(c) In the event of any inconsistency between the volatile matter or solids content of a material determined using formulation data as allowed under par. (a) 2. or (b) 2., and the volatile matter or solids content of the same material using the results of Method 24 or 24A in 40 CFR Part 60, Appendix A, incorporated by reference in s. NR 484.04, the applicable test method shall govern, unless after consultation, the owner or operator can demonstrate to the satisfaction of the department that the formulation data are correct.

(4) CONTROL DEVICE DESTRUCTION EFFICIENCY. A performance test of a control device to determine destruction efficiency for the purpose of meeting the requirements of ss. NR 466.06 and 466.07, shall be conducted by the owner or operator in accordance with the following requirements:

(a) An initial performance test to establish the destruction efficiency of an oxidizer and the associated combustion zone temperature for a thermal oxidizer and the associated catalyst bed inlet temperature for a catalytic oxidizer shall be conducted and the data reduced in accordance with the following reference methods and procedure:

1. Use Method 1 or 1A in 40 CFR Part 60, Appendix A, incorporated by reference in s. NR 484.04, for sample and velocity traverses to determine sampling locations.

2. Use Method 2, 2A, 2C or 2D in 40 CFR Part 60, Appendix A, incorporated by reference in s. NR 484.04, to determine gas volumetric flow rate.

3. Use Method 3 in 40 CFR Part 60, Appendix A, incorporated by reference in s. NR 484.04, for gas analysis to determine dry molecular weight.

4. Use Method 4 in 40 CFR Part 60, Appendix A, incorporated by reference in s. NR 484.04, to determine stack gas moisture.

5. Perform Methods 2, 2A, 3 and 4 in 40 CFR Part 60, Appendix A, incorporated by reference in s. NR 484.04, as applicable, at least twice during each test period.

6. Use Method 25 in 40 CFR Part 60, Appendix A, incorporated by reference in s. NR 484.04, to determine organic volatile matter concentration, except as provided for in this subdivision. The owner or operator shall submit notice of the intended test method to the department for approval along with notice of the performance test required under s. NR 460.06 (2). The owner or operator may use Method 25A in 40 CFR Part 60, Appendix A, incorporated by reference in s. NR 484.04, if any of the following conditions are met:

a. An exhaust gas organic volatile matter concentration of 50 parts per million by volume (ppmv) or less is required to comply with the standards of s. NR 466.06 or 466.07.

b. The organic volatile matter concentration at the inlet to the control system and the required level of control are such to result in exhaust gas organic volatile matter concentrations of 50 ppmv or less.

c. Because of the high efficiency of the control device, the anticipated organic volatile matter concentration at the control device exhaust is 50 ppmv or less, regardless of inlet concentration.

7. Each performance test shall consist of 3 separate runs; each run conducted for at least one hour under the conditions that exist when the affected source is operating under normal representative operating conditions. Operations during periods of startup, shutdown and malfunction do not constitute representative conditions for the purpose of a performance test. For the purpose of determining organic volatile matter concentrations and mass flow rates, the average of results of all runs shall apply.

8. Organic volatile matter mass flow rates shall be determined using Equation 20:

$$M_f = Q_{sd}\left[\sum_{i=1}^{n} C_i\, MW_i\right][0.0416]\ [10^{-6}] \qquad \text{(Equation 20)}$$

9. Emission control device efficiency shall be determined using Equation 21:

$$E = \frac{M_{fi} - M_{fo}}{M_{fi}} \qquad \text{(Equation 21)}$$

(b) The owner or operator shall record the process information necessary to determine the conditions of the performance test.

(c) For the purpose of determining the value of the oxidizer operating parameter that will demonstrate continuing compliance, the time–weighted average of the values recorded during the performance test shall be computed. For an oxidizer other than catalytic oxidizer, the owner or operator shall establish as the operating parameter the minimum combustion temperature. For a catalytic oxidizer, the owner or operator shall establish as the operating parameter the minimum gas temperature at the inlet to the catalyst bed. These minimum temperatures are the operating parameter values that demonstrate continuing compliance with the requirements of ss. NR 466.06 and 466.07.

(5) CAPTURE EFFICIENCY. Except as provided for in sub. (6), a performance test to determine the capture efficiency of each capture system venting organic emissions to a control device for the purpose of meeting the requirements of ss. NR 466.06 (4) (a) 2. and (b) and 466.07 (4) (a) 2., (5) (a), (7) (b) to (d) and (9) (b) and (c) shall be conducted by the owner or operator in accordance with the following procedures:

(a) For permanent total enclosures, capture efficiency shall be assumed as 100%. Method 204 in 40 CFR Part 51, Appendix M, incorporated by reference in s. NR 484.04, shall be used to confirm that an enclosure meets the requirements for permanent total enclosure.

(b) For temporary total enclosures, the capture efficiency shall be determined according to Method 204 and, as applicable, Methods 204A through 204F, in 40 CFR Part 51, Appendix M, incorporated by reference in s. NR 484.04. The owner or operator may

exclude never−controlled work stations from the capture efficiency determinations.

(6) ALTERNATIVE CAPTURE EFFICIENCY. As an alternative to the procedures specified in sub. (5), an owner or operator required to conduct a capture efficiency test may use any capture efficiency protocol and test methods that satisfy the criteria of either the data quality objective (DQO) or the lower confidence limit (LCL) approach in 40 CFR Part 63, Subpart KK, Appendix A, incorporated by reference in s. NR 484.04. The owner or operator may exclude never−controlled work stations from the capture efficiency determinations.

History: Cr. Register, March, 2000, No. 531, eff. 4−1−00; CR 05−039: am. (1) (b) Register February 2006 No. 602, eff. 3−1−06; **correction in (2) (b) (intro.) made under s. 13.92 (4) (b) 7, Stats., Register April 2008 No. 628.**

NR 466.10 Monitoring requirements. Following the date on which the initial performance test of a control device is completed, to demonstrate continuing compliance with the standard, the owner or operator shall monitor and inspect each control device required to comply with s. NR 466.06 or 466.07 to ensure proper operation and maintenance by implementing the applicable requirements in this section. Any excursion from the required operating parameters which are monitored in accordance with this section, unless otherwise excused, shall be considered a violation of the emission standard.

(1) Owners or operators of product and packaging rotogravure or wide−web flexographic presses with intermittently−controllable work stations shall implement one of the following procedures for each dryer associated with a work station:

(a) Install, calibrate, maintain and operate according to the manufacturer's specifications a flow control position indicator that provides a record indicating whether the exhaust stream from the dryer was directed to the control device or was diverted from the control device. The time and flow control position shall be recorded at least once per hour, as well as every time the flow direction is changed. The flow control position indicator shall be installed at the entrance to any bypass line that could divert the exhaust stream away from the control device to the atmosphere.

(b) Secure any bypass line valve in the closed position with a car−seal or a lock−and−key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve or damper is maintained in the closed position and the exhaust stream is not diverted through the bypass line.

(c) Ensure that any bypass line valve or damper is in the closed position through continuous monitoring of the valve position. The monitoring system shall be inspected at least once every month to ensure that it is functioning properly.

(d) Use an automatic shutdown system in which the press is stopped when flow is diverted away from the control device to any bypass line. The automatic system shall be inspected at least once every month to ensure that it is functioning properly.

(2) All continuous emission monitors shall comply with performance specifications (PS) 8 or 9 in 40 CFR Part 60, Appendix B, incorporated by reference in s. NR 484.04. The requirements of 40 CFR Part 60, Appendix F, incorporated by reference in s. NR 484.04, shall also be followed. In conducting the quarterly audits required by Appendix F, owners or operators shall challenge the monitors with compounds representative of the gaseous emission stream being controlled.

(3) All temperature monitoring equipment shall be installed, calibrated, maintained and operated according to manufacturer's specifications. The calibration of the chart recorder, data logger or temperature indicator shall be verified every 3 months. The owner or operator shall replace the chart recorder, data logger or temperature indicator if either the owner or operator chooses not to perform the calibration, or the equipment cannot be calibrated properly.

(4) An owner or operator complying with s. NR 466.06 or 466.07 through continuous emission monitoring of a control device shall install, calibrate, operate and maintain continuous emission monitors to measure the total organic volatile matter concentration at both the control device inlet and outlet.

(5) An owner or operator complying with the requirements of s. NR 466.06 or 466.07 through the use of an oxidizer and demonstrating continuous compliance through monitoring of an oxidizer operating parameter shall do the following as appropriate:

(a) For an oxidizer other than a catalytic oxidizer, install, calibrate, operate and maintain a temperature monitoring device equipped with a continuous recorder. The device shall be accurate to within ±1% of the temperature being monitored in °C or ± 1°C, whichever is the greater value. The thermocouple or temperature sensor shall be installed in the combustion chamber at a location in the combustion zone.

(b) For a catalytic oxidizer, install, calibrate, operate and maintain a temperature monitoring device equipped with a continuous recorder. The device shall be accurate to within ±1% of the temperature being monitored in °C or ± 1°C, whichever is the greater value. The thermocouple or temperature sensor shall be installed in the vent stream at the nearest feasible point to the catalyst bed inlet.

(6) An owner or operator, complying with the requirements of s. NR 466.06 or 466.07 through the use of a control device and demonstrating continuous compliance by monitoring an operating parameter to ensure that the capture efficiency measured during the initial compliance test is maintained, shall do all of the following:

(a) Submit to the department, with the compliance status report required by s. NR 460.08 (8), a plan that does all of the following:

1. Identifies the operating parameter to be monitored to ensure that the capture efficiency measured during the initial compliance test is maintained.

2. Discusses why this parameter is appropriate for demonstrating ongoing compliance.

3. Identifies the specific monitoring procedures.

(b) Set the operating parameter value, or range of values, that demonstrate compliance with s. NR 466.06 or 466.07.

(c) Conduct monitoring in accordance with the plan submitted to the department unless comments received from the department require an alternate monitoring scheme.

History: Cr. Register, March, 2000, No. 531, eff. 4−1−00.

NR 466.11 Recordkeeping requirements. **(1)** Recordkeeping requirements of ch. NR 460 apply to owners and operators of affected sources subject to this chapter as indicated in ch. NR 460 Appendix KK.

(2) Each owner or operator of an affected source subject to this chapter shall maintain on a monthly basis, in accordance with the requirements of s. NR 460.09 (2) (a), all of the following records:

(a) Records specified in s. NR 460.09 (2) (b), of all measurements needed to demonstrate compliance with this chapter, such as continuous emission monitor data, control device and capture system operating parameter data, material usage, HAP usage, volatile matter usage and solids usage that support data that the source is required to report.

(b) Records specified in s. NR 460.09 (2) (c) for each applicability determination performed by the owner or operator in accordance with the requirements of s. NR 466.01 (1) (a) to (f).

(c) Records specified in s. NR 460.09 (3) for each continuous monitoring system operated by the owner or operator in accordance with the requirements of s. NR 466.10 (intro.).

(3) Each owner or operator of an affected source subject to this chapter shall maintain records of all liquid−liquid material balances performed in accordance with the requirements of ss. NR

466.06 and 466.07. The records shall be maintained in accordance with the requirements of s. NR 460.09 (2).

(4) The owner or operator of each facility which commits to the criteria of s. NR 466.01 (1) (a) 2. shall maintain records of all required measurements and calculations needed to demonstrate compliance with these criteria, including the mass of all HAP containing materials used and the mass fraction of HAP present in each HAP containing material used, on a monthly basis.

(5) (a) The owner or operator of each facility which meets the criteria of s. NR 466.015 (3) (a) shall maintain records of the total volume of each material applied on product and packaging rotogravure or wide−web flexographic printing presses during each month.

(b) The owner or operator of each facility which meets the criteria of s. NR 466.015 (3) (b) shall maintain records of the total volume and organic HAP content of each material applied on product and packaging rotogravure or wide−web flexographic printing presses during each month.

(c) The records required under pars. (a) and (b) shall be maintained for 5 years and, upon request, submitted to the department.

(6) The owner or operator choosing to exclude from an affected source a product and packaging rotogravure or wide−web flexographic press which meets the limits and criteria of s. NR 466.015 (1) (b) 2. shall maintain the following records for 5 years and submit them to the department upon request:

(a) The total mass of each material applied each month on the press, including all inboard and outboard stations.

(b) The total mass of each material applied each month on the press by product and packaging rotogravure or wide−web flexographic printing operations.

History: Cr. Register, March, 2000, No. 531, eff. 4−1−00.

NR 466.12 Reporting requirements. (1) Except as provided in this section, reporting requirements of ch. NR 460 apply to owners and operators of affected sources subject to this chapter as indicated in ch. NR 460 Appendix KK.

(2) Each owner or operator of an affected source subject to this chapter shall submit the following reports to the department:

(a) An initial notification as required in s. NR 460.08 (2).

1. Initial notifications for existing sources shall have been submitted no later than June 1, 1998.

2. Initial notifications for new MACT sources and reconstructed sources shall be submitted as required in s. NR 460.08 (2).

3. For the purpose of this chapter, a permit application for approval of construction or reconstruction under ch. NR 406 may be used in lieu of the initial notification required under s. NR 460.08 (2), provided the same information is contained in the permit application as required by s. NR 460.08 (2).

4. Permit applications shall be submitted by the same due dates as those specified for the initial notifications.

(b) A notification of performance tests as specified in ss. NR 460.06 and 460.08 (5). This notification, and the site−specific test plan required under s. NR 460.06 (2), shall identify the operating parameter to be monitored to ensure that the capture efficiency measured during the performance test is maintained. The operating parameter identified in the site−specific test plan shall be considered to be approved unless explicitly disapproved, or unless comments received from the department require monitoring of an alternate parameter.

(c) A notification of compliance status as specified in s. NR 460.08 (8).

(d) Performance test reports as specified in s. NR 460.09 (4) (b).

(e) Startup, shutdown and malfunction reports as specified in s. NR 460.09 (4) (e), but only if a control device is used to comply with this chapter.

1. If actions taken by an owner or operator during a startup, shutdown or malfunction of an affected source, including actions taken to correct a malfunction, are not completely consistent with the procedures specified in the source's startup, shutdown and malfunction plan as specified in s. NR 460.05 (4) (c), the owner or operator shall state the information in the report. The startup, shutdown or malfunction report shall consist of a letter containing the name, title and signature of the responsible official who is certifying its accuracy, that shall be submitted to the department.

2. Separate startup, shutdown or malfunction reports are not required if the information is included in the report specified in par. (f).

(f) A summary report shall be submitted in accordance with s. NR 460.09 (5) (c). In addition to a report of operating parameter exceedances as required by s. NR 460.09 (5) (c) 1., the summary report shall include the following, as applicable:

1. Exceedances of the standards in ss. NR 466.06 and 466.07.

2. Exceedances of either of the criteria in s. NR 466.01 (1) (a) 2. a. or b.

3. Exceedances of the criterion in s. NR 466.015 (3) (a) and (b) in the same month.

4. Exceedances of the criterion of

History: Cr. Register, March, 2000, No. 531, eff. 4−1−00.

Subchapter III — Paper and Other Web Coating

NR 466.21 What this subchapter covers. (1) WHAT IS IN THIS SUBCHAPTER? This subchapter describes the actions you must take to reduce emissions of organic hazardous air pollutants (HAP) from paper and other web coating operations. This subchapter establishes emission standards for web coating lines and specifies what you must do to comply if you own or operate a facility with web coating lines that is a major source of HAP. Certain requirements apply to all who are subject to this subchapter; others depend on the means you use to comply with an emission standard.

Note: This subchapter is based on the federal regulations contained in 40 CFR part 63 Subpart JJJJ, as created on December 4, 2002 as amended at 71 FR 29805, May 24, 2006.

(2) DOES THIS SUBCHAPTER APPLY TO ME? The provisions of this subchapter apply to each new and existing facility that is a major source of HAP at which web coating lines are operated.

(3) WHICH OF MY EMISSION SOURCES ARE AFFECTED BY THIS SUBCHAPTER? The affected source subject to this subchapter is the collection of all web coating lines at your facility. The affected source includes web coating lines engaged in the coating of metal webs that are used in flexible packaging and web coating lines engaged in the coating of fabric substrates for use in pressure sensitive tape and abrasive materials. Web coating lines specified in pars. (a) to (g) are not part of the affected source under this subchapter.

(a) Any web coating line that is stand−alone coating equipment under subch. I which the owner or operator includes in the affected source under subch. I.

(b) Any web coating line that is a product and packaging rotogravure or wide−web flexographic press under subch. I which is included in the affected source under subch. I.

(c) Web coating in lithography, screen printing, letterpress and narrow−web flexographic printing processes.

(d) Any web coating line subject to 40 CFR part 63, Subpart EE, the NESHAP for magnetic tape manufacturing operations.

(e) Any web coating line subject to 40 CFR part 63, Subpart SSSS, the NESHAP for surface coating of metal coil.

(f) Any web coating line subject to 40 CFR part 63, Subpart OOOO, the NESHAP for the printing, coating and dyeing of fabric and other textiles. Any web coating line that coats both a paper or other web substrate and a fabric or other textile substrate,

except for a fabric substrate used for pressure sensitive tape and abrasive materials, is subject to 40 CFR part 63, Subpart OOOO.

(g) Any web coating line that is defined as research or laboratory equipment in s. NR 466.22.

History: CR 07−045: cr. Register April 2008 No. 628, eff. 5−1−08.

NR 466.22 What definitions are used in this subchapter? For terms not defined in this section, the definitions contained in chs. NR 400 and 460 apply to the terms in this subchapter, with definitions in ch. NR 460 taking precedence over definitions in ch. NR 400. If this section defines a term which is also defined in ch. NR 400 or 460, the definition in this section applies in this subchapter. In this subchapter:

(1) "Always−controlled work station" means a work station associated with a dryer from which the exhaust is delivered to a control device with no provision for the dryer exhaust to bypass the control device unless there is an interlock to interrupt and prevent continued coating during a bypass. Sampling lines for analyzers, relief valves needed for safety purposes and periodic cycling of exhaust dampers to ensure safe operation are not considered bypass lines.

(2) "Applied" means the amount of organic HAP, coating material or coating solids, as appropriate for the emission standards in s. NR 466.23 (1) (b) used by the affected source during the compliance period.

(3) "As−applied" means the condition of a coating at the time of application to a substrate, including any added solvent.

(4) "As−purchased" means the condition of a coating as delivered to the user.

(5) "Capture efficiency" means the fraction of all organic HAP emissions generated by a process that is delivered to a control device, expressed as a percentage.

(6) "Capture system" means a hood, enclosed room or other means of collecting organic HAP emissions into a closed−vent system that exhausts to a control device.

(7) "Car−seal" means a seal that is placed on a device that is used to change the position of a valve or damper, for example from open to closed, in such a way that the position of the valve or damper cannot be changed without breaking the seal.

(8) "Coating material" means all inks, varnishes, adhesives, primers, solvents, reducers and other materials applied to a substrate via a web coating line. Materials used to form a substrate are not considered coating materials.

(9) "Control device" means a device such as a solvent recovery device or oxidizer which reduces the organic HAP in an exhaust gas by recovery or by destruction.

(10) "Control device efficiency" means the ratio of organic HAP emissions recovered or destroyed by a control device to the total organic HAP emissions that are introduced into the control device, expressed as a percentage.

(11) "Day" means a 24−consecutive−hour period.

(12) "Deviation" means any instance in which an affected source subject to this subchapter or an owner or operator of an affected source does any of the following:

(a) Fails to meet any requirement or obligation established by this subchapter, including any emission limitation, operating limit or work practice standard.

(b) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subchapter and that is included in the operating permit for any affected source required to obtain an operating permit.

(c) Fails to meet any emission limitation, operating limit or work practice standard in this subchapter during start−up, shutdown or malfunction, regardless of whether or not the failure is permitted by this subchapter.

(13) "Existing affected source" means any affected source the construction or reconstruction of which is commenced on or before September 13, 2000, and which has not undergone reconstruction as defined in s. NR 460.02.

(14) "Fabric" means any woven, knitted, plaited, braided, felted or non−woven material made of filaments, fibers or yarns, including thread. This term includes material made of fiberglass, natural fibers, synthetic fibers or composite materials.

(15) "Facility" means all contiguous or adjoining property that is under common ownership or control, including properties that are separated only by a road or other public right−of−way.

(16) "Flexible packaging" means any package or part of a package the shape of which can be readily changed. Flexible packaging includes bags, pouches, labels, liners and wraps utilizing paper, plastic, film, aluminum foil, metalized or coated paper or film or any combination of these materials.

(17) "Formulation data" means data on the organic HAP mass fraction, volatile matter mass fraction or coating solids mass fraction of a material that is generated by the manufacturer or means other than a test method specified in this subchapter or an approved alternative method.

(18) "HAP applied" means the organic HAP content of all coating materials applied to a substrate by a web coating line at an affected source.

(19) "Intermittently−controlled work station" means a work station associated with a dryer with provisions for the dryer exhaust to be delivered to or diverted from a control device through a bypass line, depending on the position of a valve or damper. Sampling lines for analyzers, relief valves needed for safety purposes and periodic cycling of exhaust dampers to ensure safe operation are not considered bypass lines.

(20) "Metal coil" means a continuous metal strip that is at least 0.15 millimeter (0.006 inch) thick which is packaged in a roll or coil prior to coating. After coating, it may or may not be rewound into a roll or coil. Metal coil does not include metal webs that are coated for use in flexible packaging.

(21) "Month" means a calendar month or a pre−specified period of 28 days to 35 days to allow for flexibility in recordkeeping when data are based on a business accounting period.

(22) "Never−controlled work station" means a work station that is not equipped with provisions by which any emissions, including those in the exhaust from any associated dryer, may be delivered to a control device.

(23) "New affected source" means any affected source the construction or reconstruction of which is commenced after September 13, 2000.

(24) "Overall organic HAP control efficiency" means the total efficiency of a capture and control system.

(25) "Pressure sensitive tape" means a flexible backing material with a pressure−sensitive adhesive coating on one or both sides of the backing.

(26) "Research or laboratory equipment" means any equipment for which the primary purpose is to conduct research and development into new processes and products where the equipment is operated under the close supervision of technically trained personnel and is not engaged in the manufacture of products for commercial sale in commerce except in a de minimis manner.

(27) "Rewind or cutting station" means a unit from which substrate is collected at the outlet of a web coating line.

(28) "Uncontrolled coating line" means a coating line consisting of only never−controlled work stations.

(29) "Unwind or feed station" means a unit from which substrate is fed to a web coating line.

(30) "Web" means a continuous substrate, such as paper, film or foil, which is flexible enough to be wound or unwound as rolls.

(31) "Web coating line" means any number of work stations, of which one or more applies a continuous layer of coating material across the entire width or any portion of the width of a web substrate, and any associated curing or drying equipment between an unwind or feed station and a rewind or cutting station.

(32) "Work station" means a unit on a web coating line where coating material is deposited onto a web substrate.

(33) "You" means the owner or operator of a new or existing facility that is a major source of HAP at which web coating lines are operated.

(34) "Your" means of or relating to the owner or operator of a new or existing facility that is a major source of HAP at which web coating line are operated.

History: **CR 07−045: cr. Register April 2008 No. 628, eff. 5−1−08.**

NR 466.23 Emission standards and compliance dates. (1) WHAT EMISSION STANDARDS MUST I MEET? (a) If you own or operate any affected source that is subject to the requirements of this subchapter, you shall comply with the requirements in this section on and after the compliance dates specified in sub. (3).

(b) You shall limit organic HAP emissions to the level specified in one of the following:

1. No more than 5% of the organic HAP applied for each month (95% reduction) at existing affected sources and no more than 2% of the organic HAP applied for each month (98% reduction) at new affected sources.

2. No more than 4% of the mass of coating materials applied for each month at existing affected sources and no more than 1.6% of the mass of coating materials applied for each month at new affected sources.

3. No more than 20% of the mass of coating solids applied for each month at existing affected sources and no more than 8% of the coating solids applied for each month at new affected sources.

4. If you use an oxidizer to control organic HAP emissions, operate the oxidizer such that an outlet organic HAP concentration of no greater than 20 parts per million by volume (ppmv) by compound on a dry basis is achieved and the efficiency of the capture system is 100%.

(c) You shall demonstrate compliance with this subchapter by following the procedures in s. NR 466.25.

(2) WHAT OPERATING LIMITS MUST I MEET? (a) For any web coating line or group of web coating lines for which you use add−on control devices, unless you use a solvent recovery system and conduct a liquid−liquid material balance, you shall meet the operating limits specified in Table 1 of this subchapter or the requirements in par. (b). The operating limits apply to emission capture systems and control devices, and you shall establish the operating limits during the performance test according to the requirements in s. NR 466.24 (3) (e) 3. You shall meet the operating limits at all times after you establish them.

(b) If you use an add−on control device other than those listed in Table 1 of this subchapter or wish to monitor an alternative parameter and comply with a different operating limit, you shall apply to the administrator for approval of alternative monitoring under s. NR 460.07 (6).

(3) WHEN MUST I COMPLY? (a) If you own or operate an existing affected source subject to the provisions of this subchapter, you shall comply by the compliance date. The compliance date for existing affected sources is December 5, 2005. You shall complete any performance test required in s. NR 466.24 (3) within the time limits specified in s. NR 460.06 (1) (b).

(b) If you own or operate a new affected source subject to the provisions of this subchapter, your compliance date is immediately upon start−up of the new affected source or by December 4, 2002, whichever is later. You shall complete any performance test required in s. NR 466.24 (3) within the time limits specified in s. NR 460.06 (1) (b).

(c) If you own or operate a reconstructed affected source subject to the provisions of this subchapter, your compliance date is immediately upon startup of the affected source or by December 4, 2002, whichever is later. Existing affected sources which have undergone reconstruction as defined in s. NR 460.02 are subject to the requirements for new affected sources. The costs associated with the purchase and installation of air pollution control equipment are not considered in determining whether the existing affected source has been reconstructed. Additionally, the costs of retrofitting and replacing equipment that is installed specifically to comply with this subchapter are not considered reconstruction costs. You shall complete any performance test required in s. NR 466.24 (3) within the time limits specified in s. NR 460.06 (1) (b).

History: **CR 07−045: cr. Register April 2008 No. 628, eff. 5−1−08.**

NR 466.24 General requirements for compliance with the emission standards and for monitoring and performance tests. (1) WHAT GENERAL REQUIREMENTS MUST I MEET TO COMPLY WITH THE STANDARDS? You shall comply with the applicable general provisions of ch. NR 460 as specified in ch. NR 460 Appendix JJJJ.

(2) IF I USE A CONTROL DEVICE TO COMPLY WITH THE EMISSION STANDARDS, WHAT MONITORING MUST I DO? (a) *Summary.* A summary of monitoring you shall do follows:

Monitoring Summary

If you operate a web coating line, and you have the following:	Then you shall:
1. Intermittently−controlled work stations	Record parameters related to possible exhaust flow bypass of control device and to coating use (par. (c))
2. Solvent recovery unit	Operate continuous emission monitoring system and perform quarterly audits or determine volatile matter recovered and conduct a liquid−liquid material balance (par. (d))
3. Control device	Operate continuous parameter monitoring system (par. (e))
4. Capture system	Monitor capture system operating parameter (par. (f))

(b) *Capture system and control device monitoring.* Following the date on which the initial performance test of a control device is completed to demonstrate continuing compliance with the standards, you shall monitor and inspect each capture system and each control device used to comply with s. NR 466.23 (1). You shall install and operate the monitoring equipment as specified in pars. (c) and (f).

(c) *Bypass and coating use monitoring.* If you own or operate web coating lines with intermittently−controlled work stations, you shall monitor bypasses of the control device and the mass of each coating material applied at the work station during any bypass. If using a control device for complying with the requirements of this subchapter, you shall demonstrate that any coating material applied on a never−controlled work station or an intermittently−controlled work station operated in bypass mode is allowed in your compliance demonstration according to s. NR 466.25 (14) and (15). The bypass monitoring shall be conducted using at least one of the procedures in subds. 1. to 4. for each work station and associated dryer.

1. 'Flow control position indicator.' Install, calibrate, maintain and operate according to the manufacturer's specifications a flow control position indicator that provides a record indicating whether the exhaust stream from the dryer was directed to the control device or was diverted from the control device. The time and flow control position shall be recorded at least once per hour as well as every time the flow direction is changed. A flow control position indicator shall be installed at the entrance to any bypass line that could divert the exhaust stream away from the control device to the atmosphere.

2. 'Car−seal or lock−and−key valve closures.' Secure any bypass line valve in the closed position with a car−seal or a lock−and−key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve or damper is maintained in the closed position, and the exhaust stream is not diverted through the bypass line.

3. 'Valve closure continuous monitoring.' Ensure that any bypass line valve or damper is in the closed position through continuous monitoring of valve position when the emission source is in operation and is using a control device for compliance with the requirements of this subchapter. The monitoring system shall be inspected at least once every month to verify that the monitor will indicate valve position.

4. 'Automatic shutdown system.' Use an automatic shutdown system in which the web coating line is stopped when flow is diverted away from the control device to any bypass line when the control device is in operation. The automatic system shall be inspected at least once every month to verify that it will detect diversions of flow and would shut down operations in the event of such a diversion.

(d) *Solvent recovery unit.* If you own or operate a solvent recovery unit to comply with s. NR 466.23 (1), you shall meet the requirements in either subd. 1. or 2., depending on how control efficiency is determined.

1. 'Continuous emission monitoring system (CEMS).' If you are demonstrating compliance with the emission standards in s. NR 466.23 (1) through continuous emission monitoring of a control device, you shall install, calibrate, operate and maintain the CEMS according to subd. 1. a. to c.

a. Measure the total organic volatile matter mass flow rate at both the control device inlet and the outlet such that the reduction efficiency can be determined. Each continuous emission monitor shall comply with performance specification 6, 8 or 9, as appropriate, of 40 CFR part 60, Appendix B, incorporated by reference in s. NR 484.04 (21).

b. You shall follow the quality assurance procedures in procedure 1, of 40 CFR part 60, Appendix F, incorporated by reference in s. NR 484.04 (21m). In conducting the quarterly audits of the monitors as required by procedure 1, Appendix F, you shall use compounds representative of the gaseous emission stream being controlled.

c. You shall have valid data from at least 90% of the hours during which the process is operated.

2. 'Liquid−liquid material balance.' If you are demonstrating compliance with the emission standards in s. NR 466.23 (1) through liquid−liquid material balance, you shall install, calibrate, maintain and operate according to the manufacturer's specifications a device that indicates the cumulative amount of volatile matter recovered by the solvent recovery device on a monthly basis. The device shall be certified by the manufacturer to be accurate to within ±2.0% by mass.

(e) *Continuous parameter monitoring system (CPMS).* If you are using a control device to comply with the emission standards in s. NR 466.23 (1), you shall install, operate and maintain each CPMS specified in subds. 9. and 10. and par. (f) according to the requirements in subds. 1. to 8. You shall install, operate and maintain each CPMS specified in par. (c) according to subds. 5. to 7.

1. Each CPMS shall complete a minimum of one cycle of operation for each successive 15−minute period. You shall have a minimum of 4 equally spaced successive cycles of CPMS operation to have a valid hour of data.

2. You shall have valid data from at least 90% of the hours during which the process operated.

3. You shall determine the hourly average of all recorded readings according to subd. 3. a. and b.

a. To calculate a valid hourly value, you shall have at least 3 of 4 equally spaced data values from that hour from a continuous monitoring system (CMS) that is not out−of−control.

b. Provided all of the readings recorded in accordance with this subdivision clearly demonstrate continuous compliance with the standard that applies to you, then you are not required to determine the hourly average of all recorded readings.

4. You shall determine the rolling 3−hour average of all recorded readings for each operating period. To calculate the average for each 3−hour averaging period, you shall have at least 2 of 3 of the hourly averages for that period using only average values that are based on valid data not from out−of−control periods.

5. You shall record the results of each inspection, calibration and validation check of the CPMS.

6. At all times, you shall maintain the monitoring system in proper working order, including maintaining necessary parts for routine repairs of the monitoring equipment.

7. Except for monitoring malfunctions, associated repairs or required quality assurance or control activities, including calibration checks or required zero and span adjustments, you shall conduct all monitoring at all times that the unit is operating. Data recorded during monitoring malfunctions, associated repairs, out−of−control periods or required quality assurance or control activities may not be used for purposes of calculating the emissions concentrations and percent reductions specified in s. NR 466.25 (1). You shall use all the valid data collected during all other periods in assessing compliance of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

8. Any averaging period for which you do not have valid monitoring data, and the data are required, constitutes a deviation, and you shall notify the department in accordance with s. NR 466.26 (1) (c).

9. If you are using an oxidizer to comply with the emission standards, you shall comply with subd. 9. a. to c.

a. Install, calibrate, maintain and operate temperature monitoring equipment according to the manufacturer's specifications.

The calibration of the chart recorder, data logger or temperature indicator shall be verified every 3 months or the chart recorder, data logger or temperature indicator shall be replaced. You shall replace the equipment whether you choose not to perform the calibration or the equipment cannot be calibrated properly.

b. For an oxidizer other than a catalytic oxidizer, install, calibrate, operate and maintain a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of ±1% of the temperature being monitored in degrees Celsius, or ±1° Celsius, whichever is greater. The thermocouple or temperature sensor shall be installed in the combustion chamber at a location in the combustion zone.

c. For a catalytic oxidizer, install, calibrate, operate and maintain a temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature with an accuracy of ±1% of the temperature being monitored in degrees Celsius or ±1° Celsius, whichever is greater. The thermocouple or temperature sensor shall be installed in the vent stream at the nearest feasible point to the inlet and outlet of the catalyst bed. Calculate the temperature rise across the catalyst.

10. If you use a control device other than an oxidizer or wish to monitor an alternative parameter and comply with a different operating limit, you shall apply to the department for approval of an alternative monitoring method under s. NR 460.07 (6).

(f) *Capture system monitoring.* If you are complying with the emission standards in s. NR 466.23 (1) through the use of a capture system and control device for one or more web coating lines, you shall develop a site−specific monitoring plan containing the information specified in subds. 1. and 2. for the capture systems. You shall monitor the capture system in accordance with subd. 3. You shall make the monitoring plan available for inspection by the department upon request.

1. The monitoring plan shall do all of the following:

a. Identify the operating parameter to be monitored to ensure that the capture efficiency determined during the initial compliance test is maintained.

b. Explain why the operating parameter is appropriate for demonstrating ongoing compliance.

c. Identify the specific monitoring procedures.

2. The monitoring plan shall specify the operating parameter value or range of values that demonstrate compliance with the emission standards in s. NR 466.23 (1). The specified operating parameter value or range of values shall represent the conditions present when the capture system is being properly operated and maintained.

3. You shall conduct all capture system monitoring in accordance with the plan.

4. Any deviation from the operating parameter value or range of values which are monitored according to the plan will be considered a deviation from the operating limit.

5. You shall review and update the capture system monitoring plan at least annually.

(3) WHAT PERFORMANCE TESTS SHALL I CONDUCT? (a) *Performance test methods.* The performance test methods you shall use are as follows:

Performance Test Methods

If you control organic HAP on any individual web coating line or any group of web coating lines by:	**You shall:**
1. Limiting organic HAP or volatile matter content of coatings	Determine the organic HAP or volatile matter and coating solids content of coating materials according to procedures in pars. (c) and (d). If applicable, determine the mass of volatile matter retained in the coated web or otherwise not emitted to the atmosphere according to par. (g).
2. Using a capture and control system	Conduct a performance test for each capture and control system to determine the destruction or removal efficiency of each control device other than solvent recovery according to par. (e) and the capture efficiency of each capture system according to par. (f). If applicable, determine the mass of volatile matter retained in the coated web or otherwise not emitted to the atmosphere according to par. (g).

(b) *Exceptions.* If you are using a control device to comply with the emission standards in s. NR 466.23 (1), you are not required to conduct a performance test to demonstrate compliance if one or more of the criteria in subds. 1. to 3. are met.

1. The control device is equipped with continuous emission monitors for determining inlet and outlet total organic volatile matter concentration and capture efficiency has been determined in accordance with the requirements of this subchapter such that an overall organic HAP control efficiency can be calculated, and the continuous emission monitors are used to demonstrate continuous compliance in accordance with sub. (2).

2. You have met the requirements of s. NR 460.06 (7) for waiver of performance testing.

3. The control device is a solvent recovery system and you comply by means of a monthly liquid−liquid material balance.

(c) *Organic HAP content.* If you determine compliance with the emission standards in s. NR 466.23 (1) by means other than determining the overall organic HAP control efficiency of a control device, you shall determine the organic HAP mass fraction of each coating material as−purchased by following one of the procedures in subds. 1. to 3., and determine the organic HAP mass fraction of each coating material as−applied by following the procedures in subd. 4. If the organic HAP content values are not determined using the procedures in subds. 1. to 3., you shall submit an alternative test method for determining their values for approval by the administrator in accordance with 40 CFR 63.7 (f). The recovery efficiency of the test method shall be determined for all of the target organic HAP and a correction factor, if necessary, shall be determined and applied.

1. 'Method 311.' You may test the coating material in accordance with Method 311 of 40 CFR part 63, Appendix A, incorporated by reference in s. NR 484.04 (25). The Method 311 determination may be performed by the manufacturer of the coating material and the results provided to the owner or operator. The organic HAP content shall be calculated according to the criteria and procedures in subd. 1. a. to c.

a. Include each organic HAP determined to be present at greater than or equal to 0.1% by mass for the United States occupational safety and health administration−defined (OSHA−defined) carcinogens as specified in 29 CFR 1910.1200 (d) (4) and greater than or equal to 1.0% by mass for other organic HAP compounds.

b. Express the mass fraction of each organic HAP you include according to subd. 1. a. as a value truncated to 4 places after the decimal point, e.g., 0.3791.

c. Calculate the total mass fraction of organic HAP in the tested material by summing the counted individual organic HAP mass fractions and truncating the result to 3 places after the decimal point, e.g., 0.763.

2. 'Method 24.' For coatings, determine the volatile organic content as mass fraction of non−aqueous volatile matter and use it as a substitute for organic HAP using Method 24 of 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13). The Method 24 determination may be performed by the manufacturer of the coating and the results provided to you.

3. 'Formulation data.' You may use formulation data to determine the organic HAP mass fraction of a coating material. Formulation data may be provided to you by the manufacturer of the material. In the event of an inconsistency between Method 311 of 40 CFR part 63, Appendix A, incorporated by reference in s. NR 484.04 (25), test data and a facility's formulation data, and the Method 311 test value is higher, the Method 311 data will govern. Formulation data may be used provided that the information represents all organic HAP present at a level equal to or greater than 0.1% for OSHA−defined carcinogens as specified in 29 CFR 1910.1200 (d) (4) and equal to or greater than 1.0% for other organic HAP compounds in any raw material used.

4. 'As−applied organic HAP mass fraction.' If the as−purchased coating material is applied to the web without any solvent or other material added, the as−applied organic HAP mass fraction is equal to the as−purchased organic HAP mass fraction. Otherwise, the as−applied organic HAP mass fraction shall be calculated using Equation 1a of s. NR 466.25.

(d) *Volatile organic and coating solids content.* If you determine compliance with the emission standards in s. NR 466.23 (1) by means other than determining the overall organic HAP control efficiency of a control device and you choose to use the volatile organic content as a surrogate for the organic HAP content of coatings, you shall determine the as−purchased volatile organic content and coating solids content of each coating material applied by following the procedures in subd. 1. or 2. and the as−applied volatile organic content and coating solids content of each coating material by following the procedures in subd. 3.

1. 'Method 24.' You may determine the volatile organic and coating solids mass fraction of each coating applied using Method 24 in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13). The Method 24 determination may be performed by the manufacturer of the material and the results provided to you. If these values cannot be determined using Method 24, you shall submit an alternative technique for determining their values for approval by the administrator.

2. 'Formulation data.' You may determine the volatile organic content and coating solids content of a coating material based on formulation data and may rely on volatile organic content data provided by the manufacturer of the material. In the event of any inconsistency between the formulation data and the results of Method 24 in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13), and the Method 24 results are higher, the results of Method 24 will govern.

3. 'As−applied volatile organic content and coating solids content.' If the as−purchased coating material is applied to the web without any solvent or other material added, the as−applied volatile organic content is equal to the as−purchased volatile content and the as−applied coating solids content is equal to the as−purchased coating solids content. Otherwise, the as−applied volatile organic content shall be calculated using Equation 1b of s. NR 466.25 and the as−applied coating solids content shall be calculated using Equation 2 of s. NR 466.25.

(e) *Control device efficiency.* If you are using an add−on control device other than solvent recovery, such as an oxidizer, to comply with the emission standards in s. NR 466.23 (1), you shall conduct a performance test to establish the destruction or removal efficiency of the control device according to the methods and procedures in subds. 1. and 2. During the performance test, you shall establish the operating limits required by s. NR 466.23 (2) according to subd. 3.

1. An initial performance test to establish the destruction or removal efficiency of the control device shall be conducted such that control device inlet and outlet testing is conducted simultaneously and the data are reduced in accordance with the test methods and procedures in subd. 1. a. to i. You shall conduct 3 test runs as specified in s. NR 460.06 (4) (c), and each test run shall last at least one hour.

a. Method 1 or 1A of 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13), shall be used for sample and velocity traverses to determine sampling locations.

b. Method 2, 2A, 2C, 2D, 2F or 2G of 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13), shall be used to determine gas volumetric flow rate.

c. Method 3, 3A or 3B of 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13), shall be used for gas analysis to determine dry molecular weight. You may also use as an alternative to Method 3B the manual method for measuring the oxygen, carbon dioxide and carbon monoxide content of exhaust

gas in ANSI/ASME PTC 19.10−1981, "Flue and Exhaust Gas Analyses, Part 10, Instruments and Apparatus", incorporated by reference in s. NR 484.11 (6) (b).

d. Method 4 of 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13), shall be used to determine stack gas moisture.

e. The gas volumetric flow rate, dry molecular weight and stack gas moisture shall be determined during each test run specified in subd. 1. g.

f. Method 25 or 25A of 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13), shall be used to determine total gaseous non−methane organic matter concentration. Use the same test method for both the inlet and outlet measurements which shall be conducted simultaneously. You shall submit notice of the intended test method to the department for approval along with notification of the performance test required under s. NR 460.06 (2). You shall use Method 25A if any of the following 4 conditions apply to the control device:

1) The control device is not an oxidizer.

2) The control device is an oxidizer but an exhaust gas volatile organic matter concentration of 50 ppmv or less is required to comply with the emission standards in s. NR 466.23 (1).

3) The control device is an oxidizer but the volatile organic matter concentration at the inlet to the control system and the required level of control are such that they result in exhaust gas volatile organic matter concentrations of 50 ppmv or less.

4) The control device is an oxidizer but, because of the high efficiency of the control device, the anticipated volatile organic matter concentration at the control device exhaust is 50 ppmv or less, regardless of inlet concentration.

g. Except as provided in s. NR 460.06 (4) (c), each performance test shall consist of 3 separate runs with each run conducted for at least one hour under the conditions that exist when the affected source is operating under normal operating conditions. For the purpose of determining volatile organic compound concentrations and mass flow rates, the average of the results of all the runs shall apply.

h. Volatile organic matter mass flow rates shall be determined for each run specified in subd. 1. g. using Equation 1:

$$M_f = Q_{sd} C_c [12] [0.0416] [10^{-6}] \qquad \text{(Equation 1)}$$

where:

M_f is the total organic volatile matter mass flow rate in kilograms (kg)/hour (h)

Q_{sd} is the volumetric flow rate of gases entering or exiting the control device, as determined according to par. (e) 1. b., dry standard cubic meters (dscm)/h

C_c is the concentration of organic compounds as carbon, ppmv

12.0 is the molecular weight of carbon

0.0416 is a conversion factor for molar volume, kg−moles per cubic meter (mol/m^3) at 293 Kelvin (K) and 760 millimeters of mercury (mmHg)

i. For each run, emission control device destruction or removal efficiency shall be determined using Equation 2:

$$E = \frac{M_{fi} - M_{fo}}{M_{fi}} x100 \qquad \text{(Equation 2)}$$

where:

E is the organic volatile matter control efficiency of the control device, percent

M_{fi} is the organic volatile matter mass flow rate at the inlet to the control device, kg/h

M_{fo} is the organic volatile matter mass flow rate at the outlet of the control device, kg/h

j. The control device destruction or removal efficiency is determined as the average of the efficiencies determined in the test runs and calculated in Equation 2 of this section.

2. You shall record process information as may be necessary to determine the conditions in existence at the time of the performance test. Operations during periods of startup, shutdown and malfunction will not constitute representative conditions for the purpose of a performance test.

3. If you are using one or more add−on control devices other than a solvent recovery system for which you conduct a liquid−liquid material balance to comply with the emission standards in s. NR 466.23 (1), you shall establish the applicable operating limits required by s. NR 466.23 (2). The operating limits apply to each add−on emission control device, and you shall establish the operating limits during the performance test required by this paragraph according to the requirements in subd. 3. a. or b.

a. If your add−on control device is a thermal oxidizer, establish the operating limits according to the following 2 requirements:

1) During the performance test, you shall monitor and record the combustion temperature at least once every 15 minutes during each of the 3 test runs. You shall monitor the temperature in the firebox of the thermal oxidizer or immediately downstream of the firebox before any substantial heat exchange occurs.

2) Use the data collected during the performance test to calculate and record the average combustion temperature maintained during the performance test. This average combustion temperature is the minimum operating limit for your thermal oxidizer.

b. If your add−on control device is a catalytic oxidizer, establish the operating limits according to subd. 3. b. 1) and 2) or 3. b. 3) and 4):

1) During the performance test, you shall monitor and record the temperature just before the catalyst bed and the temperature difference across the catalyst bed at least once every 15 minutes during each of the 3 test runs.

2) Use the data collected during the performance test to calculate and record the average temperature just before the catalyst bed and the average temperature difference across the catalyst bed maintained during the performance test. These are the minimum operating limits for your catalytic oxidizer.

3) As an alternative to monitoring the temperature difference across the catalyst bed, you may monitor the temperature at the inlet to the catalyst bed and implement a site−specific inspection and maintenance plan for your catalytic oxidizer as specified in subd. 3. b. 4). During the performance test, you shall monitor and record the temperature just before the catalyst bed at least once every 15 minutes during each of the 3 test runs. Use the data collected during the performance test to calculate and record the average temperature just before the catalyst bed during the performance test. This is the minimum operating limit for your catalytic oxidizer.

4) You shall develop and implement an inspection and maintenance plan for the catalytic oxidizers which you elect to monitor according to subd. 3. b. 3). The plan shall address, at a minimum, all of the following elements:

a) Annual sampling and analysis of the catalyst activity, i.e., conversion efficiency, following the manufacturer's or catalyst supplier's recommended procedures.

b) Monthly inspection of the oxidizer system including the burner assembly and fuel supply lines for problems.

c) Annual internal and monthly external visual inspection of the catalyst bed to check for channeling, abrasion and settling. If problems are found, you shall take corrective action consistent with the manufacturer's recommendations and conduct a new performance test to determine destruction efficiency in accordance with this section.

(f) *Capture efficiency.* If you demonstrate compliance by meeting the requirements of s. NR 466.25 (5), (6), (7), (11), (14) (b) or (c) or (16), you shall determine capture efficiency using the procedures in subd. 1., 2. or 3., as applicable.

1. You may assume your capture efficiency equals 100% if your capture system is a permanent total enclosure (PTE). You shall confirm that your capture system is a PTE by demonstrating that it meets the requirements of section 6 of Method 204 of 40 CFR part 51, Appendix M, incorporated by reference in s. NR 484.04 (9), and that all exhaust gases from the enclosure are delivered to a control device.

2. You may determine capture efficiency according to the protocols for testing with temporary total enclosures that are specified in Methods 204 and 204A through F of 40 CFR part 51, Appendix M, incorporated by reference in s. NR 484.04 (9). You may exclude never−controlled work stations from such capture efficiency determinations.

3. You may use any capture efficiency protocol and test methods that satisfy the criteria of either the data quality objective or the lower confidence limit approach as described in 40 CFR part 63, Subpart KK, Appendix A, incorporated by reference in s. NR 484.04 (24). You may exclude never−controlled work stations from capture efficiency determinations made under this subdivision.

(g) *Volatile matter retained in the coated web or otherwise not emitted to the atmosphere.* You may choose to take into account the mass of volatile matter retained in the coated web after curing or drying or otherwise not emitted to the atmosphere when determining compliance with the emission standards in s. NR 466.23 (1). If you choose this option, you shall develop a testing protocol to determine the mass of volatile matter retained in the coated web or otherwise not emitted to the atmosphere and submit this protocol to the department for approval. You shall submit this protocol with your site−specific test plan under s. NR 460.06 (5). If you intend to take into account the mass of volatile matter retained in the coated web after curing or drying or otherwise not emitted to the atmosphere and demonstrate compliance according to s. NR 466.25 (3) (c), (d), (e) or (4), the test protocol you submit shall determine the mass of organic HAP retained in the coated web or otherwise not emitted to the atmosphere. Otherwise, compliance shall be shown using the volatile organic matter content as a surrogate for the HAP content of the coatings.

(h) *Control devices in series.* If you use multiple control devices in series to comply with the emission standards in s. NR 466.23 (1), the performance test shall include, at a minimum, the inlet to the first control device in the series, the outlet of the last control device in the series, and all intermediate streams, such as gaseous exhaust to the atmosphere or a liquid stream from a recovery device, that are not subsequently treated by any of the control devices in the series.

History: CR 07−045: cr. Register April 2008 No. 628, eff. 5−1−08; correction in (3) (f) 1. made under s. 13.92 (4) (b) 7., Stats., Register April 2008 No. 628.

NR 466.25 Requirements for showing compliance. (1) SUMMARY. A summary of how you shall demonstrate compliance with the emission standards follows:

Compliance Demonstration

If you choose to demonstrate compliance by:	Then you shall demonstrate that:	Using these procedures:
(a) Use of "as−purchased" compliant coating materials.	1. Each coating material used at an existing affected source does not exceed 0.04 kg of organic HAP per kg of coating material, and each coating material used at a new affected source does not exceed 0.016 kg of organic HAP per kg of coating material as purchased; or	Follow the procedures set out in sub. (2).
	2. Each coating material used at an existing affected source does not exceed 0.2 kg of organic HAP per kg of coating solids, and each coating material used at a new affected source does not exceed 0.08 kg of organic HAP per kg of coating solids as purchased.	Follow the procedures set out in sub. (2).
(b) Use of "as−applied" compliant coating materials.	1. Each coating material used at an existing affected source does not exceed 0.04 kg of organic HAP per kg of coating material, and each coating material used at a new affected source does not exceed 0.016 kg of organic HAP per kg of coating material as applied; or	Follow the procedures set out in sub. (3) (a). Use either Equation 1a or b of this section to determine compliance with s. NR 466.23 (1) (b) 2. in accordance with sub. (3) (e) 1.
	2. Each coating material used at an existing affected source does not exceed 0.2 kg of organic HAP per kg of coating solids, and each coating material used at a new affected source does not exceed 0.08 kg of organic HAP per kg of coating solids as applied; or	Follow the procedures set out in sub. (3) (b). Use Equations 2 and 3 of this section to determine compliance with s. NR 466.23 (1) (b) 3. in accordance with sub. (3) (e) 1.

If you choose to demonstrate compliance by:	Then you shall demonstrate that:	Using these procedures:
	3. Monthly average of all coating materials used at an existing affected source does not exceed 0.04 kg of organic HAP per kg of coating material, and monthly average of all coating materials used at a new affected source does not exceed 0.016 kg of organic HAP per kg of coating material as applied on a monthly average basis; or	Follow the procedures set out in sub. (3) (c). Use Equation 4 of this section to determine compliance with s. NR 466.23 (1) (b) 2. in accordance with sub. (3) (e) 2.
	4. Monthly average of all coating materials used at an existing affected source does not exceed 0.2 kg of organic HAP per kg of coating solids, and monthly average of all coating materials used at a new affected source does not exceed 0.08 kg of organic HAP per kg of coating solids as applied on a monthly average basis.	Follow the procedures set out in sub. (3) (d). Use Equation 5 of this section to determine compliance with s. NR 466.23 (1) (b) 3. in accordance with sub. (3) (e) 2.
(c) Tracking total monthly organic HAP applied.	Total monthly organic HAP applied does not exceed the calculated limit based on emission limitations.	Follow the procedures set out in sub. (4). Show that total monthly HAP applied, calculated using Equation 6 of this section, is less than the equivalent allowable organic HAP calculated using Equation 13a or b of this section.
(d) Use of a capture system and control device.	1. Overall organic HAP control efficiency is equal to 95% at an existing affected source and 98% at a new affected source on a monthly basis; or oxidizer outlet organic HAP concentration is no greater than 20 ppmv by compound and capture efficiency is 100%; or operating parameters are continuously monitored; or	Follow the procedures set out in sub. (5) to determine compliance with s. NR 466.23 (1) (b) 1. according to sub. (9) if using a solvent recovery device or sub. (10) if a using control device and CPMS or sub. (11) if using an oxidizer.
	2. Overall organic HAP emission rate does not exceed 0.2 kg of organic HAP per kg of coating solids for an existing affected source or 0.08 kg of organic HAP per kg of coating solids for a new affected source on a monthly average as−applied basis; or	Follow the procedures set out in sub. (6) to determine compliance with s. NR 466.23 (1) (b) 3. according to sub. (9) if using a solvent recovery device or sub. (11) if using an oxidizer.
	3. Overall organic HAP emission rate does not exceed 0.04 kg of organic HAP per kg of coating material for an existing affected source or 0.016 kg of organic HAP per kg of coating material for a new affected source on a monthly average as−applied basis; or	Follow the procedures set out in sub. (7) to determine compliance with s. NR 466.23 (1) (b) 2. according to sub. (9) if using a solvent recovery device or sub. (11) if using an oxidizer.
	4. Overall organic HAP emission rate does not exceed the calculated limit based on emission limitations.	Follow the procedures set out in sub. (8). Show that the monthly organic HAP emission rate is less than the equivalent allowable organic HAP emission rate calculated using Equation 13a or b of this section. Calculate the monthly organic HAP emission rate according to sub. (9) if using a solvent recovery device or sub. (11) if using an oxidizer.

If you choose to demonstrate compliance by:	Then you shall demonstrate that:	Using these procedures:
(e) Use of multiple capture devices, multiple control devices or both.	1. Overall organic HAP control efficiency is equal to 95% at an existing affected source and 98% at a new affected source on a monthly basis; or	Follow the procedures set out in sub. (5) to determine compliance with s. NR 466.23 (1) (b) 1. according to sub. (5) (a) or (b).
	2. Average equivalent organic HAP emission rate does not exceed 0.2 kg of organic HAP per kg of coating solids for an existing affected source or 0.08 kg of organic HAP per kg of coating solids for a new affected source on a monthly average as−applied basis; or	Follow the procedures set out in sub. (6) to determine compliance with s. NR 466.23 (1) (b) 3. according to sub. (14).
	3. Average equivalent organic HAP emission rate does not exceed 0.04 kg of organic HAP per kg of coating material for an existing affected source or 0.016 kg of organic HAP per kg of coating material for a new affected source on a monthly average as−applied basis; or	Follow the procedures set out in sub. (7) to determine compliance with s. NR 466.23 (1) (b) 2. according to sub. (14).
	4. Average equivalent organic HAP emission rate does not exceed the calculated limit based on emission limitations.	Follow the procedures set out in sub. (8). Show that the monthly organic HAP emission rate is less than the equivalent allowable organic HAP emission rate calculated using Equation 13a or b of this section according to sub. (14).
(f) Use of a combination of compliant coatings and control devices.	1. Average equivalent organic HAP emission rate does not exceed 0.2 kg of organic HAP per kg of coating solids for an existing affected source or 0.08 kg of organic HAP per kg of coating solids for a new affected source on a monthly average as−applied basis; or	Follow the procedures set out in sub. (6) to determine compliance with s. NR 466.23 (1) (b) 3. according to sub. (14).
	2. Average equivalent organic HAP emission rate does not exceed 0.04 kg of organic HAP per kg of coating material for an existing affected source or 0.016 kg of organic HAP per kg of coating material for a new affected source on a monthly average as−applied basis; or	Follow the procedures set out in sub. (7) to determine compliance with s. NR 466.23 (1) (b) 2. according to sub. (14).
	3. Average equivalent organic HAP emission rate does not exceed the calculated limit based on emission limitations.	Follow the procedures set out in sub. (8). Show that the monthly organic HAP emission rate is less than the equivalent allowable organic HAP emission rate calculated using Equation 13a or b of this section according to sub. (14).

(2) AS−PURCHASED "COMPLIANT" COATING MATERIALS. (a) If you comply by using coating materials that individually meet the emission standards in s. NR 466.23 (1) (b) 2. or 3., you shall demonstrate that each coating material applied during the month at an existing affected source contains no more than 0.04 mass fraction of organic HAP or 0.2 kg of organic HAP per kg of coating solids, and that each coating material applied during the month at a new affected source contains no more than 0.016 mass fraction of organic HAP or 0.08 kg of organic HAP per kg of coating solids on an as−purchased basis as determined in accordance with s. NR 466.24 (3) (c).

(b) You are in compliance with emission standards in s. NR 466.23 (1) (b) 2. and 3. if each coating material applied at an existing affected source is applied as−purchased and contains no more than 0.04 kg of organic HAP per kg of coating material or 0.2 kg of organic HAP per kg of coating solids, and each coating material applied at a new affected source is applied as−purchased and contains no more than 0.016 kg of organic HAP per kg of coating material or 0.08 kg of organic HAP per kg of coating solids.

(3) AS−APPLIED "COMPLIANT" COATING MATERIALS. If you comply by using coating materials that meet the emission standards in

s. NR 466.23 (1) (b) 2. or 3. as−applied, you shall demonstrate compliance by following one of the procedures in pars. (a) to (d). You shall determine compliance in accordance with par. (e).

(a) *Each coating material as−applied meets the mass fraction of coating material standard in s. NR 466.23 (1) (b) 2.* You shall demonstrate that each coating material applied at an existing affected source during the month contains no more than 0.04 kg of organic HAP per kg of coating material applied, and each coating material applied at a new affected source contains no more than 0.016 kg of organic HAP per kg of coating material applied as determined in accordance with subds. 1. and 2. You shall calculate the as−applied organic HAP content of as−purchased coating materials which are reduced, thinned or diluted prior to application.

1. Determine the organic HAP content or volatile organic content of each coating material applied on an as−purchased basis in accordance with s. NR 466.24 (3) (c).

2. Calculate the as−applied organic HAP content of each coating material using Equation 1a or calculate the as−applied volatile organic content of each coating material using Equation 1b:

$$C_{ahi} = \frac{\left(C_{hi} M_i + \sum_{j=1}^{q} C_{hij} M_{ij}\right)}{M_i + \sum_{j=1}^{q} M_{ij}} \qquad \text{(Equation 1a)}$$

where:

C_{ahi} is the monthly average, as−applied, organic HAP content of coating material, i, expressed as a mass fraction, kg/kg

C_{hi} is the organic HAP content of coating material, i, as−purchased, expressed as a mass fraction, kg/kg

M_i is the mass of as−purchased coating material, i, applied in a month, kg

q is the number of different materials added to the coating material

C_{hij} is the organic HAP content of material, j, added to as−purchased coating material, i, expressed as a mass fraction, kg/kg

M_{ij} is the mass of material, j, added to as−purchased coating material, i, in a month, kg

M_i is the mass of as−purchased coating material, i, applied in a month, kg

$$C_{avi} = \frac{\left(C_{vi} M_i + \sum_{j=1}^{q} C_{vij} M_{ij}\right)}{M_i + \sum_{j=1}^{q} M_{ij}} \qquad \text{(Equation 1b)}$$

where:

C_{avi} is the monthly average, as−applied, volatile organic content of coating material, i, expressed as a mass fraction, kg/kg

C_{vi} is the volatile organic content of coating material, i, expressed as a mass fraction, kg/kg

M_i is the mass of as−purchased coating material, i, applied in a month, kg

q is the number of different materials added to the coating material

C_{vij} is the volatile organic content of material, j, added to as−purchased coating material, i, expressed as a mass fraction, kg/kg

M_{ij} is the mass of material, j, added to as−purchased coating material, i, in a month, kg

(b) *Each coating material as−applied meets the mass fraction of coating solids standard in s. NR 466.23 (1) (b) 3.* You shall demonstrate that each coating material applied at an existing affected source contains no more than 0.20 kg of organic HAP per kg of coating solids applied and each coating material applied at a new affected source contains no more than 0.08 kg of organic HAP per kg of coating solids applied. You shall demonstrate compliance in accordance with subds. 1. and 2.

1. Determine the as−applied coating solids content of each coating material following the procedure in s. NR 466.24 (3) (d). You shall calculate the as−applied coating solids content of coating materials which are reduced, thinned or diluted prior to application, using Equation 2:

$$C_{asi} = \frac{\left(C_{si} M_i + \sum_{j=1}^{q} C_{sij} M_{ij}\right)}{M_i + \sum_{j=1}^{q} M_{ij}} \qquad \text{(Equation 2)}$$

where:

C_{si} is the coating solids content of coating material, i, expressed as a mass fraction, kg/kg

M_i is the mass of as−purchased coating material, i, applied in a month, kg

q is the number of different materials added to the coating material

C_{sij} is the coating solids content of material, j, added to as−purchased coating material, i, expressed as a mass−fraction, kg/kg

M_{ij} is the mass of material, j, added to as−purchased coating material, i, in a month, kg

2. Calculate the as−applied organic HAP to coating solids ratio using Equation 3:

$$H_{si} = \frac{C_{ahi}}{C_{asi}} \qquad \text{(Equation 3)}$$

where:

H_{si} is the as−applied, organic HAP to coating solids ratio of coating material, i

C_{ahi} is the monthly average, as−applied, organic HAP content of coating material, i, expressed as a mass fraction, kg/kg

C_{asi} is the monthly average, as−applied, coating solids content of coating material, i, expressed as a mass fraction, kg/kg

(c) *Monthly average organic HAP content of all coating materials as−applied is less than the mass percent limit in s. NR 466.23 (1) (b) 2.* Demonstrate that the monthly average as−applied organic HAP content of all coating materials applied at an existing affected source is less than 0.04 kg organic HAP per kg of coating material applied, and all coating materials applied at a new affected source are less than 0.016 kg organic HAP per kg of coating material applied, as determined by Equation 4:

$$H_L = \frac{\sum_{i=1}^{p} C_{hi} M_i + \sum_{j=1}^{q} C_{hij} M_{ij} - M_{vret}}{\sum_{i=1}^{p} M_i + \sum_{j=1}^{q} M_{ij}} \qquad \text{(Equation 4)}$$

where:

H_L is the monthly average, as−applied, organic HAP content of all coating materials applied, expressed as kg organic HAP per kg of coating material applied

p is the number of different coating materials applied in a month

C_{hi} is the organic HAP content of coating material, i, as−purchased, expressed as a mass fraction, kg/kg

M_i is the mass of as−purchased coating material, i, applied in a month, kg

q is the number of different materials added to the coating material

C_{hij} is the organic HAP content of material, j, added to as−purchased coating material, i, expressed as a mass fraction, kg/kg

M_{ij} is the mass of material, j, added to as−purchased coating material, i, in a month, kg

M_{vret} is the mass of volatile matter retained in the coated web after curing or drying, or otherwise not emitted to the atmosphere, kg. The value of this term will be zero in all cases except where you choose to take into account the volatile matter retained in the coated web or otherwise not emitted to the atmosphere for the compliance demonstration procedures in this section.

(d) *Monthly average organic HAP content of all coating materials as−applied is less than the mass fraction of coating solids limit in s. NR 466.23 (1) (b) 3.* Demonstrate that the monthly average as−applied organic HAP content on the basis of coating solids applied of all coating materials applied at an existing affected source is less than 0.20 kg of organic HAP per kg of coating solids applied, and all coating materials applied at a new affected source are less than 0.08 kg of organic HAP per kg of coating solids applied, as determined by Equation 5:

$$H_S = \frac{\sum_{i=1}^{p} C_{hi} M_i + \sum_{j=1}^{q} C_{hij} M_{ij} - M_{vret}}{\sum_{i=1}^{p} C_{si} M_i + \sum_{j=1}^{q} C_{sij} M_{ij}}$$

(Equation 5)

where:

H_s is the monthly average, as−applied, organic HAP to coating solids ratio, kg of organic HAP per kg of coating solids applied

p is the number of different coating materials applied in a month

C_{hi} is the organic HAP content of coating material, i, as−purchased, expressed as a mass fraction, kg/kg

M_i is the mass of as−purchased coating material, i, applied in a month, kg

q is the number of different materials added to the coating material

C_{hij} is the organic HAP content of material, j, added to as−purchased coating material, i, expressed as a mass fraction, kg/kg

M_{ij} is the mass of material, j, added to as−purchased coating material, i, in a month, kg

M_{vret} is the mass of volatile matter retained in the coated web after curing or drying, or otherwise not emitted to the atmosphere, kg. The value of this term will be zero in all cases except where you choose to take into account the volatile matter retained in the coated web or otherwise not emitted to the atmosphere for the compliance demonstration procedures in this section.

C_{si} is the coating solids content of coating material, i, expressed as a mass fraction, kg/kg

C_{sij} is the coating solids content of material, j, added to as−purchased coating material, i, expressed as a mass−fraction, kg/kg

(e) *Compliance.* The affected source is in compliance with emission standards in s. NR 466.23 (1) (b) 2. or 3. if one of the following is met:

1. The organic HAP content of each coating material as−applied at an existing affected source is no more than 0.04 kg of organic HAP per kg of coating material or 0.2 kg of organic HAP per kg of coating solids, and the organic HAP content of each coating material as−applied at a new affected source contains no more than 0.016 kg of organic HAP per kg of coating material or 0.08 kg of organic HAP per kg of coating solids.

2. The monthly average organic HAP content of all as−applied coating materials at an existing affected source are no more than 0.04 kg of organic HAP per kg of coating material or 0.2 kg of organic HAP per kg of coating solids, and the monthly average organic HAP content of all as−applied coating materials at a new affected source is no more than 0.016 kg of organic HAP per kg of coating material or 0.08 kg of organic HAP per kg of coating solids.

(4) MONTHLY ALLOWABLE ORGANIC HAP APPLIED. Demonstrate that the total monthly organic HAP applied as determined by Equation 6 is less than the calculated equivalent allowable organic HAP as determined by Equation 13a or b in sub. (12) (e):

$$H_m = \sum_{i=1}^{p} C_{hi} M_i + \sum_{j=1}^{q} C_{hij} M_{ij} - M_{vret}$$

(Equation 6)

where:

H_m is the total monthly organic HAP applied, kg

p is the number of different coating materials applied in a month

C_{hi} is the organic HAP content of coating material, i, as−purchased, expressed as a mass fraction, kg/kg

M_i is the mass of as−purchased coating material, i, applied in a month, kg

q is the number of different materials added to the coating material

C_{hij} is the organic HAP content of material, j, added to as−purchased coating material, i, expressed as a mass fraction, kg/kg

M_{ij} is the mass of material, j, added to as−purchased coating material, i, in a month, kg

M_{vret} is the mass of volatile matter retained in the coated web after curing or drying, or otherwise not emitted to the atmosphere, kg. The value of this term will be zero in all cases except where you choose to take into account the volatile matter retained in the coated web or otherwise not emitted to the atmosphere for the compliance demonstration procedures in this section.

(5) CAPTURE AND CONTROL TO REDUCE EMISSIONS TO NO MORE THAN ALLOWABLE LIMIT. To reduce emissions to no more than the allowable limit in s. NR 466.23 (1) (b) 1., operate a capture system and control device and demonstrate an overall organic HAP control efficiency of at least 95% at an existing affected source and at least 98% at a new affected source for each month, or operate a capture system and oxidizer so that an outlet organic HAP con-

centration of no greater than 20 ppmv by compound on a dry basis is achieved as long as the capture efficiency is 100% as detailed in s. NR 466.23 (1) (b) 4. Unless one of the cases described in par. (a), (b) or (c) applies to the affected source, you shall either demonstrate compliance in accordance with the procedure in sub. (9) when emissions from the affected source are controlled by a solvent recovery device, or the procedure in sub. (11) when emissions are controlled by an oxidizer or demonstrate compliance for a web coating line by operating each capture system and each control device and continuous parameter monitoring according to the procedures in sub. (10).

(a) If the affected source has only always−controlled work stations and operates more than one capture system or more than one control device, you shall demonstrate compliance in accordance with the provisions of either sub. (14) or (16).

(b) If the affected source operates one or more never−controlled work stations or one or more intermittently−controlled work stations, you shall demonstrate compliance in accordance with the provisions of sub. (14).

(c) An alternative method of demonstrating compliance with s. NR 466.23 (1) (b) 1. is the installation of a PTE around the web coating line that achieves 100% capture efficiency and ventilation of all organic HAP emissions from the total enclosure to an oxidizer with an outlet organic HAP concentration of no greater than 20 ppmv by compound on a dry basis. If this method is selected, you shall demonstrate compliance by following the procedures in subds. 1. and 2. Compliance is determined according to subd. 3.

1. Demonstrate that a total enclosure is installed. An enclosure that meets the requirements in s. NR 466.24 (3) (f) 1. will be considered a total enclosure.

2. Determine the organic HAP concentration at the outlet of your total enclosure using the procedures in subd. 2. a. or b.

a. Determine the control device efficiency using Equation 2 of s. NR 466.24 (3) and the applicable test methods and procedures specified in s. NR 466.24 (3) (e).

b. Use a CEMS to determine the organic HAP emission rate according to sub. (9) (b) 1. to 10.

3. You are in compliance if the installation of a total enclosure is demonstrated and the organic HAP concentration at the outlet of the incinerator is demonstrated to be no greater than 20 ppmv by compound on a dry basis.

(6) CAPTURE AND CONTROL TO ACHIEVE MASS FRACTION OF COATING SOLIDS APPLIED LIMIT. To achieve the mass fraction of coating solids applied limit in s. NR 466.23 (1) (b) 3., operate a capture system and control device and limit the organic HAP emission rate from an existing affected source to no more than 0.20 kg of organic HAP emitted per kg of coating solids applied, and from a new affected source to no more than 0.08 kg of organic HAP emitted per kg of coating solids applied as determined on a monthly average as−applied basis. If the affected source operates more than one capture system, more than one control device, one or more never−controlled work stations or one or more intermittently−controlled work stations, you shall demonstrate compliance in accordance with the provisions of sub. (14). Otherwise, you shall demonstrate compliance following the procedure in sub. (9) when emissions from the affected source are controlled by a solvent recovery device or the procedure in sub. (11) when emissions are controlled by an oxidizer.

(7) CAPTURE AND CONTROL TO ACHIEVE MASS FRACTION LIMIT. To achieve the mass fraction limit in s. NR 466.23 (1) (b) 2., operate a capture system and control device and limit the organic HAP emission rate to no more than 0.04 kg of organic HAP emitted per kg of coating material applied at an existing affected source, and no more than 0.016 kg of organic HAP emitted per kg of coating material applied at a new affected source as determined on a monthly average as−applied basis. If the affected source operates more than one capture system, more than one control device, one or more never−controlled work stations or one or more intermittently−controlled work stations, then you shall demonstrate compliance in accordance with the provisions of sub. (14). Otherwise, you shall demonstrate compliance following the procedure in sub. (9) when emissions from the affected source are controlled by a solvent recovery device or the procedure in sub. (11) when emissions are controlled by an oxidizer.

(8) CAPTURE AND CONTROL TO ACHIEVE ALLOWABLE EMISSION RATE. Operate a capture system and control device and limit the monthly organic HAP emissions to less than the allowable emissions as calculated in accordance with sub. (12). If the affected source operates more than one capture system, more than one control device, one or more never−controlled work stations or one or more intermittently−controlled work stations, then you shall demonstrate compliance in accordance with the provisions of sub. (14). Otherwise, the owner or operator shall demonstrate compliance following the procedure in sub. (9) when emissions from the affected source are controlled by a solvent recovery device or the procedure in sub. (11) when emissions are controlled by an oxidizer.

(9) SOLVENT RECOVERY DEVICE COMPLIANCE DEMONSTRATION. If you use a solvent recovery device to control emissions, you shall show compliance by following the procedures in either par. (a) or (b):

(a) *Liquid−liquid material balance.* Perform a monthly liquid−liquid material balance as specified in subds. 1. to 5. and use the applicable equations in subds. 6. to 9. to convert the data to units of the selected compliance option in subs. (5) to (8). Compliance shall be determined in accordance with subd. 10.

1. Determine the mass of each coating material applied on the web coating line or group of web coating lines controlled by a common solvent recovery device during the month.

2. If demonstrating compliance on the basis of an organic HAP emission rate based on coating solids applied, an organic HAP emission rate based on coating material applied or emission of less than the calculated allowable organic HAP, determine the organic HAP content of each coating material as−applied during the month following the procedure in s. NR 466.24 (3) (c).

3. Determine the volatile organic content of each coating material as−applied during the month following the procedure in s. NR 466.24 (3) (d).

4. If demonstrating compliance on the basis of an organic HAP emission rate based on coating solids applied or emissions of less than the calculated allowable organic HAP, determine the coating solids content of each coating material applied during the month following the procedure in s. NR 466.24 (3) (d).

5. Determine and monitor the amount of volatile organic matter recovered for the month according to the procedures in s. NR 466.24 (2) (d).

6. Calculate the volatile organic matter collection and recovery efficiency using Equation 7:

$$R_v = \frac{M_{vr} + M_{vret}}{\sum_{i=1}^{p} C_{vi} M_i + \sum_{j=1}^{q} C_{vij} M_{ij}} \times 100$$

(Equation 7)

where:

R_v is the organic volatile matter collection and recovery efficiency, percent

M_{vr} is the mass of volatile matter recovered in a month, kg

M_{vret} is the mass of volatile matter retained in the coated web after curing or drying, or otherwise not emitted to the atmosphere, kg. The value of this term will be zero in all cases except where you choose to take into account the volatile mat-

ter retained in the coated web or otherwise not emitted to the atmosphere for the compliance demonstration procedures in this section

p is the number of different coating materials applied in a month

C_{vi} is the volatile organic content of coating material, i, expressed as a mass fraction, kg/kg

M_i is the mass of as−purchased coating material, i, applied in a month, kg

$$H_e = \left(1 - \frac{R_v}{100}\right)\left(\sum_{i=1}^{p} C_{hi} M_i + \sum_{j=1}^{q} C_{hij} M_{ij} - M_{vret}\right) \quad \text{(Equation 8)}$$

where:

H_e is the total monthly organic HAP emitted, kg

R_v is the organic volatile matter collection and recovery efficiency, percent

p is the number of different coating materials applied in a month

C_{hi} is the organic HAP content of coating material, i, as−purchased, expressed as a mass fraction, kg/kg

M_i is the mass of as−purchased coating material, i, applied in a month, kg

q is the number of different materials added to the coating material

C_{hij} is the organic HAP content of material, j, added to as−purchased coating material, i, expressed as a mass fraction, kg/kg

M_{ij} is the mass of material, j, added to as−purchased coating material, i, in a month, kg

M_{vret} is the mass of volatile matter retained in the coated web after curing or drying, or otherwise not emitted to the atmosphere, kg. The value of this term will be zero in all cases except where you choose to take into account the volatile matter retained in the coated web or otherwise not emitted to the atmosphere for the compliance demonstration procedures in this section.

8. Calculate the organic HAP emission rate based on coating solids applied using Equation 9:

$$L = \frac{H_e}{\sum_{i=1}^{p} C_{si} M_i + \sum_{j=1}^{q} C_{sij} M_{ij}} \quad \text{(Equation 9)}$$

where:

L is the mass of organic HAP emitted per mass of coating solids applied, kg/kg

H_e is the total monthly organic HAP emitted, kg

p is the number of different coating materials applied in a month

C_{si} is the coating solids content of coating material, i, expressed as a mass fraction, kg/kg

M_i is the mass of as−purchased coating material, i, applied in a month, kg

q is the number of different materials added to the coating material

C_{sij} is the coating solids content of material, j, added to as−purchased coating material, i, expressed as a mass−fraction, kg/kg

M_{ij} is the mass of material, j, added to as−purchased coating material, i, in a month, kg

q is the number of different materials added to the coating material

C_{vij} is the volatile organic content of material, j, added to as−purchased coating material, i, expressed as a mass fraction, kg/kg

M_{ij} is the mass of material, j, added to as−purchased coating material, i, in a month, kg

7. Calculate the organic HAP emitted during the month using Equation 8:

(Equation 8)

9. Calculate the organic HAP emission rate based on coating material applied using Equation 10:

$$S = \frac{H_e}{\sum_{i=1}^{p} M_i + \sum_{j=1}^{q} M_{ij}} \quad \text{(Equation 10)}$$

where:

S is the mass organic HAP emitted per mass of material applied, kg/kg

H_e is the total monthly organic HAP emitted, kg

p is the number of different coating materials applied in a month

M_i is the mass of as−purchased coating material, i, applied in a month, kg

q is the number of different materials added to the coating material

M_{ij} is the mass of material, j, added to as−purchased coating material, i, in a month, kg

10. You are in compliance with the emission standards in s. NR 466.23 (1) (b) if you meet any of the following:

a. The volatile organic matter collection and recovery efficiency is 95% or greater at an existing affected source and 98% or greater at a new affected source.

b. The organic HAP emission rate based on coating solids applied is no more than 0.20 kg of organic HAP per kg of coating solids applied at an existing affected source and no more than 0.08 kg of organic HAP per kg of coating solids applied at a new affected source.

c. The organic HAP emission rate based on coating material applied is no more than 0.04 kg of organic HAP per kg of coating material applied at an existing affected source and no more than 0.016 kg of organic HAP per kg of coating material applied at a new affected source.

d. The organic HAP emitted during the month is less than the calculated allowable organic HAP as determined using sub. (12).

(b) *Continuous emission monitoring of capture system and control device performance.* Demonstrate initial compliance through a performance test on capture efficiency and continuing compliance through continuous emission monitors and continuous monitoring of capture system operating parameters following the procedures in subds. 1. to 7. Use the applicable equations specified in subds. 8. to 10. to convert the monitoring and other data into units of the selected compliance option in subs. (5) to (8). Compliance shall be determined in accordance with subd. 11.

1. Continuously monitor the gas stream entering and exiting the control device to determine the total organic volatile matter mass flow rate such that the efficiency of the control device can be calculated for each month using Equation 2 in s. NR 466.24 (3) (e) 1. i.

2. Whenever a web coating line is operated, continuously monitor the operating parameters established in accordance with s. NR 466.24 (2) (f) to ensure capture efficiency.

3. Determine the percent capture efficiency in accordance with s. NR 466.24 (3) (f).

4. Calculate the overall organic HAP control efficiency achieved for each month using Equation 11:

$$R = \frac{(E)(CE)}{100} \qquad \text{(Equation 11)}$$

where:

R is the overall organic HAP control efficiency, percent

E is the organic volatile matter control efficiency of the control device, percent

CE is the organic volatile matter capture efficiency of the capture system, percent

5. If demonstrating compliance on the basis of organic HAP emission rate based on coating solids applied, organic HAP emission rate based on coating materials applied or emission of less than the calculated allowable organic HAP, determine the mass of each coating material applied on the web coating line or group of web coating lines controlled by a common control device during the month.

6. If demonstrating compliance on the basis of organic HAP emission rate based on coating solids applied, organic HAP emission rate based on coating material applied or emission of less than the calculated allowable organic HAP, determine the organic HAP content of each coating material as−applied during the month following the procedure in s. NR 466.24 (3) (c).

7. If demonstrating compliance on the basis of organic HAP emission rate based on coating solids applied or emission of less than the calculated allowable organic HAP, determine the coating solids content of each coating material as−applied during the month following the procedure in s. NR 466.24 (3) (d).

8. Calculate the organic HAP emitted during the month for each month using Equation 12:

$$H_e = \left(1 - R\right)\left(\sum_{i=1}^{p} C_{ahi} M_i\right) - M_{vret} \qquad \text{(Equation 12)}$$

where:

H_e is the total monthly organic HAP emitted, kg

R is the overall organic HAP control efficiency, percent

p is the number of different coating materials applied in a month

C_{ahi} is the monthly average, as−applied, organic HAP content of coating material, i, expressed as a mass fraction, kg/kg

M_i is the mass of as−purchased coating material, i, applied in a month, kg

M_{vret} is the mass of volatile matter retained in the coated web after curing or drying or otherwise not emitted to the atmosphere, kg. The value of this term will be zero in all cases except where you choose to take into account the volatile matter retained in the coated web or otherwise not emitted to the atmosphere for the compliance demonstration procedures in this section.

9. Calculate the organic HAP emission rate based on coating solids applied using Equation 9 in par. (a) 8.

10. Calculate the organic HAP emission rate based on coating material applied using Equation 10 in par. (a) 9.

11. You are in compliance with the emission standards in s. NR 466.23 (1) (b) for each month if you operate the capture system such that the average capture system operating parameter is greater than or less than, as appropriate, the operating parameter value established in accordance with s. NR 466.24 (2) (f), and you satisfy one of the following:

a. The organic volatile matter collection and recovery efficiency is 95% or greater at an existing affected source and 98% or greater at a new affected source.

b. The organic HAP emission rate based on coating solids applied is no more than 0.20 kg of organic HAP per kg of coating solids applied at an existing affected source and no more than 0.08 kg of organic HAP per kg of coating solids applied at a new affected source.

c. The organic HAP emission rate based on coating material applied is no more than 0.04 kg of organic HAP per kg of coating material applied at an existing affected source and no more than 0.016 kg of organic HAP per kg of coating material applied at a new affected source.

d. The organic HAP emitted during the month is less than the calculated allowable organic HAP as determined using sub. (12).

(10) CAPTURE AND CONTROL SYSTEM COMPLIANCE DEMONSTRATION PROCEDURES USING A CPMS. If you use an add−on control device, you shall demonstrate initial compliance for each capture system and each control device through performance tests and demonstrate continuing compliance through continuous monitoring of capture system and control device operating parameters as specified in pars. (a) to (c). Compliance shall be determined in accordance with par. (d).

(a) Determine the control device destruction or removal efficiency using the applicable test methods and procedures in s. NR 466.24 (3) (e).

(b) Determine the emission capture efficiency in accordance with s. NR 466.24 (3) (f).

(c) Whenever a web coating line is operated, continuously monitor the operating parameters established according to s. NR 466.24 (2) (e) and (f).

(d) You are in compliance with the emission standards in s. NR 466.23 (1) (b) if the control device is operated such that the average operating parameter value is greater than or less than, as appropriate, the operating parameter value established in accordance with s. NR 466.24 (3) (e) for each 3−hour period, and the capture system operating parameter is operated at an average value greater than or less than, as appropriate, the operating parameter value established in accordance with s. NR 466.24 (2) (f), and you satisfy one of the following:

1. The overall organic HAP control efficiency is 95% or greater at an existing affected source and 98% or greater at a new affected source.

2. The organic HAP emission rate based on coating solids applied is no more than 0.20 kg of organic HAP per kg of coating solids applied at an existing affected source and no more than 0.08 kg of organic HAP per kg of coating solids applied at a new affected source.

3. The organic HAP emission rate based on coating material applied is no more than 0.04 kg of organic HAP per kg of coating material applied at an existing affected source and no more than 0.016 kg of organic HAP per kg of coating material applied at a new affected source.

4. The organic HAP emitted during the month is less than the calculated allowable organic HAP as determined using sub. (12).

(11) OXIDIZER COMPLIANCE DEMONSTRATION PROCEDURES. If you use an oxidizer to control emissions, you shall show compliance by following the procedures in par. (a) and using the applicable equations specified in par. (b) to convert the monitoring and

other data into units of the selected compliance option in subs. (5) to (8). Compliance shall be determined in accordance with par. (c).

(a) Demonstrate initial compliance through performance tests of capture efficiency and control device efficiency and continuing compliance through continuous monitoring of capture system and control device operating parameters as specified in subds. 1. to 6.:

1. Determine the oxidizer destruction efficiency using the procedure in s. NR 466.24 (3) (e).

2. Determine the capture system capture efficiency in accordance with s. NR 466.24 (3) (f).

3. Whenever a web coating line is operated, continuously monitor the operating parameters established in accordance with s. NR 466.24 (2) (e) and (f) to ensure capture and control efficiency.

4. If demonstrating compliance on the basis of organic HAP emission rate based on coating solids applied, organic HAP emission rate based on coating materials applied or emission of less than the calculated allowable organic HAP, determine the mass of each coating material applied on the web coating line or group of web coating lines controlled by a common oxidizer during the month.

5. If demonstrating compliance on the basis of organic HAP emission rate based on coating solids applied, organic HAP emission rate based on coating material applied or emission of less than the calculated allowable organic HAP, determine the organic HAP content of each coating material as−applied during the month following the procedure in s. NR 466.24 (3) (c).

6. If demonstrating compliance on the basis of organic HAP emission rate based on coating solids applied or emission of less than the calculated allowable organic HAP, determine the coating solids content of each coating material applied during the month following the procedure in s. NR 466.24 (3) (d).

(b) You shall convert the information obtained under sub. (16) (a) into the units of the selected compliance option using the calculation procedures specified in subds. 1. to 4.

1. Calculate the overall organic HAP control efficiency achieved using Equation 11 of this section.

2. Calculate the organic HAP emitted during the month using Equation 12 of this section.

3. Calculate the organic HAP emission rate based on coating solids applied for each month using Equation 9 of this section.

4. Calculate the organic HAP emission rate based on coating material applied using Equation 10 of this section.

(c) You are in compliance with the emission standards in s. NR 466.23 (1) (b) if the oxidizer is operated such that the average operating parameter value is greater than the operating parameter value established in accordance with s. NR 466.24 (3) (e) for each 3−hour period, and the capture system operating parameter is operated at an average value greater than or less than, as appropriate, the operating parameter value established in accordance with s. NR 466.24 (2) (f), and you satisfy one of the following:

1. The overall organic HAP control efficiency is 95% or greater at an existing affected source and 98% or greater at a new affected source.

2. The organic HAP emission rate based on coating solids applied is no more than 0.20 kg of organic HAP per kg of coating solids applied at an existing affected source and no more than 0.08 kg of organic HAP per kg of coating solids applied at a new affected source.

3. The organic HAP emission rate based on coating material applied is no more than 0.04 kg of organic HAP per kg of coating material applied at an existing affected source and no more than 0.016 kg of organic HAP per kg of coating material applied at a new affected source.

4. The organic HAP emitted during the month is less than the calculated allowable organic HAP as determined using sub. (12).

(12) MONTHLY ALLOWABLE ORGANIC HAP EMISSIONS. You shall use the procedures and calculations in this subsection for determining monthly allowable organic HAP emissions for use in demonstrating compliance in accordance with subs. (4), (8), (9) (a) 10. d., (9) (b) 11. d. and (11) (c) 4. You shall determine the amount of coating material applied at greater than or equal to 20% by mass coating solids and the amount of coating material applied at less than 20% by mass coating solids. The allowable organic HAP limit shall then be calculated based on coating material applied at greater than or equal to 20% by mass coating solids complying with 0.2 kg of organic HAP per kg of coating solids at an existing affected source or 0.08 kg of organic HAP per kg of coating solids at a new affected source, and coating material applied at less than 20% by mass coating solids complying with 4% by mass organic HAP at an existing affected source and 1.6% by mass organic HAP at a new affected source by doing all of the following:

(a) Determine the as−purchased mass of each coating material applied each month.

(b) Determine the as−purchased coating solids content of each coating material applied each month in accordance with s. NR 466.24 (3) (d) 1.

(c) Determine the as−purchased mass fraction of each coating material which was applied at 20% by mass or greater coating solids content on an as−applied basis.

(d) Determine the total mass of each solvent, diluent, thinner or reducer added to coating materials which were applied at less than 20% by mass coating solids content on an as−applied basis each month.

(e) Calculate the monthly allowable organic HAP emissions using Equation 13a for an existing affected source and Equation 13b for a new affected source:

$$H_a = 0.20\left[\sum_{i=1}^{p} M_i G_i C_{si}\right] + 0.04\left[\sum_{i=1}^{p} M_i (1 - G_i) + \sum_{j=1}^{q} M_{Lj}\right] \quad \text{(Equation 13a)}$$

where:

H_a is the monthly allowable organic HAP emissions, kg

p is the number of different coating materials applied in a month

M_i is the mass of as−purchased coating material, i, applied in a month, kg

G_i is the mass fraction of each coating material, i, which was applied at 20% by mass or greater coating solids content, on an as−applied basis, kg/kg

C_{si} is the coating solids content of coating material, i, expressed as a mass fraction, kg/kg

q is the number of different materials added to the coating material

M_{Lj} is the mass of non−coating−solids−containing coating material, j, added to coating−solids−containing coating materials which were applied at less than 20% by mass coating solids content, on an as−applied basis, in a month, kg

$$H_a = 0.08\left[\sum_{i=1}^{p} M_i G_i C_{si}\right] + 0.016\left[\sum_{i=1}^{p} (1 - G_i) + \sum_{j=1}^{q} M_{Lj}\right] \quad \text{(Equation 13b)}$$

where

H_a is the monthly allowable organic HAP emissions, kg

p is the number of different coating materials applied in a month

M_i is the mass of as−purchased coating material, i, applied in a month, kg

G_i is the mass fraction of each coating material, i, which was applied at 20% by mass or greater coating solids content, on an as−applied basis, kg/kg

C_{si} is the coating solids content of coating material, i, expressed as a mass fraction, kg/kg

q is the number of different materials added to the coating material

M_{Lj} is the mass of non−coating−solids−containing coating material, j, added to coating−solids−containing coating materials which were applied at less than 20% by mass coating solids content, on an as−applied basis, in a month, kg

Note: Sub. (13) was not used to maintain consistency with numbering used in parallel federal language.

(14) COMBINATIONS OF CAPTURE AND CONTROL. If you operate more than one capture system, more than one control device, one or more never−controlled work stations or one or more intermittently−controlled work stations, you shall calculate organic HAP emissions according to the procedures in pars. (a) to (d) and use the calculation procedures specified in par. (e) to convert the monitoring and other data into units of the selected control option in subs. (5) to (8). Use the procedures specified in par. (f) to demonstrate compliance.

(a) *Solvent recovery system using liquid−liquid material balance compliance demonstration.* If you choose to comply by means of a liquid−liquid material balance for each solvent recovery system used to control one or more web coating lines, you shall determine the organic HAP emissions for the web coating lines controlled by the solvent recovery system in accordance with one of the following:

1. Subsection (9) (a) 1. to 3. and 5. to 7., if the web coating lines controlled by the solvent recovery system have only always−controlled work stations.

2. Subsections (9) (a) 2., 3., 5. and 6. and (15), if the web coating lines controlled by the solvent recovery system have one or more never−controlled or intermittently−controlled work stations.

(b) *Solvent recovery system using performance test compliance demonstration and CEMS.* To demonstrate compliance through an initial test of capture efficiency, continuous monitoring of a capture system operating parameter and a CEMS on each solvent recovery system used to control one or more web coating lines, you shall do both of the following:

1. For each capture system delivering emissions to that solvent recovery system, monitor the operating parameter established in accordance with s. NR 466.24 (2) (f) to ensure capture system efficiency.

2. Determine the organic HAP emissions for the web coating lines served by each capture system delivering emissions to the solvent recovery system in accordance with one of the following:

a. Subsection (9) (b) 1. to 3., 5., 7. and 8. if the web coating lines served by the capture and control system have only always−controlled work stations.

b. Subsections (9) (b) 1. to 3. and 6. and (15) if the web coating lines served by the capture and control system have one or more never−controlled or intermittently−controlled work stations.

(c) *Oxidizer.* To demonstrate compliance through performance tests of capture efficiency and control device efficiency, continuous monitoring of capture system and CPMS for control device operating parameters for each oxidizer used to control emissions from one or more web coating lines, you shall do all of the following:

1. Monitor the operating parameter in accordance with s. NR 466.24 (2) (e) to ensure control device efficiency.

2. For each capture system delivering emissions to the oxidizer, monitor the operating parameter established in accordance with s. NR 466.24 (2) (f) to ensure capture efficiency.

3. Determine the organic HAP emissions for the web coating lines served by each capture system delivering emissions to that oxidizer in accordance with one of the following:

a. In accordance with sub. (11) (a) 1. to 4. if the web coating lines served by the capture and control system have only always−controlled work stations.

b. In accordance with sub. (11) (a) 1. to 3. and 5. and sub. (15) if the web coating lines served by the capture and control system have one or more never−controlled or intermittently−controlled work stations.

(d) *Uncontrolled coating lines.* If you own or operate one or more uncontrolled web coating lines, you shall determine the organic HAP applied on the web coating lines using Equation 6 in sub. (4). The organic HAP emitted from an uncontrolled web coating line is equal to the organic HAP applied on the web coating line.

(e) *Conversion of information.* Convert the information obtained under pars. (a) to (d) into the units of the selected compliance option using the calculation procedures specified in subds. 1. to 4.

1. Calculate the organic HAP emissions for the affected source for the month by summing all organic HAP emissions calculated according to pars. (a), (b) 2., (c) 3. and (d).

2. If demonstrating compliance on the basis of organic HAP emission rate based on coating solids applied or emission of less than the calculated allowable organic HAP, you shall determine the coating solids content of each coating material applied during the month following the procedure in s. NR 466.24 (3) (d).

3. Calculate the organic HAP emission rate based on coating solids applied for each month using Equation 9 in sub. (9) (a) 8.

4. Calculate the organic HAP emission rate based on material applied using Equation 10 in sub. (9) (a) 9.

(f) *Compliance.* You are in compliance with the emission standards in s. NR 466.23 (1) (b) for the month if all operating parameters required to be monitored under pars. (a) to (c) were maintained at the values established under s. NR 466.24 (2) and (3), and you satisfy one of the following:

1. The total mass of organic HAP emitted by the affected source based on coating solids applied is no more than 0.20 kg of organic HAP per kg of coating solids applied at an existing affected source and no more than 0.08 kg of organic HAP per kg of coating solids applied at a new affected source.

2. The total mass of organic HAP emitted by the affected source based on material applied is no more than 0.04 kg of organic HAP per kg of material applied at an existing affected source and no more than 0.016 kg of organic HAP per kg of material applied at a new affected source.

3. The total mass of organic HAP emitted by the affected source during the month is less than the calculated allowable organic HAP as determined using sub. (12).

4. The total mass of organic HAP emitted by the affected source was not more than 5% of the total mass of organic HAP applied for the month at an existing affected source and no more than 2% of the total mass of organic HAP applied for the month at a new affected source. The total mass of organic HAP applied by the affected source in the month shall be determined using Equation 6 in sub. (4).

(15) INTERMITTENTLY−CONTROLLED AND NEVER−CONTROLLED WORK STATIONS. If you have been expressly referred to this subsection by sub. (14) (a) 2., (b) 2. b. or (c) 3. b. for calculation proce-

dures to determine organic HAP emissions for your intermittently−controlled and never−controlled work stations, you shall do all of the following:

(a) Determine the sum of the mass of all coating materials as−applied on intermittently−controlled work stations operating in bypass mode and the mass of all coating materials as−applied on never−controlled work stations during the month.

(b) Determine the sum of the mass of all coating materials as−applied on intermittently−controlled work stations operating in a controlled mode and the mass of all coating materials applied on always−controlled work stations during the month.

(c) For each web coating line or group of web coating lines for which you use the provisions of sub. (14) (a) 2. for liquid−liquid material balance compliance demonstration, calculate the organic HAP emitted during the month using Equation 14:

$$H_e = \left[\sum_{i=1}^{p} M_{Ci} C_{ahi}\right]\left[1 - \frac{R_v}{100}\right] + \left[\sum_{i=1}^{p} M_{Bi} C_{ahi}\right] - M_{vret}$$

(Equation 14)

where:

H_e is the total monthly organic HAP emitted, kg

p is the number of different coating materials applied in a month

M_{Ci} is the sum of the mass of coating material, i, as−applied on intermittently−controlled work stations operating in controlled mode and the mass of coating material, i, as−applied on always−controlled work stations, in a month, kg

C_{ahi} is the monthly average, as−applied, organic HAP content of coating material, i, expressed as a mass fraction, kg/kg

R_v is the organic volatile matter collection and recovery efficiency, percent

M_{Bi} is the sum of the mass of coating material, i, as−applied on intermittently−controlled work stations operating in bypass mode and the mass of coating material, i, as−applied on never−controlled workstations, in a month, kg

M_{vret} is the mass of volatile matter retained in the coated web after curing or drying, or otherwise not emitted to the atmosphere, kg. The value of this term will be zero in all cases except where you choose to take into account the volatile matter retained in the coated web or otherwise not emitted to the atmosphere for the compliance demonstration procedures in this section.

(d) For each web coating line or group of web coating lines for which you use the provisions of sub. (14) (b) 2. b. or (c) 3. b. on using a performance test to determine capture efficiency and control device efficiency, calculate the organic HAP emitted during the month using Equation 15:

$$H_e = \left[\sum_{i=1}^{p} M_{Ci} C_{ahi}\right]\left[1 - \frac{R}{100}\right] + \left[\sum_{i=1}^{p} M_{Bi} C_{ahi}\right] - M_{vret}$$

(Equation 15)

where:

H_e is the total monthly organic HAP emitted, kg

p is the number of different coating materials applied in a month

M_{Ci} is the sum of the mass of coating material, i, as−applied on intermittently−controlled work stations operating in controlled mode and the mass of coating material, i, as−applied on always−controlled work stations, in a month, kg

C_{ahi} is the monthly average, as−applied, organic HAP content of coating material, i, expressed as a mass fraction, kg/kg

R is the overall organic HAP control efficiency, percent

M_{Bi} is the sum of the mass of coating material, i, as−applied on intermittently−controlled work stations operating in bypass mode and the mass of coating material, i, as−applied on never−controlled work stations, in a month, kg

M_{vret} is the mass of volatile matter retained in the coated web after curing or drying, or otherwise not emitted to the atmosphere, kg. The value of this term will be zero in all cases except where you choose to take into account the volatile matter retained in the coated web or otherwise not emitted to the atmosphere for the compliance demonstration procedures in this section.

(16) ALWAYS−CONTROLLED WORK STATIONS WITH MORE THAN ONE CAPTURE AND CONTROL SYSTEM. If you operate more than one capture system or more than one control device and only have always−controlled work stations, you are in compliance with the emission standards in s. NR 466.23 (1) (b) 1. for the month if for each web coating line or group of web coating lines controlled by a common control device you satisfy one of the following:

(a) The volatile matter collection and recovery efficiency as determined by sub. (9) (a) 1., 3., 5. and 6. is at least 95% at an existing affected source and at least 98% at a new affected source.

(b) The overall organic HAP control efficiency as determined by sub. (9) (b) 1. to 4. for each web coating line or group of web coating lines served by that control device and a common capture system is at least 95% at an existing affected source and at least 98% at a new affected source.

(c) The overall organic HAP control efficiency as determined by sub. (11) (a) 1. to 3. and (b) 1. for each web coating line or group of web coating lines served by that control device and a common capture system is at least 95% at an existing affected source and at least 98% at a new affected source.

History: CR 07−045: cr. Register April 2008 No. 628, eff. 5−1−08.

NR 466.26 Notifications, reports and records. (1) WHAT NOTIFICATIONS AND REPORTS MUST I SUBMIT? (a) Each owner or operator of an affected source subject to this subchapter shall submit the reports specified in pars. (b) to (g) to the department.

(b) You shall submit an initial notification according to the following requirements:

1. Initial notification for existing affected sources shall be submitted no later than one year before the compliance date specified in s. NR 466.23 (3) (a).

2. Initial notification for new and reconstructed affected sources shall be submitted as required by s. NR 460.08 (2).

3. For the purpose of this subchapter, a permit application submitted under ch. NR 407 may be used in lieu of the initial notification required under s. NR 460.08 (2), provided the same information is contained in the permit application as required by s. NR 460.08 (2).

4. If you are using a permit application in lieu of an initial notification in accordance with subd. 3., the permit application shall be submitted by the same due date specified for the initial notification.

(c) You shall submit a semiannual compliance report according to subds. 1. and 2.

1. The compliance report shall be submitted in accordance with the requirements in subd. 1. a. to e.

a. The first compliance report shall cover the period beginning on the compliance date that is specified for your affected source in s. NR 466.23 (3) and ending on June 30 or December 31, whichever date is the first date following the end of the calendar half immediately following the compliance date that is specified for your affected source in s. NR 466.23 (3).

b. The first compliance report shall be postmarked or delivered no later than July 31 or January 31, whichever date follows the end of the calendar half immediately following the compliance date that is specified for your affected source in s. NR 466.23 (3).

c. Each subsequent compliance report shall cover the semiannual reporting period from January 1 to June 30 or the semiannual reporting period from July 1 to December 31.

d. Each subsequent compliance report shall be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.

e. For each affected source that is subject to permitting regulations pursuant to ch. NR 407, and for which the department has established dates for submitting semiannual reports pursuant to s. NR 407.09 (1) (c) 3. a., you may submit the first and subsequent compliance reports according to the dates the department has established instead of according to the dates in subd. 1. a. to d.

2. The compliance report shall contain the information in subd. 2. a. to f.

a. Company name and address.

b. Statement by a responsible official with that official's name, title and signature certifying the accuracy of the content of the report.

c. Date of report and beginning and ending dates of the reporting period.

d. If there are no deviations from any emission limit or operating limit that apply to you, a statement that there were no deviations from any emission limit or operating limit during the reporting period, and that no CMS was inoperative, inactive, malfunctioning, out−of−control, repaired or adjusted.

e. For each deviation from an emission limit or operating limit that applies to you and that occurs at an affected source where you are not using a CEMS to comply with the emission limits or operating limits in this subchapter, you shall include the following information:

1) The total operating time of each affected source during the reporting period.

2) Information on the number, duration and cause of deviations, including unknown cause, if applicable, and the corrective action taken.

3) Information on the number, duration and cause for CPMS downtime incidents, if applicable, other than downtime associated with zero and span and other calibration checks.

f. For each deviation from an emission limit occurring at an affected source where you are using a CEMS to comply with the emission limit in this subchapter, you shall include the following information:

1) The date and time that each malfunction started and stopped.

2) The date and time that each CEMS and CPMS, if applicable, was inoperative except for zero, low−level and high−level checks.

3) The date and time that each CEMS and CPMS, if applicable, was out−of−control, including the information in s. NR 460.07 (3) (h).

4) The date and time that each deviation started and stopped and whether each deviation occurred during a period of startup, shutdown or malfunction or during another period.

5) A summary of the total duration, in hours, of each deviation during the reporting period and the total duration of each deviation as a percent of the total source operating time during that reporting period.

6) A breakdown of the total duration of the deviations during the reporting period into those that are due to startup, shutdown, control equipment problems, process problems, other known causes and other unknown causes.

7) A summary of the total duration, in hours, of CEMS and CPMS downtime during the reporting period and the total duration of CEMS and CPMS downtime as a percent of the total source operating time during that reporting period.

8) A breakdown of the total duration of CEMS and CPMS downtime during the reporting period into periods that are due to monitoring equipment malfunctions, non−monitoring equipment malfunctions, quality assurance and quality control calibrations, other known causes and other unknown causes.

9) The date of the latest CEMS and CPMS certification or audit.

10) A description of any changes in CEMS, CPMS or controls since the last reporting period.

(d) You shall submit a notification of performance tests as specified in ss. NR 460.06 and 460.08 (5) if you are complying with the emission standard using a control device and you are required to conduct a performance test of the control device. This notification and the site−specific test plan required under s. NR 460.06 (2) shall identify the operating parameters to be monitored to ensure that the capture efficiency of the capture system and the control efficiency of the control device determined during the performance test are maintained. Unless the department objects to the parameter or requests changes, you may consider the parameter approved.

(e) You shall submit a notification of compliance status as specified in s. NR 460.08 (8).

(f) You shall submit performance test reports as specified in s. NR 460.09 (4) (b) if you are using a control device to comply with the emission standard and you have not obtained a waiver from the performance test requirement or you are not exempted from this requirement by s. NR 466.24 (3) (b). The performance test reports shall be submitted as part of the notification of compliance status required in par. (e).

(g) You shall submit startup, shutdown and malfunction reports as specified in s. NR 460.09 (4) (e), except that the provisions in ch. NR 460 pertaining to startups, shutdowns and malfunctions do not apply unless a control device is used to comply with this subchapter.

1. If actions taken by an owner or operator during a startup, shutdown or malfunction of an affected source, including actions taken to correct a malfunction, are not consistent with the procedures specified in the affected source's SSMP required by s. NR 460.05 (4) (c), the owner or operator shall state the information in the report. The startup, shutdown or malfunction report shall consist of a letter containing the name, title and signature of the responsible official who is certifying its accuracy and shall be submitted to the department.

2. Separate startup, shutdown and malfunction reports are not required if the information is included in the report specified in par. (c) 2. f.

(2) WHAT RECORDS MUST I KEEP? (a) Each owner or operator of an affected source subject to this subchapter shall maintain the records specified in subds. 1. and 2. on a monthly basis in accordance with the requirements of s. NR 460.09 (2) (a):

1. Records specified in s. NR 460.09 (2) (b) of all measurements needed to demonstrate compliance with this standard, including all of the following:

a. Continuous emission monitor data in accordance with the requirements of s. NR 466.24 (2) (d).

b. Control device and capture system operating parameter data in accordance with the requirements of s. NR 466.24 (2) (c), (e) and (f).

c. Organic HAP content data for the purpose of demonstrating compliance in accordance with the requirements of s. NR 466.24 (3) (c).

d. Volatile matter and coating solids content data for the purpose of demonstrating compliance in accordance with the requirements of s. NR 466.24 (3) (d).

e. Overall control efficiency determination using capture efficiency and control device destruction or removal efficiency test results in accordance with the requirements of s. NR 466.24 (3) (e) and (f).

f. Material use, organic HAP use, volatile matter use and coating solids use and compliance demonstrations using these data in accordance with the requirements of s. NR 466.25 (2), (3) and (4).

2. Records specified in s. NR 460.09 (3) for each CMS operated by the owner or operator in accordance with the requirements of s. NR 466.24 (2) (b).

(b) Each owner or operator of an affected source subject to this subchapter shall maintain records of all liquid−liquid material balances performed in accordance with the requirements of s. NR 466.25. The records shall be maintained in accordance with the requirements of s. NR 460.09 (2). If you are required to comply with operating limits by s. NR 466.23 (2), you shall comply with the applicable operating limits in the following table:

Table 1
Operating Limits if Using Add−On Control Devices and Capture System

For the following device:	You shall meet the following operating limit:	And you shall demonstrate continuous compliance with operating limits by:
1. Thermal Oxidizer	The average combustion temperature in any 3−hour period may not fall below the combustion temperature limit established according to s. NR 466.24 (3) (e) 3. a.	1. Collecting the combustion temperature data according to s. NR 466.24 (2) (e) 9.; 2. Reducing the data to 3−hour block averages; and 3. Maintaining the 3−hour average combustion temperature at or above the temperature limit.
2. Catalytic Oxidizer	a. The average temperature at the inlet to the catalyst bed in any 3−hour period may not fall below the combustion temperature limit established according to s. NR 466.24 (3) (e) 3. b.	1. Collecting the catalyst bed inlet temperature data according to s. NR 466.24 (2) (e) 9.; 2. Reducing the data to 3−hour block averages; and 3. Maintaining the 3−hour average catalyst bed inlet temperature at or above the temperature limit.
	b. The temperature rise across the catalyst bed may not fall below the limit established according to s. NR 466.24 (3) (e) 3. b.	1. Collecting the catalyst bed inlet and outlet temperature data according to s. NR 466.24 (2) (e) 9.; 2. Reducing the data to 3−hour block averages; and 3. Maintaining the 3−hour average temperature rise across the catalyst bed at or above the limit.
3. Emission Capture System	Submit monitoring plan to the department that identifies operating parameters to be monitored according to s. NR 466.24 (2) (f).	Conduct monitoring according to the plan specified in s. NR 466.24 (2) (f) 3.

History: CR 07−045: cr. Register April 2008 No. 628, eff. 5−1−08.