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National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products; Effluent Limitations Guidelines and Standards for the Timber Products Point Source Category; List of Hazardous Air Pollutants, Lesser Quantity Designations, Source Category List; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 63 and 429

[OAR–2003–0048, FRL–7634–1]

RIN 2060–AG52

National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products; Effluent Limitations Guidelines and Standards for the Timber Products Point Source Category; List of Hazardous Air Pollutants, Lesser Quantity Designations, Source Category List

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This action promulgates national emission standards for hazardous air pollutants (NESHAP) for the plywood and composite wood products (PCWP) source category under the Clean Air Act (CAA) and revisions to the effluent limitations, guidelines and standards for the timber products processing source category under the Clean Water Act (CWA).

The EPA has determined that the PCWP source category contains major sources of hazardous air pollutants (HAP), including, but not limited to, acetaldehyde, acrolein, formaldehyde, methanol, phenol, and propionaldehyde. These HAP are associated with a variety of adverse health effects. These adverse health effects include chronic health disorders (*e.g.*, damage to nasal membranes, gastrointestinal irritation) and acute health disorders (*e.g.*, irritation of eyes, throat, and mucous membranes, dizziness, headache, and nausea). Three of the six primary HAP emitted have been classified as probable or possible human carcinogens. This action will implement section 112(d) of the CAA by requiring all major sources subject to the final rule to meet HAP emission standards reflecting the application of the maximum achievable control technology (MACT). The final rule will reduce HAP emissions from the PCWP source category by approximately 5,900 to 9,900 megagrams per year (Mg/yr) (6,600 to 11,000 tons per year (tons/yr)). In addition, the final rule will reduce emissions of volatile organic compounds (VOC) by 13,000 to 25,000 Mg/yr (14,000 to 27,000 tons/yr).

The EPA is also amending the effluent limitations, guidelines and standards for the timber products processing point source category (veneer, plywood, dry process hardboard, particleboard manufacturing subcategories). The amendments adjust the definition of process wastewater to exclude certain sources of wastewater generated by air pollution control devices expected to be installed to comply with the final PCWP NESHAP.

The EPA is also amending the list of categories that was developed pursuant to section 112(c)(1) of the CAA. The EPA is delisting a low-risk subcategory of the PCWP source category. This action is being taken in part to respond to comments submitted by the American Forest & Paper Association (AF&PA) and in part upon the Administrator's own motion, pursuant to section 112(c)(9) of the CAA. This action is based on EPA's evaluation of the available information concerning the potential hazards from exposure to HAP emitted by PCWP affected sources, and includes a detailed rationale for removing low-risk PCWP affected sources from the source category list.

DATES: The final NESHAP and the amendments to the effluent guidelines are effective September 28, 2004. The incorporation by reference of certain publications listed in the final NESHAP is approved by the director of the Office of the Federal Register as of September 28, 2004.

ADDRESSES: Docket numbers OAR–2003–0048 and A–98–44, containing supporting documentation used in development of this action, are available for public viewing at the EPA Docket Center (Air Docket), EPA West, Room B–108, 1301 Constitution Avenue, NW., Washington, DC 20460. These dockets also contain documentation supporting the amendments to 40 CFR part 429.

FOR FURTHER INFORMATION CONTACT: For further information concerning applicability and rule determinations, contact the appropriate State or local agency representative. If no State or local representative is available, contact the EPA Regional Office staff listed in 40 CFR 63.13. For information concerning the analyses performed in developing the final rule, contact Ms. Mary Tom Kissell, Waste and Chemical Processes Group, Emission Standards Division (C439–03), U.S. EPA, Research Triangle Park, North Carolina 27711, telephone number (919) 541–4516, electronic mail (e-mail) address *kissell.mary@epa.gov.* For information concerning test methods, sampling, and monitoring information, contact Mr. Gary McAlister, Source Measurement Analysis Group, Emission Monitoring and Analysis Division (D243–02), U.S. EPA, Research Triangle Park, North Carolina 27711, telephone number (919) 541–1062, e-mail address *mcalister.gary@epa.gov.* For information concerning the economic impacts and benefit analysis, contact Mr. Larry Sorrels, Innovative Strategies and Economics Group, Air Quality Strategies and Standards Division (C339–01), U.S. EPA, Research Triangle Park, North Carolina 27711, telephone number (919) 541–5041, e-mail address *sorrels.larry@epa.gov.* For information concerning the effluent guidelines, contact Mr. Donald Anderson, Engineering and Analysis Division (4303T), U.S. EPA, 1200 Pennsylvania Avenue, NW., Washington, DC 20460, telephone number (202) 566–1021, *anderson.donaldf@epa.gov.*

SUPPLEMENTARY INFORMATION: *Regulated Entities.* Categories and entities potentially regulated by this action include:

Category	Rule	SIC code [a]	NAICS code [b]	Examples of regulated entities
Industry	NESHAP	2421	321999	Sawmills with lumber kilns.
		2435	321211	Hardwood plywood and veneer plants.
		2436	321212	Softwood plywood and veneer plants.
		2493	321219	Reconstituted wood products (particleboard, medium density fiberboard, hardboard, fiberboard, and oriented strandboard plants).
		2439	321213	Structural Wood Members, Not Elsewhere Classified (engineered wood products plants).
Effluent Guidelines		2436	321212	Softwood plywood and veneer plants.
		2493	321219	Reconstituted wood products (particleboard, medium density fiberboard, hardboard, fiberboard, and oriented strandboard plants).

[a] Standard Industrial Classification.
[b] North American Industrial Classification System.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. To determine whether your facility is regulated by this action, you should examine the applicability criteria in § 63.2231 of the final rule. If you have any questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

Docket. The EPA has established an official public docket for this action including both Docket ID No. OAR–2003–0048 and Docket ID No. A–98–44. The official public docket consists of the documents specifically referenced in this action, any public comments received, and other information related to this action. All items may not be listed under both docket numbers, so interested parties should inspect both docket numbers to ensure that they have received all materials relevant to this rule. Although a part of the official docket, the public docket does not include Confidential Business Information or other information whose disclosure is restricted by statute. The official public docket is available for public viewing at the EPA Docket Center (Air Docket), EPA West, Room B–102, 1301 Constitution Avenue, NW., Washington, DC. The EPA Docket Center Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566–1744, and the telephone number for the Air Docket is (202) 566–1742.

Electronic Access. You may access this **Federal Register** document electronically through the EPA Internet under the **Federal Register** listings at *http://www.epa.gov/fedrgstr/*. You may also access a copy of this document through the Technology Transfer Network (TTN) at *http://www.epa.gov/ttn/atw/plypart/plywoodpg.html*. An electronic version of the public docket is available through EPA's electronic public docket and comment system, EPA Dockets. You may use EPA Dockets at *http://www.epa.gov/edocket/* to view public comments, access the index listing of the contents of the official public docket, and access those documents in the public docket that are available electronically. Although not all docket materials may be available electronically, you may still access any of the publicly available docket materials through the docket facility identified above. Once in the system, select ''search,'' then key in the appropriate docket identification number.

Judicial Review. Under section 307(b)(1) of the CAA, judicial review of the standards and limitations of the final rule is available only by filing a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit by September 28, 2004. Under section 307(d)(7)(B) of the CAA, only an objection to the final rule that was raised with reasonable specificity during the period for public comment can be raised during judicial review. Under section 509(b)(1) of the CWA, judicial review of today's effluent limitations guidelines and standards is available in the United States Court of Appeals by filing a petition for review within 120 days from the date of promulgation of those guidelines and standards. In accordance with 40 CFR 23.2, the water portion of today's final rule shall be considered promulgated for the purposes of judicial review at 1 p.m. Eastern time on August 13, 2004. Moreover, under section 307(b)(2) of the CAA and section 509(b)(2) of the CWA, the requirements established by the final rule may not be challenged separately in any civil or criminal proceedings brought by EPA to enforce the requirements.

Outline. The information presented in this preamble is organized as follows:

I. Introduction

A. What Is the Source of Authority for Development of Today's Regulations?

Section 112(c) of the CAA requires us to list categories and subcategories of major sources and area sources of HAP and to establish NESHAP for the listed source categories and subcategories. The PCWP source category was originally listed as the plywood and particleboard source category on July 16, 1992 (57 FR 31576). The name of the source category was changed to plywood and composite wood products on November 18, 1999 (64 FR 63025), to more accurately reflect the types of manufacturing facilities covered by the source category. In addition, when we proposed the PCWP rule on January 9, 2003 (68 FR 1276), we broadened the scope of the source category to include lumber kilns located at stand-alone kiln-dried lumber manufacturing facilities or at any other type of facility. Major sources of HAP are those that have the potential to emit 9.1 Mg/yr (10 tons/yr) or more of any one HAP or 22.3 Mg/yr (25 tons/yr) or more of any combination of HAP.

Section 112(d) of the CAA directs us to adopt emission standards for

categories and subcategories of HAP sources. In cases where emission standards are not feasible, section 112(h) of the CAA allows us to develop design, equipment, work practice, and/or operational standards. The collection of compliance options, operating requirements, and work practice requirements in today's final rule make up the emission standards and work practice standards for the PCWP NESHAP.

We are promulgating the amendments to 40 CFR part 429 under the authority of sections 301, 304, 306, 307, 308, 402, and 501 of the CWA.

Section 112(c)(9) of the CAA allows us to delete categories and subcategories from the list of HAP sources to be subject to MACT standards under section 112(d) of the CAA, if certain substantive criteria are met. (The EPA construes this authority to apply to listed subcategories because doing so is logical in the context of the general regulatory scheme established by the statute, and is reasonable since section 112(c)(9)(B)(ii) expressly refers to subcategories.) To delete a category or subcategory the Administrator must make an initial demonstration that no source in the category or subcategory: (1) Emits carcinogens in amounts that may result in a lifetime cancer risk exceeding one in a million to the individual most exposed; (2) emits noncarcinogens in amounts that exceed a level which is adequate to provide an ample margin of safety to protect public health; and (3) emits any HAP or combination of HAP in amounts that will result in an adverse environmental effect, as defined by section 112(a)(7) of the CAA.

B. What Criteria Are Used in the Development of NESHAP?

Section 112(d)(1) of the CAA requires that we establish NESHAP for the control of HAP from both new and existing major sources. Section 112(d)(2) of the CAA requires the NESHAP to reflect the maximum degree of reduction in emissions of HAP that is achievable. This level of control is commonly referred to as the MACT.

The MACT floor is the minimum control level allowed for NESHAP and is defined under section 112(d)(3) of the CAA. In essence, the MACT floor ensures that the standard is set at a level that ensures that all major sources achieve a level of control at least as stringent as that already achieved by the better-controlled and lower-emitting sources in each source category or subcategory. For new sources, the MACT floor cannot be less stringent than the emission control that is achieved in practice by the best-controlled similar source. The MACT standards for existing sources can be less stringent than standards for new sources, but they cannot be less stringent than the average emission limitation achieved by the best-performing 12 percent of existing sources in the category or subcategory (or the best-performing 5 sources for categories or subcategories with fewer than 30 sources).

In developing MACT under section 112(d)(2) of the CAA, we must also consider any control options that are more stringent than the floor. We may establish standards more stringent than the floor based on the consideration of cost of achieving the emissions reductions, any non-air quality health and environmental impacts, and energy requirements.

C. How Was the Final Rule Developed?

We proposed standards for PCWP on January 9, 2003 (68 FR 1276). The preamble for the proposed standards described the rationale for the proposed standards. Public comments were solicited at the time of proposal. The public comment period lasted from January 9, 2003, to March 10, 2003. Industry representatives, regulatory agencies, environmental groups, and the general public were given the opportunity to comment on the proposed rule and to provide additional information during the public comment period. We also offered at proposal the opportunity for a public hearing concerning the proposed rule, but no hearing was requested. We met with stakeholders on several occasions.

We received a total of 57 public comment letters on the proposed rule during the comment period. Comments were submitted by industry trade associations, PCWP companies, State regulatory agencies, local government agencies, and environmental groups. Today's final rule reflects our consideration of all of the comments received during the comment period. Major public comments on the proposed rule, along with our responses to those comments, are summarized in this preamble.

D. What Are the Health Effects of the Pollutants Emitted From the PCWP Industry?

The final rule protects air quality and promotes the public health by reducing emissions of some of the HAP listed in section 112(b)(1) of the CAA. The organic HAP from PCWP process units that have been detected in one or more emission tests include acetaldehyde, acetophenone, acrolein, benzene, biphenyl, bromomethane, carbon disulfide, carbon tetrachloride, chloroform, chloroethane, chloromethane, cresols, cumene, ethyl benzene, formaldehyde, hydroquinone methanol, methylene chloride, methylene diphenyl diisocyanate (MDI), methyl ethyl ketone (MEK), methyl isobutyl ketone (MIBK), n-hexane, phenol, propionaldehyde, styrene, toluene, xylenes, 1,1,1-trichloroethane, bis-(2-ethylhexyl phthalate), 4-methyl-2-pentanone, and di-n-butyl phthalate. Many of these HAP are rarely detected and occur infrequently. The predominant organic HAP emitted (*i.e.,* those most likely to be emitted in detectable quantities and with high mass relative to other HAP) by PCWP facilities include acetaldehyde, acrolein, formaldehyde, methanol, phenol, and propionaldehyde. Exposure to these compounds has been demonstrated to cause adverse health effects when present in concentrations higher than those typically found in ambient air. This section discusses the health effects associated with the predominant HAP emitted by the PCWP industry, as well as the health effects of the HAP contributing the most to cancer and noncancer risks associated with these PCWP facilities (organic HAP and some metal HAP) that must be included in any demonstration of eligibility for the low-risk subcategory of PCWP sources.

We do not have the necessary data on each PCWP facility and the people living around each facility to determine the actual population exposures to the HAP emitted from these facilities and the potential health effects. Our screening assessment, conducted using health-protective assumptions, indicates that potential noncancer health impacts were negligible to target organ systems other than the central nervous and respiratory systems. Furthermore, only acrolein and formaldehyde showed the potential for acute exposures of any concern. Therefore, noncancer effects other than those effecting the central nervous or respiratory systems are not expected to occur prior to or after regulation, and are provided below only to illustrate the nature of the contaminant's effects at high dose. However, to the extent the adverse effects do occur, today's final rule would reduce emissions by sources subject to the standards and subsequent exposures to such emissions.

1. Acetaldehyde

Acetaldehyde is ubiquitous in the environment and may be formed in the body from the breakdown of ethanol (ethyl alcohol). In humans, symptoms of chronic (long-term) exposure to

acetaldehyde resemble those of alcoholism. Long-term inhalation exposure studies in animals reported effects on the nasal epithelium and mucous membranes, growth retardation, and increased kidney weight. We have classified acetaldehyde as a probable human carcinogen (Group B2) based on animal studies that have shown nasal tumors in rats and laryngeal tumors in hamsters.

2. Acrolein

Acute (short-term) inhalation exposure to acrolein may result in upper respiratory tract irritation and congestion. The major effects from chronic (long-term) inhalation exposure to acrolein in humans consist of general respiratory congestion and eye, nose, and throat irritation. Acrolein is a strong dermal irritant in humans. We consider acrolein to be a possible human carcinogen (Group C) based on limited animal cancer data suggesting an increased incidence of tumors in rats exposed to acrolein in the drinking water.

3. Formaldehyde

Both acute (short-term) and chronic (long-term) exposure to formaldehyde irritates the eyes, nose, and throat. Limited human studies have reported an association between formaldehyde exposure and lung and nasopharyngeal cancer. Animal inhalation studies have reported an increased incidence of nasal squamous cell cancer. We consider formaldehyde a probable human carcinogen (Group B2).

4. Methanol

Chronic (long-term) exposure of humans to methanol by inhalation or ingestion may result in blurred vision, headache, dizziness, and nausea. No information is available on the reproductive, developmental, or carcinogenic effects of methanol in humans. Birth defects have been observed in the offspring of rats and mice exposed to high concentrations of methanol by inhalation. A methanol inhalation study using rhesus monkeys reported a decrease in the length of pregnancy and limited evidence of impaired learning ability in offspring. We have not classified methanol with respect to carcinogenicity.

5. Phenol

Oral exposure to small amounts of phenol may cause irregular breathing and muscular weakness. Anorexia, progressive weight loss, diarrhea, vertigo, salivation, and a dark coloration of the urine have been reported in chronically (long-term) exposed humans. Gastrointestinal irritation and blood and liver effects have also been reported. No studies of developmental or reproductive effects of phenol in humans are available, but animal studies have reported reduced fetal body weights, growth retardation, and abnormal development in the offspring of animals exposed to relatively high doses of phenol by the oral route. We have classified phenol in Group D, not classifiable as to human carcinogenicity.

6. Propionaldehyde

Animal studies have reported that inhalation exposure to high levels of propionaldehyde results in anesthesia and liver damage. No information is available on the chronic (long-term), reproductive, developmental, or carcinogenic effects of propionaldehyde in animals or humans. We have not classified propionaldehyde for carcinogenicity.

7. Arsenic

Chronic (long-term) inhalation exposure to inorganic arsenic in humans is associated with irritation of the skin and mucous membranes. Human data suggest a relationship between inhalation exposure of women working at or living near metal smelters and an increased risk of reproductive effects. Inorganic arsenic exposure in humans by the inhalation route has been shown to be strongly associated with lung cancer. We have classified inorganic arsenic as a Group A, human carcinogen.

8. Beryllium

Chronic (long-term) inhalation exposure of humans to beryllium has been reported to cause chronic beryllium disease (berylliosis), in which granulomatous (noncancerous) lesions develop in the lung. Inhalation exposure to beryllium has been demonstrated to cause lung cancer in rats and monkeys. Human studies are limited, but suggest a causal relationship between beryllium exposure and an increased risk of lung cancer. We have classified beryllium as a Group B1, probable human carcinogen, when inhaled; data are inadequate to determine whether beryllium is carcinogenic when ingested.

9. Cadmium

Chronic (long-term) inhalation or oral exposure to cadmium leads to a build-up of cadmium in the kidneys that can cause kidney disease. Cadmium has been shown to be a developmental toxicant at high doses in animals, resulting in fetal malformations and other effects, but no conclusive evidence exists in humans. Animal studies have demonstrated an increase in lung cancer from long-term inhalation exposure to cadmium. We have classified cadmium as a Group B1, probable human carcinogen when inhaled; data are inadequate to determine whether cadmium is carcinogenic when ingested.

10. Chromium

Chromium may be emitted from PCWP facilities in two forms, trivalent chromium (chromium III) or hexavalent chromium (chromium VI). The respiratory tract is the major target organ for chromium VI toxicity. Bronchitis, decreased pulmonary function, pneumonia, and other respiratory effects have been noted from chronic high concentration exposure. Limited human studies suggest that chromium VI inhalation exposure may be associated with complications during pregnancy and childbirth, while animal studies have not reported reproductive effects from inhalation exposure to chromium VI. Human and animal studies have clearly established that inhaled chromium VI is a carcinogen, resulting in an increased risk of lung cancer. We have classified chromium VI as a Group A, human carcinogen by the inhalation exposure route.

Chromium III is much less toxic than chromium VI. The respiratory tract is also the major target organ for chromium III toxicity, similar to chromium VI. Chromium III is an essential element in humans, with a daily oral intake of 50 to 200 micrograms per day (µg/d) recommended for an adult. Data on adverse effects of high oral exposures of chromium III are not available for humans, but a study with mice suggests possible damage to the male reproductive tract. We have not classified chromium III for carcinogenicity.

11. Manganese

Health effects in humans have been associated with both deficiencies and excess intakes of manganese. Chronic (long-term) exposure to low levels of manganese in the diet is considered to be nutritionally essential in humans, with a recommended daily allowance of 2 to 5 milligrams per day (mg/d). Chronic inhalation exposure to high levels of manganese by inhalation in humans results primarily in central nervous system (CNS) effects. Visual reaction time, hand steadiness, and eye-hand coordination were affected in chronically-exposed workers. Impotence and loss of libido have been noted in male workers afflicted with manganism

attributed to high-dose inhalation exposures. We have classified manganese as Group D, not classifiable as to human carcinogenicity.

12. Nickel

Nickel is an essential element in some animal species, and it has been suggested it may be essential for human nutrition. Nickel dermatitis, consisting of itching of the fingers, hands, and forearms, is the most common effect in humans from chronic (long-term) skin contact with nickel. Respiratory effects have also been reported in humans from inhalation exposure to nickel. No information is available regarding the reproductive or developmental effects of nickel in humans, but animal studies have reported such effects, although a consistent dose-response relationship has not been seen. The forms of nickel which might be emitted from PCWP facilities include soluble nickel, nickel subsulfide, and nickel carbonyl. We have classified nickel refinery dust and nickel subsulfide as Group A, human carcinogens, and nickel carbonyl as a Group B2, probable human carcinogen, by inhalation exposure. Human and animal studies have reported an increased risk of lung and nasal cancers from exposure to nickel refinery dusts and nickel subsulfide. Animal inhalation studies of soluble nickel compounds (*i.e.*, nickel carbonyl) have reported lung tumors.

13. Lead

Elemental lead may cause a variety of effects at low oral or inhaled dose levels. Chronic (long-term) exposure to high levels of lead in humans results in effects on the blood, CNS, blood pressure, and kidneys. Children are particularly sensitive to the chronic effects of lead, with slowed cognitive development, reduced growth, and other effects reported. Reproductive effects, such as decreased sperm count in men and spontaneous abortions in women, have been associated with lead exposure. The developing fetus is at particular risk from maternal lead exposure, with low birth weight and slowed postnatal neurobehavioral development noted. Human studies are inconclusive regarding lead exposure and cancer, while animal studies have reported an increase in kidney cancer from lead exposure by the oral route. We have classified lead as a Group B2, probable human carcinogen.

14. MDI

The MDI has been observed to irritate the skin and eyes of rabbits. Chronic (long-term) inhalation exposure to MDI may cause asthma, dyspnea, and other respiratory impairments in workers. We have classified MDI within Group D, not classifiable as to human carcinogenicity.

15. Benzene

Chronic (long-term) inhalation exposure has caused various disorders in the blood, including reduced numbers of red blood cells. Increased incidence of leukemia (cancer of the tissues that form white blood cells) has been observed in humans occupationally exposed to benzene. We have classified benzene as a Group A, known human carcinogen.

E. Incorporation by Reference of NCASI Test Methods

Today's final rule amends 40 CFR 63.14 by revising paragraph (f) to incorporate by reference two test methods developed by the National Council of the Paper Industry for Air and Stream Improvement (NCASI): (1) Method CI/WP–98.01, ''Chilled Impinger Method for Use at Wood Products Mills to Measure Formaldehyde, Methanol, and Phenol'; and (2) NCASI Method IM/CAN/WP–99.02, ''Impinger/Canister Source Sampling Method for Selected HAPs and Other Compounds at Wood Products Facilities.'' These methods are available from NCASI, Methods Manual, P.O. Box 133318, Research Triangle Park, NC 27709–3318 or at *http://www.ncasi.org.* They are also available from the docket for the final rule (Docket Number OAR–2003–0048 and Docket Number A–98–44). These documents were approved for incorporation by reference by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

F. Incorporation by Reference of ASTM Test Method

Today's final rule amends 40 CFR 63.14 by adding paragraph (b)(54) to incorporate by reference a test method developed by the American Society for Testing and Materials (ASTM), ASTM D6348–03, ''Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy.'' This test method is available from ASTM, 100 Barr Harbor Drive, Post Office Box C700, West Conshohocken, PA 19428–2959; or ProQuest, 300 North Zeeb Road, Ann Arbor, MI 48106. This document has been approved for incorporation by reference by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR 51.

II. Summary of the Final Rule

A. What Process Units Are Subject to the Final Rule?

The final rule regulates HAP emissions from PCWP facilities that are major sources. Plywood and composite wood products are manufactured by bonding wood material (fibers, particles, strands, etc.) or agricultural fiber, generally with resin under heat and pressure, to form a structural panel or engineered wood product. Plywood and composite wood products manufacturing facilities also include facilities that manufacture dry veneer and lumber kilns located at any facility. Plywood and composite wood products include (but are not limited to) plywood, veneer, particleboard, oriented strandboard, hardboard, fiberboard, medium density fiberboard, laminated strand lumber, laminated veneer lumber, wood I-joists, kiln-dried lumber, and glue-laminated beams. Table 1 of this preamble lists the process units at PCWP facilities and indicates which process units are subject to the control requirements in today's final rule. ''Process unit'' means equipment classified according to its function such as a blender, dryer, press, former, or board cooler.

The affected source for the final rule is the combination of all PCWP manufacturing operations, including PCWP process units, onsite storage of raw materials, onsite wastewater treatment operations associated with PCWP manufacturing, and miscellaneous coating operations located at a major source facility. One of the implications of this definition of affected source is that the control requirements, or ''floor,'' as defined in section 112(d)(3), are determined for the entire PCWP facility. Therefore, except for lumber kilns not otherwise located at PCWP facilities, the final rule contains the control requirements that represent the MACT level of control for the entire facility. For lumber kilns not otherwise located at PCWP facilities, the final rule contains the control requirements that represent the MACT level of control only for lumber kilns.

TABLE 1.—PROCESS UNITS THAT ARE SUBJECT TO THE FINAL CONTROL REQUIREMENTS

For the following process units . . .	Does today's final rule include control requirements for . . .	
	Existing affected sources?	New affected sources?
Softwood veneer dryers [a]; primary tube dryers; secondary tube dryers; rotary strand dryers; conveyor strand dryers; green rotary dryers; hardboard ovens; reconstituted wood product presses; and pressurized refiners.	Yes.	Yes.
Press predryers; fiberboard mat dryers; and board coolers	No.	Yes.
Dry rotary dryers [a]; veneer redryers [a]; softwood plywood presses; hardwood plywood presses; engineered wood products presses; hardwood veneer dryers [a]; humidifiers; atmospheric refiners; formers; blenders; rotary agricultural fiber dryers; agricultural fiber board presses; sanders; saws; fiber washers; chippers; log vats; lumber kilns; storage tanks; wastewater operations; miscellaneous coating operations (including group 1 miscellaneous coating operations [a]); and stand-alone digesters.	No.	No.

[a] These process units have work practice requirements in today's final rule in addition to or instead of control requirements. Group 1 miscellaneous coating operations include application of edge seals, nail lines, logo (or other information) paint, shelving edge fillers, trademark/grade-stamp inks, and wood putty patches to PCWP (except kiln-dried lumber) on the same site where the PCWP are manufactured. Group 1 miscellaneous coating operations also include application of synthetic patches to plywood at new affected sources.

B. What Pollutants Are Regulated by the Final Rule?

The final rule regulates HAP emissions from PCWP facilities. For the purpose of compliance with 40 CFR part 63, subpart DDDD, we defined ''total HAP'' to be the sum of the emissions of six primary HAP emitted from PCWP manufacturing. The six HAP that define total HAP make up 96 percent of the nationwide HAP emissions from PCWP facilities and are acetaldehyde, acrolein, formaldehyde, methanol, phenol, and propionaldehyde. Other HAP are sometimes emitted and controlled along with these six HAP, but in lower quantities. Depending upon which of the compliance alternatives you choose, you could be required to measure emissions of total HAP, total hydrocarbon (THC), methanol, or formaldehyde as surrogates for measuring all HAP. For the purpose of determining whether your facility is a major source, you would have to include all HAP as prescribed by rules and guidance pertaining to determination of major source.

C. What Are the Compliance Options?

Today's final rule includes a range of compliance options, which are summarized in the following subsections. You must use one of the compliance options to show compliance with the final rule. In most cases, the compliance options are the same for new and existing sources. Dilution to achieve compliance is prohibited, as specified in 40 CFR 63.4.

1. Production-Based Compliance Options

Today's final rule includes production-based compliance options (PBCO), which are based on total HAP and vary according to type of process unit. Total HAP emissions are defined in today's final rule as the total mass emissions of the following six HAP: acetaldehyde, acrolein, formaldehyde, methanol, phenol, and propionaldehyde. The PBCO are in units of mass of pollutant per unit of production. Add-on control systems may not be used to meet the production-based compliance options. For pressurized refiners and most dryers, the PBCO are expressed as pounds per oven-dried-ton of wood (lb/ODT). For presses, hardboard ovens, and some dryers, the PBCO are expressed as pounds per thousand square feet of board (lb/MSF), with a reference board thickness. There is no PBCO for conveyor strand dryers.

2. Add-On Control System Compliance Options

If you operate a process unit equipped with an add-on control system, you may use any one of the following six compliance options. ''Add-on control system'' or ''control system'' means the combination of capture and control devices used to reduce HAP emissions to the atmosphere.

(1) Reduce THC emissions (as carbon, and minus methane if you wish to subtract methane) by 90 percent.

(2) Reduce methanol emissions by 90 percent.

(3) Reduce formaldehyde emissions by 90 percent.

(4) Limit the concentration of THC (as carbon, and minus methane if you wish to subtract methane) in the outlet of the add-on control system to 20 parts per million by volume, dry basis (ppmvd).

(5) Limit the concentration of methanol in the exhaust from the add-on control system to 1 ppmvd (can be used only if the concentration of methanol entering the control device is greater than or equal to 10 ppmvd).

(6) Limit the concentration of formaldehyde in the exhaust from the add-on control system to 1 ppmvd (can be used only if the concentration of formaldehyde entering the control device is greater than or equal to 10 ppmvd).

In the first three options ((1) through (3)), the 90 percent control efficiency represents a total control efficiency. Total control efficiency is defined as the product of the capture efficiency and the control device efficiency. For process units such as rotary strand dryers, capture efficiency is not an issue because the rotary strand dryer has a single exhaust point which is easily captured by the control device. However, for presses and board coolers, the HAP emissions cannot be completely captured without installing an enclosure. If the enclosure meets the criteria for a wood products enclosure as defined in § 63.2292 in today's final rule, then you would assign the enclosure a capture efficiency of 100 percent. You must test other enclosures to determine capture efficiency using EPA Test Methods 204 and 204A through 204F (as appropriate) found in 40 CFR part 51, appendix M, or the alternative tracer gas procedure in appendix A to today's final rule. For the three concentration options ((4) through (6)), you must have an enclosure that either meets the criteria for a wood products enclosure or achieves a capture efficiency greater than or equal to 95 percent.

The six compliance options are equivalent ways to express the HAP control levels that represent the MACT floor. Because the compliance options are equivalent for controlling HAP emissions, you are required to meet only

one of the six compliance options for add-on control systems. However, you must designate in your permit which one of the six options you have selected for the affected process unit. If you plan to operate a given process unit under different conditions, you may incorporate multiple compliance options for the add-on control system into your permit, as long as each separate operating condition is identified along with the compliance option that corresponds to that operating condition.

3. Emissions Averaging Compliance Option

Emissions averaging is a means of achieving the required emissions reductions in a less costly way. Therefore, if you operate an existing affected source, for each process unit you could choose to comply with the emissions averaging provisions instead of the production-based compliance options or add-on control system compliance options.

Emissions averaging is a system of debits and credits in which the credits must equal or exceed the debits. ''Debit-generating process units'' are the PCWP process units that are required to meet the control requirements but that you choose to either not control or under-control. ''Credit-generating process units'' are the PCWP process units that you choose to control that are not required to be controlled under the standards. When determining your actual mass removal (AMR) of HAP, you may include partial credits generated from debit-generating process units that are under-controlled (*e.g.,* you may receive credit for 25 percent control of a debit-generating process unit). Control devices used for credit-generating process units may not be assigned more than 90 percent control efficiency.

Under the emissions averaging provisions, you would determine the required mass removal (RMR) of total HAP from debit-generating process units for a 6-month compliance period. Total HAP is defined in today's final rule to include acetaldehyde, acrolein, formaldehyde, methanol, phenol, and propionaldehyde. The RMR would be based on initial total HAP measurements for each debit-generating process unit, your process unit operating hours for a 6-month period, and the required 90 percent control system efficiency. One hundred percent of the RMR for debit-generating process units would have to be achieved or exceeded by the AMR of total HAP achieved by credit-generating process units. The AMR is determined based on initial performance tests, the total HAP removal efficiency (not to exceed 90 percent) of the control systems used to control the credit-generating process units, and your process unit operating hours over the 6-month period.

There are some restrictions on use of the emissions averaging provisions in today's final rule. You must limit emissions averaging to the process units located within your affected source. Emissions averaging may not be used at new affected sources. You may not include in an emissions average those process units that are not operating or that are shut down. Only PCWP process units using add-on control systems may be used to generate credits.

D. What Operating Requirements Are in the Final Rule?

The operating requirements in today's final rule apply to add-on control systems used to comply with the final rule and to process units meeting the final production-based compliance options or emissions averaging provisions without an add-on control device (*e.g.*, debit-generating process units). For incineration-based control devices and biofilters, the final rule specifies that you must either monitor operating parameters or use a THC continuous emission monitoring system (CEMS) to demonstrate continuous compliance. The final operating requirements are summarized below:

- If you operate a thermal oxidizer, such as a regenerative thermal oxidizer (RTO), you must maintain the firebox temperature at a level that is greater than or equal to the minimum temperature established during the performance test. If you operate a combustion unit that accepts process exhaust into the flame zone, you are exempt from the testing and monitoring requirements described above for thermal oxidizers.
- If you operate a catalytic oxidizer, such as a regenerative catalytic oxidizer (RCO) or thermal catalytic oxidizer (TCO), you must maintain the average catalytic oxidizer temperature at or above the minimum temperature established during the performance test. You must also check the activity level of a representative sample of the catalyst at least every 12 months.
- If you operate a biofilter, you must maintain the average biofilter bed temperature within the range you develop during the initial performance test or during qualifying previous performance tests using the required test methods. If you use values from previous performance tests to establish the operating parameter ranges, you must certify that the biofilter and associated process unit(s) have not been modified subsequent to the date of the performance tests.
- If you operate an add-on control system not listed in today's final rule, you must establish operating parameters to be monitored and parameter values that represent your operating requirements during the performance test, subject to prior written approval by the Administrator.
- If you operate a process unit that meets the production-based compliance options or a process unit that generates debits in an emissions average without an add-on control device, you must maintain on a daily basis the process unit controlling operating parameter(s) within the ranges established during the performance test corresponding to the representative operating conditions identified during the performance test.
- As an alternative to monitoring the operating parameters specified above for thermal oxidizers, catalytic oxidizers, biofilters, other control devices, and process units that meet compliance options without add-on control systems, you may monitor THC concentration in the outlet stack with a THC CEMS. If you select this option, you must maintain the outlet THC concentration below the maximum concentration established during the performance test. You may choose to subtract methane from the THC concentration measured by the CEMS if you wish to do so.

E. What Are the Work Practice Requirements?

The work practice requirements in today's final rule apply to softwood veneer dryers, dry rotary dryers, veneer redryers, hardwood veneer dryers, and group 1 miscellaneous coating operations. For softwood veneer dryers, the work practice requirements require you to minimize fugitive emissions from the veneer dryer doors (by applying appropriate operation and maintenance procedures) and from the green end of the dryers (through proper balancing of hot zone exhausts). For group 1 miscellaneous coating operations, the work practice requirements specify that you must use a non-HAP coating. The work practice requirements also specify parameters that you must monitor to demonstrate that each dry rotary dryer, veneer redryer, and hardwood veneer dryer continuously operates in a manner consistent with the definitions of these process units provided in today's final rule, as follows:

- If you operate a dry rotary dryer, you must maintain the inlet dryer temperature at or below 600°F and maintain the moisture content of the wood particles entering the dryer at or below 30 weight percent, on a dry basis.

• If you operate a veneer redryer, you must maintain the moisture content of the wood veneer entering the dryer at or below 25 percent, by weight.

• If you operate a hardwood veneer dryer, you must process less than 30 percent, by volume, softwood species each year.

F. When Must I Comply With the Final Rule?

Existing PCWP facilities must comply within 3 years of September 28, 2004. New sources that commence construction after January 9, 2003, must comply immediately upon initial startup or on September 28, 2004, whichever is later.

Existing sources that wish to be included in the delisted low-risk subcategory must receive EPA approval of their eligibility demonstrations no later than 3 years after September 28, 2004, or be in compliance with the final rule. New sources that wish to be included in the delisted low-risk subcategory must receive EPA approval of their eligibility demonstrations no later than initial startup or on September 28, 2004, which ever is later, or be in compliance with the final rule.

G. How Do I Demonstrate Initial Compliance With the Final Rule?

The initial compliance requirements in today's final rule vary with the different compliance options.

1. Production-Based Compliance Options

If you are complying with the PBCO in today's final rule, you must conduct an initial performance test using specified test methods to demonstrate initial compliance. You must test the efficiency of your emissions capture device during the initial performance test if the process unit is a press or board cooler. The actual emission rate of the press or board cooler is equivalent to the measured emissions divided by the capture efficiency. You must test prior to any wet control device operated on the process unit. During the performance test, you must identify the process unit controlling parameter(s) that affect total HAP emissions; these parameters must coincide with the representative operating conditions you describe in the performance test. For each parameter, you must specify appropriate monitoring methods and monitoring frequencies, and for continuously monitored parameters, you must specify averaging times not to exceed 24 hours. You must install process monitoring equipment or establish recordkeeping procedures to be used to demonstrate compliance with the operating requirements for the parameters you select. During the initial performance test, you must use the process monitoring equipment or recordkeeping procedures to establish the parameter value (e.g., maximum, minimum, average, or range, as appropriate) that represents your operating requirement for the process unit. Alternatively, you may install a THC CEMS and monitor the process unit outlet THC concentration and establish your THC operating requirement during the performance test.

2. Add-On Control System Compliance Options

If you use the compliance options for add-on control systems, you must conduct an initial performance test using specified test methods to demonstrate initial compliance. With the exception of the 20 ppmvd THC concentration option, you must test at both the inlet and the outlet of the HAP control device. For HAP-altering controls in sequence, such as a wet control device followed by a thermal oxidizer, you must test at the functional inlet of the control sequence (e.g., prior to the wet control device) and at the outlet of the control sequence (e.g., thermal oxidizer outlet). If you use a wet control device as the sole means of reducing HAP emissions, you must develop and implement a plan to address how organic HAP captured in the wastewater from the wet control device is contained or destroyed to minimize re-release to the atmosphere such that the desired emission reduction is obtained. If you use any of the six compliance options for add-on control systems, and the process unit is a press or a board cooler without a wood products enclosure, you must also test the capture efficiency of your partial wood products enclosure. Prior to the initial performance test, you must install control device parameter monitoring equipment or THC CEMS to be used to demonstrate compliance with the operating requirements for add-on control systems in today's final rule. During the initial performance test, you must use the control device parameter monitoring equipment or THC CEMS to establish the parameter values that represent your operating requirements for the control systems. If your add-on control system is preceded by a particulate control device (e.g., baghouse or wet electrostatic precipitators (WESP)), you must establish operating parameter values for the HAP control system and not for the particulate control device. If your control device is a biofilter, then you may use values recorded during previous performance tests for the biofilter to establish your operating requirements as long as you were in compliance with the emission limits in today's final rule when the data were collected, the test data were obtained using the test methods in today's final rule, and no modifications were made to the process unit or biofilter subsequent to the date of the performance tests.

3. Emissions Averaging Compliance Option

If you elect to comply with the emissions averaging compliance option in today's final rule, you must submit an Emissions Averaging Plan (EAP) to the Administrator for approval. The EAP must describe the process units you are including in the emissions average. The plan also must specify which process units will be credit-generating units (including under-controlled, debit-generating process units that also generate credits) and which process units will be debit-generating units. The EAP must also include descriptions of the control systems used to generate emission credits, documentation of the total HAP measurements made to determine the RMR, calculations and supporting documentation to demonstrate that the AMR will be greater than or equal to the RMR, and a summary of the operating parameters that will be monitored.

Following approval of your EAP, you must conduct performance tests to determine the total HAP emissions from all process units included in the EAP. The credit-generating process units must be equipped with add-on control systems; therefore, for those process units, you must follow the procedures for demonstrating initial compliance as outlined above for add-on control systems. For debit-generating process units without air pollution control devices (APCD), you must follow the same procedure for establishing your operating requirements as outlined above for process units meeting the PBCO. The emissions averaging provisions require you to conduct all total HAP measurements and performance test(s) when the process units are operating under representative operating conditions. Today's final rule defines ''representative operating conditions'' as those conditions under which the process unit will typically be operating following the compliance date. Representative conditions include such things as using a representative range of materials (*e.g.,* wood material of a typical species mix and moisture content, typical resin formulations) and

operating the process unit at typical operating temperature ranges.

4. Work Practice Requirements

The work practice requirements in today's final rule do not require you to conduct any initial performance tests. To demonstrate initial compliance with the work practice requirements for dry rotary dryers, you must install parameter monitoring devices to continuously monitor the dryer inlet operating temperature and the moisture content (dry basis) of the wood furnish (*i.e.,* wood fibers, particles, or strands used for making board) entering the dryer. You must then use the parameter monitoring devices to continuously monitor and record the dryer temperature and wood furnish moisture content for a minimum of 30 days. If the monitoring data indicate that during the minimum 30-day demonstration period, your dry rotary dryer continuously processed wood furnish with an inlet moisture content less than or equal to 30 percent, and the dryer was continuously operated at an inlet dryer temperature less than or equal to 600°F, then your dryer meets the definition of a dry rotary dryer in today's final rule. You must submit the monitoring data as part of your notification of compliance status report.

To demonstrate initial compliance with the work practice requirements for hardwood veneer dryers, you must calculate the annualized percentage of softwood veneer processed in the dryer by volume, using veneer dryer production records for the 12-month period prior to the compliance date. If the total annual percentage by volume of softwood veneer is less than 30 percent, your veneer dryer meets the definition of hardwood veneer dryer. You must then submit a summary of the production data for the 12-month period and a statement verifying that the veneer dryer will continue to process less than 30 percent softwoods as part of your notification of compliance status report.

To demonstrate initial compliance with the work practice requirements for softwood veneer dryers, you must develop a plan for minimizing fugitive emissions from the veneer dryer green end and heated zones. You must submit the plan with your notification of compliance status report.

To demonstrate initial compliance with the work practice requirements for veneer redryers, you must install a device that can be used to continuously monitor the moisture content (dry basis) of veneer entering the dryer. You must then use the moisture monitoring device to continuously monitor and record the inlet moisture content of the veneer for a minimum of 30 days. If the monitoring data indicate that your veneer dryer continuously processed veneer with a moisture content less than or equal to 25 percent during the minimum 30-day demonstration period, then your veneer dryer meets the definition of a veneer redryer in today's final rule. You must submit the monitoring data as part of your notification of compliance status report.

To demonstrate initial compliance with the work practice requirement for group 1 miscellaneous coating operations, you must submit a signed statement with your notification of compliance status report stating that you are using non-HAP coatings. You must also have a record (*e.g.,* material safety data sheets) showing that you are using non-HAP coatings as defined in today's final rule.

H. How Do I Demonstrate Continuous Compliance With the Final Rule?

The continuous compliance requirements in today's final rule vary with the different types of compliance options.

1. Production-Based Compliance Options

If you comply with the PBCO, then you must monitor and/or record the controlling operating parameter(s) identified as affecting total HAP emissions from the process unit(s) in the performance test. For each parameter, you must use the monitoring methods, monitoring frequencies, and averaging times (for continuously monitored parameters not to exceed 24 hours) specified in your performance test and Notification of Compliance Status. For each operating parameter, you must maintain on a daily basis the parameter at or above the minimum, at or below the maximum, or within the range (whichever applies) established during the performance test.

Instead of monitoring process operating parameters, you may operate a CEMS for monitoring THC concentration to demonstrate compliance with the operating requirements in today's final rule. If you choose to operate a THC CEMS in lieu of a continuous parameter monitoring systems (CPMS), you must demonstrate continuous compliance, as described in the following subsection.

2. Add-On Control System Compliance Options

For add-on control systems, you must install a CPMS to monitor the temperature or install a CEMS to monitor THC concentration to demonstrate compliance with the operating requirements in today's final rule. If you operate a CPMS, you must have at least 75 percent of the required recorded readings for each 3-hour or 24-hour block averaging period to calculate the data averages. You must operate the CPMS at all times the process unit is operating. You must also conduct proper maintenance of the CPMS and maintain an inventory of necessary parts for routine repairs of the CPMS. Using the data collected with the CPMS, you must calculate and record the average values of each operating parameter according to the specified averaging times.

For thermal oxidizers, you must continuously maintain the 3-hour block average firebox temperature at or above the minimum temperature established during the performance test. For catalytic oxidizers, you must continuously maintain the 3-hour block average catalytic oxidizer temperature at or above the minimum value established during the performance test. You must also check the activity level of a representative sample of the catalyst at least every 12 months and take any necessary corrective action to ensure that the catalyst is performing within its design range.

For biofilters, you must continuously maintain the 24-hour block average biofilter bed temperature within the operating range you establish during the performance test. You must also conduct a repeat performance test using the applicable method(s) within 2 years following the previous performance test and within 180 days after each replacement of any portion of the biofilter bed with a different media or each replacement of more than 50 percent (by volume) of the biofilter bed media with the same type of media.

If you choose to operate a CEMS for monitoring THC concentration instead of operating a CPMS, you must install, operate, and maintain the CEMS according to Performance Specification 8 in 40 CFR part 60, appendix B. You must also comply with the CEMS data quality assurance requirements in Procedure 1 of appendix F of 40 CFR part 60. You must conduct a performance evaluation of the CEMS according to 40 CFR 63.8 and Performance Specification 8. The CEMS must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. Using the data collected with the CEMS, you must calculate and record the 3-hour block average THC concentration for thermal or catalytic oxidizers. For biofilters, you must calculate and record the 24-hour block

average THC concentration. You must continuously monitor and maintain the 24-hour block average THC concentration at or below the maximum established during the performance test. You may use a CEMS that subtracts methane from the measured THC concentration if you wish to do so.

If you comply with today's final rule using an add-on control system, you may request a routine control device maintenance exemption from the Administrator. Your request for a routine control device maintenance exemption must document the need for routine maintenance on the control device and the time required to accomplish the maintenance, describe the maintenance activities and the frequency of these activities, explain why the maintenance cannot be accomplished during process shutdowns, describe how you plan to make reasonable efforts to minimize emissions during these maintenance activities, and provide any other documentation required by the Administrator. If your request for the routine control device maintenance exemption is approved by the Administrator, it must be incorporated into your title V permit. The compliance options and operating requirements would not apply during times when control device maintenance covered under your approved routine control device maintenance exemption is performed. The routine control device maintenance exemption may not exceed 3 percent of annual operating uptime for each green rotary dryer, tube dryer, rotary strand dryer, or pressurized refiner controlled. The routine control device maintenance exemption is limited to 0.5 percent of the annual operating uptime for each softwood veneer dryer, reconstituted wood product press, reconstituted wood product board cooler, hardboard oven, press predryer, conveyor strand dryer, or fiberboard mat dryer controlled. If your control device is used to control a combination of equipment with different downtime allowances (*e.g.*, a tube dryer and a press), then the highest (*i.e.*, 3 percent) downtime allowance applies.

3. Emissions Averaging Compliance Option

To demonstrate continuous compliance with the emissions averaging provisions, you must continuously comply with the applicable operating requirements for add-on control systems (described in the previous subsection). You also must maintain records of your operating hours for each process unit included in the EAP. For each semiannual compliance period, you must demonstrate that the AMR equals or exceeds the RMR using your initial (or most recent) total HAP measurements for debit-generating units, initial (or most recent) performance test results for credit-generating units, and the operating hours recorded for the semiannual compliance period.

4. Work Practice Requirements

To demonstrate continuous compliance with the work practice requirements for dry rotary dryers and veneer redryers, you must operate all dry rotary dryers and veneer redryers so that they continuously meet the definitions of these process units in today's final rule. For dry rotary dryers, you must continuously monitor and maintain the inlet furnish moisture content at or below 30 percent and the inlet dryer operating temperature at or below 600°F. You must also calibrate the moisture monitor based on the procedures specified by the moisture monitor manufacturer at least once per semiannual compliance period to verify the readings from the moisture meter. For veneer redryers, you must continuously monitor and maintain the inlet veneer moisture content at or below 25 percent.

To demonstrate continuous compliance with the work practice requirements for softwood veneer dryers, you must follow the procedures in your operating plan for minimizing fugitive emissions from the green end and heated zones of the veneer dryer and maintain records documenting that you have followed your plan. For hardwood veneer dryers, you must continue to process less than 30 percent softwood veneer by volume and maintain records on veneer dryer production.

To demonstrate continuous compliance with the work practice requirements for group 1 miscellaneous coating operations, you must keep records showing that you continue to use non-HAP coatings as defined in the final rule.

I. How Do I Demonstrate That My Affected Source Is Part of the Low-Risk Subcategory?

For your affected source to be part of the delisted low-risk subcategory, you must have a low-risk demonstration approved by EPA, and you must then have federally enforceable conditions reflecting the parameters used in your EPA-approved demonstration incorporated into your title V permit to ensure that your affected source remains low-risk. Low-risk demonstrations for eight facilities were conducted by EPA, and no further demonstration is required for them. They will, however, need to obtain title V permit terms reflecting their status. (We will provide these sources and their title V permitting authorities with the necessary parameters for establishing corresponding permit terms and conditions.) These facilities are listed in Table 2 to this preamble. Other facilities may demonstrate to EPA that their PCWP affected source is low risk by using the look-up tables in appendix B to 40 CFR part 63, subpart DDDD or conducting a site-specific risk assessment as specified in appendix B to subpart DDDD. Appendix B to subpart DDDD also specifies which process units and pollutants must be included in your low-risk demonstration, emissions testing methods, the criteria for determining if an affected source is low risk, risk assessment methodology (look-up table analysis or site-specific risk analysis), contents of the low-risk demonstration, schedule for submitting and obtaining approval of your low-risk demonstration, and methods for ensuring that your affected source remains in the low-risk subcategory. If you demonstrate that your affected source is part of the delisted low-risk subcategory of PCWP manufacturing facilities, then your affected source is not subject to the MACT compliance options, operating requirements, and work practice requirements in the final PCWP rule (subpart DDDD).

1. Low-Risk Criteria

We may approve your affected source as eligible for membership in the delisted low-risk subcategory of PCWP sources if we determine that it is low risk for both carcinogenic and noncarcinogenic effects. To be considered low risk, the PCWP affected source must meet the following criteria: (1) The maximum off-site individual lifetime cancer risk at a location where people live is less than one in one million for carcinogenic chronic inhalation effects; (2) every maximum off-site target-organ specific hazard index (TOSHI) (or, alternatively, an appropriately site-specific set of hazard indices based on similar or complementary mechanisms of action that are reasonably likely to be additive at low dose or dose-response data for your affected source's HAP mixture) at a location where people live is less than or equal to 1.0 for noncarcinogenic chronic inhalation effects; and (3) the maximum off-site acute hazard quotients for acrolein and formaldehyde are less than or equal to 1.0 for

noncarcinogenic acute inhalation effects. These criteria are built into the look-up tables included in appendix B to subpart DDDD. Facilities conducting site-specific risk assessments must explicitly demonstrate that they meet these criteria. Facilities need not perform site-specific multipathway human health risk assessments or ecological risk assessments since EPA performed a source category-wide screening assessment which demonstrates that these risks are insignificant for all sources.

2. PCWP Affected Sources Delisted in Today's Action

Eight PCWP affected sources are being delisted today as part of the low-risk subcategory. They are listed below in Table 2 of this preamble. If your affected source is part of the low-risk subcategory and you do not wish it to remain in the subcategory, you may notify us, in writing, and we will remove your affected source from the low-risk subcategory. Any affected sources removed from the low-risk subcategory are subject to the requirements of subpart DDDD, as applicable. Please address your written notification to Ms. Mary Tom Kissell (see **FOR FURTHER INFORMATION CONTACT** section).

TABLE 2. — LOW - RISK AFFECTED SOURCES IN THE LOW-RISK PCWP SUBCATEGORY

Name of Affected Source	Location
Georgia-Pacific Plywood Plant.	Monroeville, AL.
Georgia-Pacific—Hawthorne Plywood Mill.	Hawthorne, FL.
Oregon Panel Products (Lebanite).	Lebanon, OR.
Hardel Mutual Plywood Corporation.	Chehalis, WA.
Hood Industries, Incorporated.	Wiggins, MS.
Plum Creek Manufacturing, LP.	Kalispell, MT.
Potlatch Corporation—St. Maries Plywood.	St. Maries, ID.
SierraPine Limited, Rocklin MDF.	Rocklin, CA.

We performed a risk assessment to determine the magnitude of potential chronic human cancer and noncancer risks and the potential for acute noncancer risks and adverse environmental impacts associated with the sources in the PCWP source category. The risk assessment was performed for 181 of the 223 major PCWP affected sources. Affected sources where available location data were ambiguous or where all of their site-specific information was requested to be treated as confidential were excluded from the analysis, leaving a total of 181 affected sources in the assessment. For the risk assessment, we used our baseline emission estimates (developed using average emission factors and, if available, site-specific process throughput data) and model PCWP emissions release characteristics as inputs into our Human Exposure Model (HEM) to generate cancer and non-cancer risk estimates for the 181 PCWP affected sources. The risk assessment methodology is explained in detail in the supporting information for this final rule.

Because our risk estimates include model emissions release information, they are not as rigorous as the risk demonstrations we are requiring PCWP affected sources to perform. Therefore, to ensure the affected sources listed in Table 2 of this preamble meet the low risk criteria in appendix B to subpart DDDD, we subjected them to more stringent standards than required for risk demonstrations based on better (*i.e.*, site-specific) data. First, we increased the level of protection to human health by a factor of 10. Instead of using the criteria established in appendix B to subpart DDDD of one in 1 million risk for cancer and TOSHI of less than or equal to 1.0, PCWP affected sources with cancer risk greater than 0.1 in 1 million or a TOSHI greater than 0.1 were excluded. For the remaining PCWP affected sources, we estimated emission factors based on the highest emissions test data we had. We remodeled these PCWP affected sources using worst-case (*i.e.* highest) emission factors and the January 2004 IRIS cancer URE for formaldehyde. From this analysis, affected sources with hazard index values greater than 0.2 or cancer risks greater than one in 1 million were excluded. Of the remaining affected sources, we eliminated those that are closed, have pending enforcement actions, and that did not submit or claimed as confidential site-specific throughput data. We also consulted with an industry trade association and they removed various affected sources from the list for various reasons.

3. Determining HAP Emissions From the Affected Source

You must include in your low-risk demonstration every process unit within the PCWP affected source that emits one or more of the following HAP: acetaldehyde, acrolein, arsenic, benzene, beryllium, cadmium, chromium, formaldehyde, lead, MDI, manganese, nickel, and phenol. You must conduct emissions testing using the methods specified in appendix B to subpart DDDD. For reconstituted wood product presses or reconstituted wood product board coolers, you must determine the capture efficiency of the capture device. If you use a control device for purposes of demonstrating that your affected source is part of the low-risk subcategory, then you must collect monitoring data and establish operating limits for the control system using the same methods specified in subpart DDDD.

4. Low-Risk Demonstrations

Once you have conducted emissions testing, you may perform a lookup table analysis or site-specific risk analysis. Regardless of the type of risk analysis used, you must use the most recent EPA-approved dose-response values as posted on our Air Toxics Website at *http://www.epa.gov/ttn/atw/toxsource/summary.html* to demonstrate that your affected source may be part of the low-risk subcategory. If you can demonstrate that your affected source is low-risk based on the look-up table analysis, then you need not complete a site-specific risk analysis. If your affected source is not low-risk based on the look-up table analysis, then you may elect to proceed with site-specific risk analysis. Appendix B to subpart DDDD specifies what your low-risk demonstration must contain.

Look-up table analysis. You may use the look-up tables (Tables 3 and 4 to 40 CFR part 63, subpart DDDD, appendix B) to determine if your affected source may be part of the low-risk subcategory. Table 3 to appendix B to subpart DDDD provides the maximum allowable toxicity-weighted carcinogen emission rate, and Table 4 to appendix B to subpart DDDD provides the maximum allowable toxicity-weighted noncarcinogen emission rate that your affected source can emit. To use the look-up tables, you must determine your toxicity-weighted carcinogen and noncarcinogen emission rates using the equations in appendix B to subpart DDDD; the average stack height of all PCWP emission points at your affected source; and the minimum distance from any emission point to the nearest property boundary. If the total toxicity-weighted carcinogen and noncarcinogen emission rates for your affected source are less than or equal to the values in both look-up tables, then EPA may approve your affected source as part of the low-risk subcategory of PCWP affected sources.

Site-specific risk assessment. You may use any scientifically-accepted peer-reviewed risk assessment methodology to demonstrate to EPA that

your affected source may be low risk. An example approach to performing a site-specific risk assessment for air toxics that may be appropriate for your affected source can be found in the ''Air Toxics Risk Assessment Reference Library.'' However, this approach may not be appropriate for all affected sources, and EPA may require that any specific affected source use an alternative approach. You may obtain a copy of the ''Air Toxics Risk Assessment Reference Library, Volume 2, Site-Specific Risk Assessment Technical Resource Document'' through EPA's air toxics website at *www.epa.gov/ttn/atw.*

For EPA to approve your low-risk demonstration, you must demonstrate that: (1) The maximum off-site individual lifetime cancer risk at a location where people live is less than one in one million for carcinogenic chronic inhalation effects; (2) every maximum off-site TOSHI at a location where people live is less than or equal to 1.0 for non-carcinogenic chronic inhalation effects; and (3) the maximum off-site acute hazard quotients for acrolein and formaldehyde are less than or equal to 1.0 for noncarcinogenic acute inhalation effects.

5. When Must I Submit Risk Demonstrations to EPA?

You must submit your low-risk demonstration to EPA for approval. If you have an existing affected source, you must submit your low-risk demonstration no later than July 31, 2006. To facilitate the review and approval process, EPA encourages facilities to submit their assessments as soon as possible. If you have an affected source that is an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP before the effective date of subpart DDDD, then you must complete and submit for EPA approval your low-risk demonstration no later than July 31, 2006. If you have an affected source that is an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP after the effective date of subpart DDDD, then you must complete and submit for approval your low-risk demonstration no later than 12 months after you become a major source or after initial startup of your affected source as a major source, whichever is later.

If you have a new or reconstructed affected source you must conduct the emission tests upon initial startup and use the results of these emissions tests to complete and submit your low-risk demonstration within 180 days following your initial startup date. If your new or reconstructed affected source starts up before the effective date of subpart DDDD, for EPA to find that you are included in the low-risk subcategory, your low-risk demonstration must show that you were eligible for the low-risk subcategory no later than the effective date of subpart DDDD. If your new or reconstructed source starts up after the effective date of subpart DDDD, for EPA to find that you are included in the low-risk subcategory, your low-risk demonstration must show that you were eligible for the low-risk subcategory upon initial startup of your affected source.

Affected sources that are not part of the low-risk subcategory within 3 years after the effective date of subpart DDDD must comply with the requirements of 40 CFR part 63, subpart DDDD. Facilities may not request compliance extensions from the permitting authority if they fail to demonstrate they are part of the low-risk subcategory or to request additional time to install controls to become part of the low-risk subcategory. All approved low risk sources must then obtain title V permit revisions including terms and conditions reflecting the parameters used in their approved demonstrations, according to the schedules in their applicable part 70 or part 71 title V permit programs.

6. Remaining in the Low-Risk Subcategory

You must ensure that your affected source is low risk by periodically certifying your affected source is low risk, monitoring applicable HAP control device parameters, and by maintaining certain records. You must certify with each annual title V permit compliance certification that the basis for your affected source's low-risk determination has not changed. Your certification must consider process changes that increase HAP emissions, population shifts, and changes to dose-response values. If your affected source commences operating outside of the low-risk subcategory, it is no longer part of the low-risk subcategory. You must notify the permitting authority as soon as you know, or could have reasonably known, that your affected source is or will be operating outside of the low-risk subcategory. You must be in compliance with all of the applicable requirements of 40 CFR part 63, subpart DDDD beginning on the date when your affected source commences operating outside the low-risk subcategory if you had a process change that increases HAP emissions. If you are operating outside of the low-risk subcategory due to a population shift or change to dose-response values, then you must comply with all of the applicable requirements of 40 CFR part 63, subpart DDDD no later than three years from the date your affected source commences operating outside the low-risk subcategory.

III. Summary of Environmental, Energy, and Economic Impacts

A. How Many Facilities Are Impacted by the Final Rule?

Facilities with estimated potential to emit 25 tons or more of total HAP or 10 or more tons of an individual HAP are major sources of HAP and are subject to the final rule. Approximately 223 PCWP major source facilities nationwide are expected to meet the applicability criteria defined in today's final rule. These major source facilities generally manufacture one or more of the following products: Softwood plywood, softwood veneer, medium density fiberboard (MDF), oriented strandboard (OSB), particleboard, hardboard, laminated strand lumber, and laminated veneer lumber. However, only 212 of these facilities have equipment that is subject to the control requirements of the final rule. In addition, there are approximately 34 major source sawmill facilities that produce kiln-dried lumber; although these major source sawmill facilities meet the applicability criteria in the final rule, there are no control requirements for any of the equipment located at the sawmills.

The number of impacted facilities was determined based on the estimated potential to emit (*i.e.*, uncontrolled HAP emissions) from each facility, whether each facility has any process units subject to the compliance options, whether or not the facility already operates control systems necessary to meet the final rule, and whether or not the affected source is currently eligible (or may later demonstrate eligibility) for inclusion in the delisted low risk subcategory. Of the 223 major source facilities, an estimated 162 are expected to install add-on control systems to reduce emissions. The remaining facilities already have installed add-on controls, do not have any process units subject to the compliance options, are expected to comply with work practice requirements only, or are one of the eight facilities currently eligible for inclusion in the delisted low-risk subcategory. We estimate that eventually as many as 147 of the 223 major source PCWP facilities may demonstrate eligibility for the low-risk subcategory, leaving 58 facilities expected to install add-on control systems to reduce emissions. Some of the 147 facilities expected to eventually

be included the low-risk subcategory were not expected to install controls to meet MACT because they either already have the necessary controls or do not have process units subject to the compliance options in today's final rule.

The environmental and cost impacts presented in this preamble represent the estimated impacts for the range of facilities, from 58 facilities estimated to be impacted following completion of eligibility demonstrations for the low-risk subcategory, to 162 facilities estimated to be impacted today. The impact estimates were based on the use of RTO (or in some cases a combination WESP and RTO) because RTO are the most prevalent HAP emissions control technology used in the PCWP industry. However, technologies other than RTO could be used to comply with today's final rule. For a facility that we feel already achieves the emissions reductions required by today's final rule, only testing, monitoring, reporting and recordkeeping cost impacts were estimated.

B. What Are the Air Quality Impacts?

We estimate nationwide baseline HAP emissions from the PCWP source category to be 17,000 Mg/yr (19,000 tons/yr) at the current level of control. We estimate that today's final rule will reduce total HAP emissions from the PCWP source category by about 9,900 Mg/yr (11,000 tons/yr). In addition, we estimate that today's final rule will reduce VOC emissions (approximated as THC) by about 25,000 Mg/yr (27,000 tons/yr) from a baseline level of 45,000 Mg/yr (50,000 tons/yr). Depending on the number of facilities eventually demonstrating eligibility for the low-risk subcategory, these emission reductions could change to 5,900 Mg/yr (6,600 tons/yr) for HAP or 13,000 Mg/yr (14,000 tons/yr) for VOC.

In addition to reducing emissions of HAP and VOC, today's final rule will also reduce emissions of criteria pollutants, such as carbon monoxide (CO) from direct-fired emission sources and particulate matter less than 10 microns in diameter (PM_{10}). We estimate that today's final rule will reduce CO emissions by about 9,500 Mg/yr (10,000 tons/yr). We also estimate that the final rule will reduce PM_{10} emissions by about 11,000 Mg/yr (12,000 tons/yr). Depending on the number of facilities eventually demonstrating eligibility for the low-risk subcategory, these emission reductions could change to 7,600 Mg/yr (8,400 tons/yr) for CO and 5,300 Mg/yr (5,900 tons/yr) for PM_{10}.

Combustion of exhaust gases in an RTO generates some emissions of nitrogen oxides (NO_X). We estimate that the nationwide increase in NO_X emissions due to the use of RTO will be about 2,100 Mg/yr (2,400 tons/yr). This estimated increase in NO_X emissions may be an overestimate because some plants may select control technologies other than RTO to comply with today's final rule. Depending on the number of facilities eventually demonstrating eligibility for the low-risk subcategory, the estimated NO_X emission increase could fall to 1,100 Mg/yr (1,200 tons/yr).

Secondary air impacts of today's final rule could result from increased electricity usage associated with operation of control devices. The secondary air emissions of NO_X, CO, PM_{10}, sulfur dioxide (SO2) depend on the fuel used to generate electricity and on other factors. The EPA believes SO2 emissions may not increase from electric generation since that the requirements of the Acid Rain trading program will keep power plants from increasing their SO2 emissions. Furthermore, we believe that NO_X emissions increases from power plants may be limited. The EPA expects the emissions trading program that is part of the NO_X SIP call will likely keep NO_X emissions in the eastern United States from increasing as result of additional power generation to operate RTOs.

C. What Are the Water Quality Impacts?

Wastewater is produced from WESP blowdown, washing out of RTO, and biofilters. We based all of our impact estimates on the use of RTO (with or without a WESP upstream depending on the process unit). We estimate that the wastewater generated from WESP blowdown and RTO washouts will increase by about 100,000 cubic meters per year (m^3/yr) (27 million gallons per year (gal/yr)) as a result of today's final rule. Depending on the number of facilities eventually demonstrating eligibility for the low-risk subcategory, the wastewater impacts could fall to 90,000 cubic meters per year (m^3/yr) (24 million gallons per year (gal/yr)). According to the data in our MACT survey, this nationwide increase in wastewater flow is within the range of water flow rates handled by individual facilities. Facilities would likely dispose of this wastewater by sending it to a municipal treatment facility, reusing it onsite (*e.g.*, in log vats or resin mix), or hauling it offsite for spray irrigation. In addition, we are amending the effluent limitations, guidelines for the timber products processing point source category to allow facilities (on a case-by-case basis) to obtain a permit to discharge wastewaters from APCD installed to comply with today's final rule.

D. What Are the Solid Waste Impacts?

Solid waste is produced in the form of solids from WESP and by RTO or RCO media replacement. We estimate that 4,500 Mg/yr (4,900 tons/yr) of solid waste will be generated as a result of today's final rule. Depending on the number of facilities eventually demonstrating eligibility for the low-risk subcategory, the solid waste increase could change to 2,800 Mg/yr (3,000 tons/yr). Some PCWP facilities have been able to use RTO or RCO media as aggregate in onsite roadbeds. Some facilities have also been able to identify a beneficial reuse for wet control device solids (such as giving them away to local farmers for soil amendment).

E. What Are the Energy Impacts?

The overall energy demand (*i.e.*, electricity and natural gas) is expected to increase by about 4.3 million gigajoules per year (GJ/yr) (4.1 trillion British thermal units per year (Btu/yr)) nationwide under today's final rule. The estimated increase in the energy demand is based on the electricity requirements associated with RTO and WESP and the fuel requirements associated with RTO. Electricity requirements are expected to increase by about 711 gigawatt hours per year (GWh/yr) under today's final rule. Natural gas requirements are expected to increase by about of 44 million m^3/yr (1.6 billion cubic feet per year (ft^3/yr)) under the final rule. Depending on the number of facilities eventually demonstrating eligibility for the low-risk subcategory, these energy estimates could fall to 2.3 million GJ/yr (2.2 trillion Btu/yr) for overall energy demand, 378 GWh/yr for the increase in electricity requirements, and 24 million m^3/yr (0.9 billion ft^3/yr) for the increase in natural gas requirements.

F. What Are the Cost Impacts?

The cost impacts estimated for today's final rule represent a high-end estimate of costs. Although the use of RTO technology to reduce HAP emissions represents the most expensive compliance option, we based our nationwide cost estimates on the use of RTO technology at all of the impacted facilities because: (1) RTO technology can be used to reduce emissions from all types of PCWP process units; and (2) we could not accurately predict which facilities would use emissions averaging or PBCO or install add-on control devices that are less costly to operate, such as RCO and biofilters. Therefore, our cost estimates are likely to be

overstated as we anticipate that owners and operators of impacted sources will take advantage of available cost saving opportunities.

The high-end estimated total capital costs of today's final rule are $471 million. Depending on the number of facilities eventually demonstrating eligibility for the low-risk subcategory, the capital costs could fall to $240 million. These capital costs apply to existing sources and include the costs to purchase and install both the RTO equipment (and in some cases, a WESP upstream of the RTO) and the monitoring equipment, and the costs of performance tests. Wood products enclosure costs are also included for reconstituted wood products presses.

The high-end estimated annualized costs of the final standards are $140 million. Depending on the number of facilities eventually demonstrating eligibility for the low-risk subcategory, the annualized costs could fall to $74 million. The annualized costs account for the annualized capital costs of the control and monitoring equipment, operation and maintenance expenses, and recordkeeping and reporting costs. Potential control device cost savings and increased recordkeeping and reporting costs associated with the emissions averaging provisions in today's final rule are not accounted for in either the capital or annualized cost estimates.

G. What Are the Economic Impacts?

The economic impact analysis shows that the expected price increases for affected output would range from 0.4 to 1.3 percent as a result of the NESHAP for PCWP manufacturers. The expected change in production of affected output is a reduction of 0.06 to 0.4 percent for PCWP manufacturers as a result of today's final rule. No plant closures are expected out of the 223 facilities affected by the final rule. Therefore, it is likely that there is no adverse impact expected to occur for those industries that produce output affected by the final rule, such as hardboard, softwood plywood and veneer, engineered wood products, and other wood composites.

H. What Are the Social Costs and Benefits?

Our assessment of costs and benefits of today's final rule is detailed in the ''Regulatory Impact Analysis for the Proposed Plywood and Composite Wood Products MACT.'' The Regulatory Impact Analysis (RIA) is located in Docket number A–98–44 and Docket number OAR–2003–0048.

It is estimated that 3 years after implementation of the final rule requirements, reductions of formaldehyde, acetaldehyde, acrolein, methanol, phenol and several other HAP from existing PCWP emission sources would be 5,900 Mg/yr (6,600 tons/yr) to 9,900 Mg/yr (11,000 tons/yr), depending on how many affected sources are in the low-risk subcategory. The health effects associated with these HAP are discussed earlier in this preamble.

At this time, we are unable to provide a comprehensive quantification and monetization of the HAP-related benefits of the final rule. Nevertheless, it is possible to derive rough estimates for one of the more important benefit categories, *i.e.,* the potential number of cancer cases avoided and cancer risk reduced as a result of the imposition of the MACT level of control on this source category. Our analysis suggests that imposition of the MACT level of control would reduce cancer cases by less than one case per year, on average, starting some years after implementation of the standards. We present these results in the RIA. This risk reduction estimate is uncertain and should be regarded as an extremely rough estimate and should be viewed in the context of the full spectrum of unquantified noncancer effects associated with the HAP reductions.

The control technologies used to reduce the level of HAP emitted from PCWP sources are also expected to reduce emissions of CO, PM_{10}, and VOC. Depending on how many affected sources are in the low-risk subcategory, it is estimated that CO emissions reductions total approximately 7,600 Mg/yr (8,400 tons/yr) to 9,500 Mg/yr (10,000 tons/yr), PM_{10} emissions reductions total approximately 5,300 Mg/yr (5,900 tons/yr) to 11,000 Mg/yr (12,000 tons/yr), and VOC emissions reductions (approximated as THC) total approximately 13,000 Mg/yr (14,000 tons/yr) to 25,000 Mg/yr (27,000 tons/yr). These estimated reductions occur from existing sources in operation 3 years after the implementation of the requirements of the final rule and are expected to continue throughout the life of the sources. Human health effects associated with exposure to CO include cardiovascular system and CNS effects, which are directly related to reduced oxygen content of blood and which can result in modification of visual perception, hearing, motor and sensorimotor performance, vigilance, and cognitive ability. The VOC emissions reductions may lead to some reduction in ozone concentrations in areas in which the affected sources are located. There are both human health and welfare effects that result from exposure to ozone, and these effects are listed in Table 3 of this preamble.

TABLE 3.—UNQUANTIFIED BENEFIT CATEGORIES FROM HAP, OZONE-RELATED, AND PM EMISSIONS REDUCTIONS

	Unquantified effects categories associated with HAP	Unquantified effect categories associated with ozone	Unquantified effect categories associated with PM
Health Categories ...	Carcinogenicity Genotoxicity Pulmonary function decrement Dermal irritation Eye irritation Neurotoxicity Immunotoxicity Pulmonary function decrement Liver effects Gastrointestinal effects Kidney effects Cardiovascular impairment Hematopoietic (Blood disorders) Reproductive/Developmental effects	Airway responsiveness Pulmonary inflammation Increased susceptibility to respiratory infection Acute inflammation and respiratory cell damage Chronic respiratory damage/Premature aging of lungs Emergency room visits for asthma Hospital admissions for respiratory diseases Asthma attacks Minor restricted activity days	Premature mortality Chronic bronchitis Hospital admissions for chronic obstructive pulmonary disease, pneumonia, cardiovascular diseases, and asthma Changes in pulmonary function Morphological changes Altered host defense mechanisms Cancer Other chronic respiratory disease Emergency room visits for asthma Lower and upper respiratory symptoms Acute bronchitis Shortness of breath Minor restricted activity days Asthma attacks Work loss days.

TABLE 3.—UNQUANTIFIED BENEFIT CATEGORIES FROM HAP, OZONE-RELATED, AND PM EMISSIONS REDUCTIONS—Continued

	Unquantified effects categories associated with HAP	Unquantified effect categories associated with ozone	Unquantified effect categories associated with PM
Welfare Categories	Corrosion/Deterioration Unpleasant odors Transportation safety concerns Yield reductions/Foliar injury Biomass decrease Species richness decline Species diversity decline Community size decrease Organism lifespan decrease Trophic web shortening	Ecosystem and vegetation effects in Class I areas (*e.g.,* national parks) Damage to urban ornamentals (*e.g.,* grass, flowers, shrubs, and trees in urban areas) Commercial field crops Fruit and vegetable crops Reduced yields of tree seedlings, commercial and non-commercial forests Damage to ecosystems Materials damage Reduced worker productivity	Materials damage Damage to ecosystems (*e.g.,* acid sulfate deposition) Nitrates in drinking water.

At the present time, we cannot provide a monetary estimate for the benefits associated with the reductions in CO. We also did not provide a monetary estimate for the benefits associated with the changes in ozone concentrations that result from the VOC emissions reductions since we are unable to do the necessary air quality modeling to estimate the ozone concentration changes. For PM_{10}, we did not provide a monetary estimate for the benefits associated with the reduction of the emissions, although these reductions are likely to have significant health benefits to populations living in the vicinity of affected sources.

There may be increases in NO_X emissions associated with today's final rule as a result of increased use of incineration-based controls. These NO_X emission increases by themselves could cause some increase in ozone and particulate matter (PM) concentrations, which could lead to impacts on human health and welfare as listed in Table 3 of this preamble. The potential impacts associated with increases in ambient PM and ozone due to these emission increases are discussed in the RIA. In addition to potential NO_X increases at affected sources, today's final rule may also result in additional electricity use at affected sources due to application of controls. As such, the final rule may result in additional health impacts from increased ambient PM and ozone from these increased utility emissions. We did not quantify or monetize these health impacts.

Every benefit-cost analysis examining the potential effects of a change in environmental protection requirements is limited to some extent by data gaps, limitations in model capabilities (such as geographic coverage), and uncertainties in the underlying scientific and economic studies used to configure the benefit and cost models. Deficiencies in the scientific literature often result in the inability to estimate changes in health and environmental effects. Deficiencies in the economics literature often result in the inability to assign economic values even to those health and environmental outcomes which can be quantified. These general uncertainties in the underlying scientific and economics literatures are discussed in detail in the RIA and its supporting documents and references.

In determining the overall economic consequences of the final rule, it is essential to consider not only the costs and benefits expressed in dollar terms but also those benefits and costs that we could not quantify. A full listing of the benefit categories that could not be quantified or monetized in our analysis is provided in Table 3 of this preamble.

IV. Summary of Responses To Major Comments and Changes to the Plywood and Composite Wood Products NESHAP

We proposed the PCWP NESHAP on January 9, 2003 (68 FR 1276), and received 57 comment letters on the proposal during the comment period. In response to the public comments received on the proposed rule, we made several changes in developing today's final rule. Table 4 of this preamble provides a list of the major changes that we made to the final rule. The major comments and our responses are summarized in the following sections. A complete summary of the comments received during the comment period and responses thereto can be found in the background information document (BID) for the promulgated rule, which is available from several sources (see **SUPPLEMENTARY INFORMATION** section).

TABLE 4.—SUMMARY OF MAJOR CHANGES TO SUBPART DDDD OF PART 63

Proposed section	Final section	Change from proposal
§ 63.2231	§ 63.2231	Revised section to state that subpart DDDD does not apply to facilities that are part of the low-risk subcategory of PCWP manufacturing facilities.
§ 63.2232(b)	§ 63.2232(b)	Description of affected source revised to be consistent with revised definition.
§ 63.2240	§ 63.2240	Clarified application of compliance options to a single process unit.
§ 63.2240(a)	§ 63.2240(a)	Added wet control device to the list of devices that may not be used to meet the PBCO.
§ 63.2240(b)	§ 63.2240(b)	Changed press enclosure reference from "PTE" to "wood products enclosure."

TABLE 4.—SUMMARY OF MAJOR CHANGES TO SUBPART DDDD OF PART 63—Continued

Proposed section	Final section	Change from proposal
§ 63.2240(c)(1)	§ 63.2240(c)(1)	Revised definition of AMR and $OCEP_i$ in emissions averaging calculations to clarify that sources can receive partial credits from debit-generating process units that are undercontrolled; revised definition of CD_i to address test method for biological treatment units that do not meet the definition of biofilter.
§ 63.2240(c)(2)(iii)	§ 63.2240(c)(2)(iii)	Revised restriction on emissions average related to process units that are already controlled.
	§ 63.2241(c)	Added new section that exempts dry rotary dryers, hardwood veneer dryers, and veneer redryers from work practice requirements if they comply with more stringent standards in § 63.2240.
§ 63.2250(a)	§ 63.2250(a)	Revised section to clarify that SSM refers to both process unit and control device SSM.
§ 63.2250(d)	§ 63.2250(a)	Moved and revised section to consolidate explanation of SSM provisions.
	§ 63.2250(d)	Added specific example of a shutdown for direct-fired burners and a specific example of a startup for direct-fired softwood veneer dryers.
§ 63.2250(e)		Removed requirement to record control device maintenance schedule.
§ 63.2250(f)		Removed requirement to maintain and operate catalyst according to manufacturer's specifications.
§ 63.2251(a)	§ 63.2251(a)	Added partial list of events eligible for a routine control device exemption; clarified duty to minimize emissions.
§ 63.2251(b)(1)	§ 63.2251(b)(1)	Specified type of strand dryer controlled by a control device eligible for a routine control device maintenance exemption of 3 percent of annual uptime.
§ 63.2251(b)(2)	§ 63.2251(b)(2)	Added conveyor strand dryer to list of process units controlled by a control device eligible for a routine control device maintenance exemption of 0.5 percent of annual uptime.
§ 63.2251(e)	§ 63.2251(e)	Removed requirement to schedule control device maintenance at the beginning of each semi-annual period.
§ 63.2260(a)	§ 63.2260(a)	Expanded exemption from testing and monitoring requirements to all combustion units that introduce process unit exhaust into the flame zone.
§ 63.2262(d)	§ 63.2262(d)(1)	Added sampling location requirements for control devices in sequence, process units with no control device, and process units with a wet control device.
	§ 63.2262(d)(2)	
§ 63.2262(g)	§ 63.2262(g)(1)	Reworded and renumbered section to allow for one case in which non-detect data is not considered to be one-half the method detection limit.
	§ 63.2262(g)(2)	Added exception to requirement to treat non-detect data as one-half the detection limit.
§ 63.2262(k)(1)	§ 63.2262(k)(1)	Clarified requirements for establishing the minimum firebox temperature for thermal oxidizers.
§ 63.2262(k)(2)		Removed sections on establishing operating parameter limits for static pressure and stack gas flow for thermal oxidizers.
§ 63.2262(k)(3)		
§ 63.2262(k)(4)	§ 63.2262(k)(2)	Removed references to static pressure and gas flow rate operating parameters.
§ 63.2262(k)(5)	§ 63.2262(k)(3)	Revised eligibility criteria for exemptions from performance testing and operating requirements for thermal oxidizers.
§ 63.2262(l)(1)	§ 63.2262(l)(1)	Clarified requirements for establishing the minimum catalytic oxidizer temperature.
§ 63.2262(l)(2)		Removed sections on establishing operating parameter limits for static pressure and stack gas flow for catalytic oxidizers.
§ 63.2262(l)(3)		
§ 63.2262(l)(4)	§ 63.2262(l)(2)	Removed references to static pressure and gas flow rate operating parameters.
§ 63.2262(m)(1)	§ 63.2262(m)(1)	Revised requirements for establishing biofilter operating limits (temperature range).
§ 63.2262(m)(2)	§ 63.2262(m)(2)	
§ 63.2262(n)(1)	§ 63.2262(n)(1)	Revised monitoring requirements for process units that meet compliance options without the use of an add-on control device.
§ 63.2267	§ 63.2267	Added initial compliance criteria for a wood products enclosure.
	§ 63.2268	Added criteria for demonstration of initial compliance for a wet control device.
§ 63.2268(a)(1)	§ 63.2269(a)(1)	Revised continuous parameter monitoring system requirements.
§ 63.2268(a)(3)	§ 63.2270(d)	Revised and moved sections regarding determination of block averages and valid data to section on continuous compliance requirements.
§ 63.2268(a)(4)	§ 63.2270(e)	
§ 63.2268(b)(2)	§ 63.2269(b)(2)	Clarified temperature measurement requirements.
§ 63.2268(b)(3)	§ 63.2268(b)(3)	
§ 63.2268(c)		Removed sections regarding pH, pressure, and flow monitoring.
§ 63.2268(d)		
§ 63.2268(e)		

TABLE 4.—SUMMARY OF MAJOR CHANGES TO SUBPART DDDD OF PART 63—Continued

Proposed section	Final section	Change from proposal
§ 63.2268(f)(1)	§ 63.2269(c)(1)	Revised requirements for wood moisture monitoring.
§ 63.2268(f)(2)	§ 63.2269(c)(2)	
	§ 63.2269(c)(5)	Added equation for converting moisture measurements from wet basis to dry basis.
§ 63.2270(c)	§ 63.2270(c)	Added language to specify that data recorded during periods of SSM may not be used in data averages and calculations used to report emission or operating levels.
	§ 63.2270(f)	Added requirement that 75 percent of readings recorded and included in block averages must be based on valid data.
§ 63.2280(f)(6)	§ 63.2280(f)(6)	Revised EAP submission requirements to include information on debit-generating process units.
	§ 63.2282(e)	Added requirement to keep records of annual catalyst activity checks and subsequent corrective actions for catalytic oxidizers.
§ 63.2291	§ 63.2291	Revised section to state that EPA retains authority to review eligibility demonstrations for the low-risk subcategory.
	§ 63.2292	Added definitions of ''agricultural fiber,'' ''combustion unit,'' ''conveyor strand dryer,'' ''conveyor strand dryer zone,'' ''flame zone,'' ''group 1 miscellaneous coating operations,'' ''non-HAP coating,'' ''one-hour period,'' ''partial wood products enclosure,'' ''primary tube dryer,'' ''rotary strand dryer,'' ''secondary tube dryer,'' ''wet control device,'' and ''wood products enclosure.''
§ 63.2292		Removed definitions of ''permanent total enclosure,'' ''plant site,'' and ''strand dryer.''
§ 63.2292	§ 63.2292	Revised definitions of ''affected source,'' ''biofilter,'' ''deviation,'' ''fiber,'' ''fiberboard,'' ''hardboard,'' ''medium density fiberboard,'' ''miscellaneous coating operations,'' ''particle,'' ''particleboard,'' ''plywood and composite wood products (PCWP) manufacturing facility,'' ''softwood veneer dryer,'' and ''thermal oxidizer.''
Table 1A	Table 1A	Changed ''tube dryers'' to ''primary tube dryers'' and added ''secondary tube dryers''; added PBCO limit for secondary tube dryers; revised PBCO limit for reconstituted wood product board coolers; changed ''strand dryers'' to ''rotary strand dryers.''
Table 1B	Table 1B	Added ''rotary strand dryers,'' ''conveyor strand dryer zone one (at existing affected sources),'' and ''conveyor strand dryer zones one and two (at new affected sources)'' to the list of process units.
Table 2, Line 1	Table 2, Line 1	Reduced thermal oxidizer operating requirements to maintaining the average firebox temperature above the minimum temperature.
Table 2, Line 2	Table 2, Line 2	Reduced catalytic oxidizer operating requirements to maintaining the temperature above a minimum temperature and checking the activity level of a representative sample of the catalyst every 12 months.
Table 2, Line 3	Table 2, Line 3	Reduced biofilter operating requirements to maintaining the biofilter bed temperature within a range.
Table 2, Line 5	Table 2, Line 5	Revised operating requirements for process units without control devices.
	Table 3, Line 5	Added work practice requirements for group 1 miscellaneous coating operations.
Table 4, Line 9	Table 4, Line 9	Revised the performance test criteria for reconstituted wood product presses and reconstituted wood product board coolers.
Table 4, Line 11	Table 4, Line 11	Revised text to clarify that performance test requirements apply to all process units in an emissions average plan.
Table 5, Line 7	Table 5, Line 7	Removed minimum heat input capacity criterion for combustion units.
	Table 5, Line 8	Added criteria for performance testing and initial compliance demonstrations for wet control devices.
	Table 6, Line 5	Added initial compliance demonstration for Group 1 miscellaneous coating operations.
Table 7, Line 1	Table 7, Line 1	Revised ''at or above the maximum, at or below the minimum'' to read ''at or above the minimum, at or below the maximum.''
	Table 7, Line 3	Added continuous compliance requirements (periodic testing) for biofilters.
	Table 7, Line 4	Added continuous compliance requirements (annual catalyst activity check) for catalytic oxidizers.
	Table 7, Line 5	Added continuous compliance requirements for process units achieving compliance without an add-on control device.
Table 8, Line 1	Table 8, Line 1	Specified block averages of 24 hours for moisture and temperature measurements for dry rotary dryers.
Table 8, Line 4	Table 8, Line 4	Specified block average of 24 hours for moisture measurements for veneer dryers.
	Table 8, Line 5	Added continuous compliance requirements for Group 1 miscellaneous coating operations.
Table 10, § 63.8(g)	Table 10, § 63.8(g)	Added ''rounding of data'' to description of the General Provisions section.

TABLE 4.—SUMMARY OF MAJOR CHANGES TO SUBPART DDDD OF PART 63—Continued

Proposed section	Final section	Change from proposal
Appendix A to Subpart DDDD	Appendix A to Subpart DDDD	Made various revisions throughout to reflect the removal of a permanent total enclosure (PTE) as a requirement for reconstituted wood products presses and board coolers.
	Appendix B to Subpart DDDD	Added appendix B to specify procedure for demonstrating that an affected source is part of the low-risk subcategory.

A. Applicability

1. Definition of Affected Source

Comment: Several commenters requested that we clarify that the PCWP affected source includes refining and resin preparation activities such as mixing, formulating, blending, and chemical storage, and suggested that boilers be excluded. The commenters wanted to ensure that onsite resin preparation activities are specifically mentioned in and regulated by the final PCWP rule to avoid duplicate regulation of those activities under the Miscellaneous Organic Chemical Manufacturing NESHAP (subpart FFFF) or the Miscellaneous Coating Manufacturing NESHAP (subpart HHHHH). Commenters also recommended changing the proposed definition of affected source by revising the definition of ''plant site,'' which was used in the affected source definition at proposal. The commenters asked that we make the definition of ''plant site'' consistent with the definition of ''major source'' as defined for title V permitting in 40 CFR 70.2. According to the commenters, the proposed definition of ''plant site'' expanded the definition of a source beyond that used for title V permitting or MACT applicability in general.

Response: We agree with the commenters that changes should be made to the definition of affected source, and the definition was adjusted in the final rule. We added resin preparation activities to the definition of ''affected source'' to clarify that these activities are part of the PCWP source category and are not subject to subpart FFFF to 40 CFR part 63 or subpart HHHHH to 40 CFR part 63. Resin preparation includes any mixing, blending, or diluting of resins used in the manufacture of PCWP products which occurs at the PCWP manufacturing facility. We feel this change is appropriate because the MACT analysis for resin preparation activities was conducted under the PCWP final rulemaking. (As explained in the proposal BID and supporting documentation, we determined that MACT for new and existing blenders and resin storage/mixing tanks is no emissions reductions.) Subpart FFFF to 40 CFR part 63 and subpart HHHHH to 40 CFR part 63 exclude activities included as part of the affected source for other source categories. Thus, onsite resin preparation activities at a PCWP manufacturing facility are not subject to subpart FFFF to 40 CFR part 63 or subpart HHHHH to 40 CFR part 63.

We added refiners to the definition of affected source to clarify that these sources are part of the affected source and were part of the MACT analysis for the PCWP source category. (For new and existing pressurized refiners, we determined that MACT is based on the use of incineration-based control or a biofilter, and for new and existing atmospheric refiners, we determined that MACT is no emissions reductions.)

We removed all references to ''plant site'' from the final rule and replaced references to ''plant site'' with the term ''facility'' to eliminate confusion regarding which emission sources constitute the affected source and which emission sources would be considered when making a major source determination. The term ''plant site'' was used only in the proposed definitions of ''affected source'' and ''plywood and composite wood products manufacturing facility.'' Inclusion of the term ''plant site'' in the proposed definition of affected source unintentionally broadened the definition such that emission sources not related to PCWP manufacturing could be construed as being part of the affected source. For example, under the proposed definitions of ''affected source'' and ''plant site,'' if a company operated both a PCWP manufacturing facility and a wood building products surface coating facility at the same site, both operations might be considered to be part of the PCWP affected source because the ''plant site'' would encompass both operations, even though these two operations are regulated under separate NESHAP. We removed the term ''plant site'' from the final rule to clarify that the requirements in the final rule would only apply to the affected source, which is the PCWP manufacturing facility. However, we note that any major source determination would be based on total emissions from both operations since the two operations are colocated and under common control. (See definition of major source in the General Provisions (40 CFR part 63, subpart A).)

We did not incorporate the commenters' suggestion to specifically exclude boilers from the definition of ''affected source'' because it is possible for a boiler to be subject to both the PCWP NESHAP and the Industrial/Commercial/Institutional Boilers and Process Heaters NESHAP (*e.g.*, if a portion of the boiler exhaust is used to direct fire dryers while the remaining portion of the boiler exhaust is vented to the atmosphere). However, in most cases, combustion units would only be subject to one MACT. The overlap between the PCWP NESHAP and the Industrial/Commercial/Institutional Boilers and Process Heaters NESHAP is also discussed in this preamble.

2. Process Definitions

Comment: Commenters recommended that a number of definitions included in the proposed rule be revised to better distinguish between particleboard, MDF and hardboard and/or to be consistent with definitions developed by the American National Standards Institute (ANSI).

Response: We made changes to several of the proposed process-related definitions including the definitions of particle, fiber, hardboard, MDF, and particleboard. These minor changes incorporate some of the wording in similar definitions used by ANSI but do not affect the scope or applicability of the final rule. We also added a definition of agricultural fiber recommended by commenters because the term ''agricultural fiber'' appears in the definition of plywood and composite wood products facility.

Comment: Several commenters requested that the proposed definition of tube dryer be changed so that stages in multistage tube dryers would be considered as separate tube dryers. With this change, different control options could be applied to different dryer stages.

Response: Under the proposed definition of tube dryer, a multistage tube dryer with more than one control

device and emissions point would be considered one process unit. In developing the proposed rule, we noted that the function of tube dryers is the same regardless of single-or multistage configuration and that distinguishing between dryer configurations would not change the results of the MACT floor analysis, despite the fact that the majority of the HAP emissions exhaust from the primary stage. Therefore, we made no distinction between single-stage and multistage tube dryers at proposal. However, we agree with the commenters that defining the stages of multistage tube dryers separately would allow facilities the flexibility of choosing different compliance options for each stage of the tube dryer, and we have included separate definitions of primary tube dryer and secondary tube dryer in the final rule. The MACT floor for both primary tube dryers and secondary tube dryers is the same (*e.g.*, 90 percent reduction in emissions), but facilities may choose different control options for the primary and secondary tube dryers. For example, a facility with a multistage tube dryer could use an add-on control device to reduce emissions from the primary tube dryer only and then use emissions averaging to offset the uncontrolled emissions from the secondary tube dryer.

3. Lumber Kilns

Comment: We received comments from representatives of sawmills and wood treating facilities disagreeing with the inclusion of lumber kilns in the PCWP source category. The commenters stated that owners and operators of kilns that are not located at a PCWP facility may be subject to other requirements of the rule, as proposed, that do not truly apply to them, including costly monitoring, recordkeeping, and reporting. One commenter was concerned that the owners and operators of non-colocated lumber kilns could find themselves in violation of the May 15, 2002, case-by-case ''MACT Hammer'' deadline even though they did not anticipate being included in the rule, as proposed, and thus did not apply for the case-by-case consideration.

Response: At proposal, we broadened the PCWP source category to include non-colocated lumber kilns (*i.e.*, lumber kilns located at stand-alone kiln-dried lumber manufacturing facilities or at any other type of facility). In the preamble to the proposed rule, we noted that if non-colocated lumber kilns were not included in the PCWP NESHAP, then kiln-dried lumber manufacturing could be listed as a major source category under section 112(c) of the CAA in the future, requiring a separate CAA section 112(d) rulemaking and potentially becoming separately subject to the provisions of section 112(g) of the CAA as well. We felt it was reasonable to include non-colocated lumber kilns in the PCWP source category because the design and operation of lumber kilns are essentially the same regardless of whether the kilns are located at a sawmill or are colocated with PCWP or other types of manufacturing operations. At proposal, we noted that there are no currently applicable controls at any lumber kilns and that it would be both more efficient and expeditious to include all lumber kilns in the MACT analysis for the final PCWP rule than to separately address them in a rulemaking that likely would not result in meaningful emissions reductions from lumber kilns. In addition, we noted that including all lumber kilns in the final PCWP MACT results in placing them on a faster schedule for purposes of future residual risk analysis under CAA section 112(f).

In an attempt to better understand the concerns of the commenters, we met with wood products industry representatives who requested that lumber kilns be included in the PCWP source category and with the commenters who disagreed that non-colocated lumber kilns should be included in the PCWP source category. After consideration of concerns expressed by all of the commenters on this issue, we maintain that it is more efficient for EPA, State regulators, and lumber kiln operators for EPA to include all lumber kilns in the final PCWP NESHAP. Because the MACT floor determination for lumber kilns is no emission reduction (as explained in the proposal preamble), there will not be a significant monitoring, recordkeeping, and reporting burden for facilities with only non-colocated lumber kilns. Only those facilities that are major sources of HAP emissions are subject to the final PCWP NESHAP. Facilities with non-colocated lumber kilns that are classified as major sources of HAP must submit an initial notification form required by the final PCWP NESHAP and the Part 1 ''MACT Hammer'' application required by section 112(j) of the CAA. We note that both of these forms simply ask the facilities to identify themselves to EPA. We acknowledge that operators of non-colocated lumber kilns were not aware that they were included in the PCWP source category until the proposed PCWP NESHAP was printed in the **Federal Register** on January 9, 2003, and therefore, would not have known to submit a Part 1 application by May 15, 2002.

4. Regulated HAP

Comment: One commenter objected to the fact that the proposed rule only set standards for six HAP. The commenter asserted that, according to the CAA and *National Lime Ass'n* v. *EPA,* 233 F.3d 625, 633–634 (D.C. Cir. 2000), we are required to set standards for every HAP listed in CAA section 112(b)(1) emitted by PCWP operations, not just the ones that are the easiest to measure. Other commenters disagreed and noted that a requirement that EPA impose an emission standard for every listed HAP, without regard to whether or not there are applicable methods for reducing HAP emissions or whether the MACT floor sources actually use such method, contradicts the plain language of the statute. These commenters contended that the statute specifically frames the inquiry in terms of degrees of reduction.

Response: Today's final PCWP rule contains numerical emission limits in terms of methanol, formaldehyde, THC, or total HAP (which is defined in the final rule as the sum of six HAP including acrolein, acetaldehyde, formaldehyde, methanol, phenol, and propionaldehyde). The nationwide PCWP emissions of total HAP are 18,190 tons/yr, which is 96 percent of the nationwide emissions of all HAP (19,000 tons/yr) emitted by PCWP facilities. The six HAP that comprise total HAP are found in emissions from all PCWP product sectors that contain major sources and in emissions from most process units. At proposal, when we stated that other HAP are emitted ''in low quantities that may be difficult to measure,'' we were referring to HAP that are often emitted at levels below test method detection limits (68 FR 1276, January 9, 2003). Our data clearly show that these other HAP are difficult or impossible to measure because they are either emitted in very low quantities or are not present. Such low quantities are not detectable by the applicable emission testing procedures (which are sensitive enough to detect HAP at concentrations below 1 part per million (ppm)). Many of these other HAP were detected in less than 15 percent of test runs, or for only one type of process unit.

Based on our emissions data, we determined that methanol, formaldehyde, THC, or total HAP are appropriate surrogates for measuring all organic HAP measurably-emitted by the PCWP source category. The PBCO and emissions averaging compliance options in today's final PCWP rule are based on total HAP. Review of the emission

factors used to develop the emissions estimates for the PCWP source category indicates that uncontrolled emissions of HAP (other than the six HAP) are always lower than emissions of the six HAP for every process unit with MACT control requirements. Thus, process units meeting the PBCO based on total HAP also would have low emissions of other organic HAP. The emissions averaging provisions and add-on control device compliance options involve use of add-on APCD. The available data show that a reduction in one predominant HAP (or THC) correlates with a reduction in other HAP if the other HAP is present in detectable quantities and at sufficient concentration. The data also show that the mechanisms in RTO, RCO, and biofilters that reduce emissions of formaldehyde and methanol reduce emissions of the remaining HAP. In addition, an analysis of the physical properties of the organic HAP emitted from PCWP processes indicates that nearly all of the HAP would be combusted at normal thermal oxidizer operating temperatures. Today's standards are based on the use of add-on control devices because the available emissions data do not reveal any process variables that could be manipulated (without altering the product) to achieve a quantifiable reduction in emissions. Furthermore, nothing in the data suggests that process variables could be manipulated in a way that would alter the relationship between formaldehyde and methanol reduction and reduction of other HAP. We determined that it is appropriate for the final PCWP rule to contain compliance options in terms of total HAP, THC, formaldehyde, or methanol because the same measures used to reduce emissions of these pollutants also reduce emissions of other organic HAP.

B. Overlap With Other Rules

1. Overlap With Industrial/Commercial/Institutional Boilers and Process Heaters NESHAP

Comment: Commenters expressed support for our proposal to regulate emissions from combustion units used to direct fire dryers and to exclude these emissions from the requirements of the Industrial/Commercial/Institutional Boilers and Process Heaters NESHAP. However, the commenters expressed concern about potential NESHAP applicability questions that could arise during short periods when the exhaust gases from these combustion units are not exhausting through the dryers and would bypass any controls applied to these dryers. The commenters noted that in some of the combustion units associated with direct-fired dryers, a small percentage of combustion gas is routed to indirect heat exchange and then is normally and predominantly routed to direct-fired gas flow. According to the commenters, in these hybrid units, typically only a small fraction of combustion gas (*e.g.*, less than 10 percent of total capacity) is routed to indirect heat exchange for hot oil/steam generation. This fraction of the combustion unit exhaust then generally exhausts through the direct-fired dryers and the emissions are treated by the add-on control device at the dryers' outlet. However, under certain circumstances (*e.g.*, during startups, shutdowns, emergencies, or periods when dryers are down for maintenance but steam/thermal oil is still needed for plant and/or press heat), some systems may exhaust directly to the atmosphere without passing through the direct-fired dryers and the associated control systems. The commenters recommended that this small subset of combustion units be assigned a primary purpose (based on the predominant allocation of British thermal units per hour (Btu/hr) capacity and/or predominant mode of operation) and regulated accordingly. In the above example, the commenters assumed that the primary purpose is as a direct-fired dryer, such that the equipment would be subject to the final PCWP MACT and not to the Industrial/Commercial/Institutional Boilers and Process Heaters NESHAP.

Response: In considering the commenters' request, we reviewed available information on direct-fired dryers and the associated combustion units at PCWP facilities. The available information indicates that there are many configurations of combustion units, dryers, and thermal oil heaters in the PCWP industry. While some systems have the hybrid configurations described by the commenters whereby a portion of the combustion gas is routed to indirect heat exchange, other systems retain all of the combustion gas within the direct-fired system. We do not have sufficient information (and no such information was provided by the commenters) to fully evaluate the need for a primary purpose designation for PCWP combustion units, to establish the percentage-of-operating-time or British thermal unit (Btu) limits for such a primary purpose designation, or to determine MACT for combustion units that would meet the primary purpose designation. For example, we do not know how many combustion units are configured to incorporate both indirect and direct heat exchange, and for these units we do not know the amount of time or the percentage of Btu allocation that is devoted to indirect heat exchange or the controls used to reduce emissions during indirect heat exchange. We expect that all of these factors vary substantially from facility to facility for those facilities that have these hybrid combustion units. We also lack information on the emissions reduction techniques (*e.g.*, control devices) applied to combustion units associated with direct-fired PCWP dryers that may bypass the dryers for some unknown percentage of time. Therefore, we feel it would be inappropriate for us to establish a primary purpose designation which could inadvertently allow facilities to configure their systems to direct a portion of their uncontrolled emissions to the atmosphere without these emissions' being subject to the Industrial/Commercial/Institutional Boilers and Process Heaters NESHAP. Also, we wish to clarify that the final PCWP rule regulates only that portion of emissions from a combustion unit that are routed through the direct-fired dryers. Any emissions from a combustion unit that are not routinely through the direct-fired dryers would be subject to the Industrial/Commercial/Institutional Boilers and Process Heaters NESHAP. Therefore, if the emissions from a combustion unit are split such that only a portion of the emissions are routed through a direct-fired dryer, then the combustion unit would be subject to both rules.

For those occasions when a facility must shut down its direct-fired dryers but still wants to operate the combustion unit to heat oil for the press, the facility could propose in its startup, shutdown, and malfunction (SSM) plan to route exhaust through the thermal oil heater (and then to the atmosphere) during these periods. The permitting authority would then decide on a facility-specific basis if heating of the thermal oil heater (and the associated uncontrolled emissions) should be allowed during dryer SSM considering the amount of time that this condition occurs, the fraction of combustion unit Btu used to heat the thermal oil heater, and the type of control used to reduce combustion unit emissions.

2. Overlap With Wood Building Products (WBP) NESHAP

Comment: Commenters on the proposed Wood Building Products (Surface Coating) rule (subpart QQQQ to 40 CFR part 63) asserted that neither asphalt-coated fiberboard nor ceiling tiles are coated with HAP-containing

materials and that regulating such products would be burdensome. These commenters requested that we include asphalt coating of fiberboard and ceiling tiles in today's final PCWP rule by including these coating operations under the definition of miscellaneous coating operations (for which the proposed MACT was no emissions reductions), so that these operations would be subject to the final PCWP rule and not the WBP rule, as proposed.

Response: In the proposed rule, we addressed overlap between the WBP and PCWP NESHAP by including specific surface coating activities (which occur onsite at a PCWP manufacturing facility) in the definition of ''miscellaneous coating operations.'' Inclusion of these activities in the definition of miscellaneous coating operations means that these activities are subject to the final PCWP rule and not to the WBP rule, as proposed. We made changes to the definition of miscellaneous coating operations in today's final rule in response to the public comments we received on the proposed WBP rule relating to asphalt-coated fiberboard and ceiling tiles.

We evaluated the types of coatings and processes used to make asphalt-coated fiberboard and found that only a few facilities in the United States make these products, with varying manufacturing and coating processes. An asphalt emulsion can be added during the fiberboard forming process, or asphalt can be applied to the fiberboard substrate. Information we collected on asphalt coatings suggests that they contain no HAP. Depending on the company and the process, the coating can be applied before or after the final dryer with the product allowed to air dry. Ceiling tiles are usually coated using non-HAP slurries of titanium dioxide and various clays, and no organic solvents are used. Most of the coatings associated with these types of products are applied during the substrate forming process (*i.e.*, to the wet mat being formed) or prior to the final substrate drying operation, fiberboard coating operations (including those used in the manufacture of asphalt-coated fiberboard and ceiling tiles). Because no HAP are contained in the above-mentioned coatings, the coatings are applied as part of the manufacturing process, and MACT for these coating processes is no emissions reductions, we changed the definition of miscellaneous coating operations to include ''application of asphalt, clay slurry, or titanium dioxide coatings to fiberboard at the same site of fiberboard manufacture.'' These products are not subject to the final WBP surface coating rule.

C. Amendments to the Effluent Guidelines for Timber Products Processing

Comment: Several commenters requested that we address potential conflicts between the PCWP rule as proposed and the effluent guidelines for the Timber Products Processing Point Source Category. These commenters noted that the effluent guidelines state that ''there shall be no discharge of process wastewater pollutants into navigable waters.'' However, according to the commenters, at the time that statement was written, air pollution controls were not common, and EPA was not aware of the large volumes of water that can be produced by APCD. The commenters recommended that we address this issue by revising the effluent guidelines at 40 CFR part 429. Specifically, these commenters asked us to amend the definition of process wastewaters at 40 CFR part 429.11(c) so that the discharge prohibition in 40 CFR part 429 would not apply to wastewaters associated with APCD operation and maintenance when installed to comply with the final PCWP MACT rule. These commenters asserted that effluent limitations for these wastewaters should be developed by permit writers on a case-by-case basis based upon best professional judgment. These commenters noted that the language we included in the preamble to the proposed rule would generally accomplish this purpose with some minor changes (see 68 FR 1276, January 9, 2003). The commenters also provided rationale and data to support their recommendation. The commenters contended that we: (1) Underestimated the volume of wastewater that would be generated by the application of MACT and as a result, underestimated the associated costs of disposing of this wastewater; (2) failed to address the achievability/feasibility of MACT if the discharge of air pollution control wastewaters is prohibited; and (3) did not consider wastewater from air pollution control devices when the Timber Products zero discharge effluent guidelines were originally developed. The commenters submitted several case studies to demonstrate the variability in the volume of wastewater generated at various PCWP facilities and to show how each facility currently recycles, reuses, and disposes of wastewater generated from the operation and maintenance of RTO, WESP and biofilters. The commenters also argued that the available data do not support a conclusion that wastewaters generated from MACT control devices can, with Best Available Technology (BAT), be managed in a way that does not involve a discharge.

Response: At the time we proposed the PCWP rule, we indicated that we would consider amending the definition of process wastewater in 40 CFR part 429 to exclude those wastewaters generated by APCD operation and maintenance when installed to comply with the proposed PCWP NESHAP. We indicated in the preamble to the proposal that we would amend the definition of process wastewaters if information and data were submitted to support the industry's assertions that PCWP facilities in certain subcategories would not be able consistently to achieve the effluent limitations guidelines and standards applicable to them if they were to comply with the proposed PCWP NESHAP. As part of the PCWP proposal, we described with specificity how we would revise 40 CFR part 429 if we were convinced that such revisions were appropriate and solicited data and information.

Based on the data and information submitted by the commenters, we have concluded that facilities subject to 40 CFR part 429, subpart B (Veneer subcategory), subpart C (Plywood subcategory), subpart D (Dry Process Hardboard subcategory), and subpart M (Particleboard Manufacturing subcategory) are unable to comply consistently with the existing 40 CFR part 429 effluent limitations guidelines and standards, which prohibit the discharge of process wastewater pollutants, because of the volume of wastewaters generated by APCD that are installed to comply with the final PCWP NESHAP and because the technology basis for those effluent limitations guidelines and standards is insufficient, in light of that wastewater volume and the pollutant content, to achieve the prohibition on process wastewater discharges for these NESHAP-related APCD wastewaters. Therefore, we are excluding from the definition of process wastewaters in 40 CFR 29.11(c) the following wastewaters associated with APCD used by PCWP facilities covered by subparts B, C, D, and M to comply with 40 CFR 63.22: wastewater from washout of thermal oxidizers and catalytic oxidizers, wastewater from biofilters, and wastewater from WESP used upstream of thermal oxidizers or catalytic oxidizers.

In addition, we agree with comments that we will need considerably more data and information to promulgate new effluent limitations guidelines and standards for the process wastewaters at issue today. In particular, we will need

information to adequately characterize the quantity and quality of wastewater that would be generated as result of compliance with the MACT standards. The volume and pollutant content of wastewater generated at these facilities are related to production processes, air pollution control equipment that generate wastewater, the extent of opportunities for internal recycling of wastewater, and the availability of other process uses for wastewater. Until we promulgate effluent limitations guidelines and standards for pollutants in these process wastewaters, Best Practicable Technology (BPT) and BAT effluent limitations should be established on a case-by-case basis under 40 CFR 125.3. Thus, individual facilities seeking a discharge permit will have the opportunity, on a case-by-case basis, to characterize and obtain discharge allowances for their wastewaters from APCD installed to comply with the final PCWP NESHAP. The permit writer would be expected to determine, based upon best professional judgment (BPJ), the appropriate effluent limitations for these APCD wastewaters. (*See* 40 CFR 125.3.) The permit writer can take into account facility-specific information on wastewater volumes and pollutants, available wastewater control and treatment technologies, costs and effluent reduction benefits, receiving water quality, and any applicable State water quality standards. At a later date, we expect to consider whether to amend the existing effluent limitations guidelines and standards for the Timber Processing Industry to cover these process wastewaters. Such an effort would involve gathering and analyzing the information and data necessary to establish revised categorical effluent limitations affecting subparts B, C, D, and M of 40 CFR part 429 for these APCD wastewaters generated in complying with the final PCWP NESHAP.

Today's amendment to the final rule is based on regulatory language included in the preamble accompanying the proposed NESHAP for PCWP facilities (68 FR 1276, January 9, 2003). The preamble described the relationship of the proposed MACT rule to the amendment to 40 CFR part 429 under consideration. The preamble explained that the entities affected by the proposed MACT rule would also be affected by the proposed amendment to 40 CFR part 429; presented both the terms and substance of the amendment under consideration; and described the subjects and issues involved. In addition, we solicited comments on whether to amend 40 CFR 429.11(c) and information relevant to that decision. While at that time we indicated that we were considering employing a direct final rule to promulgate any such amendment, we have concluded with support from commenters that that procedure was unnecessary and instead are taking final action on the amendment today without further process.

D. Existing Source MACT

1. OSB Strand Dryers

Comment: One commenter requested that further consideration be given to the emission standards for low-temperature OSB conveyor strand dryers. The commenter stated that because these conveyor strand dryers emit less HAP than rotary strand dryers and have been recognized as best available control technology (BACT) in Minnesota, they should be exempted from control requirements in the final PCWP rule. The commenter noted that the 12 conveyor strand dryers used by their company have three drying zones, each with its own heating system and exhaust vent(s). When drying hardwoods, no VOC control is required; however, when drying pine the company controls emissions from zones 1 and 2. Zone 3 serves as a final conditioning zone and is exhausted to the atmosphere without need for VOC control. The proposed PCWP rule would have required the sum of the emissions from all three zones to be reduced to MACT levels (*e.g.*, 90 percent reduction).

Response: The MACT analysis we conducted at proposal treated conveyor strand dryers as a separate equipment group from rotary strand dryers. We noted that rotary strand dryers operate at much higher inlet temperatures (*e.g.*, often greater than or equal to 900°F) than conveyor strand dryers (*e.g.*, typically less than 400°F) and that rotary dryers provide greater agitation of the wood strands than conveyor strand dryers. As a result, the emissions from conveyor strand dryers are lower than the emissions from rotary strand dryers. The emissions test data we have for conveyor strand dryers (only formaldehyde and THC data are available) indicate that formaldehyde emissions from conveyor strand dryers are 1 to 2 orders of magnitude lower than for rotary strand dryers. The THC emissions are also lower for conveyor strand dryers than for rotary dryers. Our MACT analysis for conveyor strand dryers at proposal concluded that three of the eight conveyor strand dryers used in the U.S. operated with process incineration. Because there are less than 30 conveyor strand dryers, the MACT floor was based on the control level achieved by the third best-controlled dryer. Thus, at proposal, we determined that the MACT floor control system for new and existing conveyor strand dryers was the emissions reductions achievable with incineration-based control. We included one definition of ''strand dryers'' in the proposed PCWP rule since MACT for both rotary and conveyor strand dryers was represented by incineration-based control.

As pointed out by the commenter, conveyor strand dryers have distinct zones, with each zone having its own heating system and exhaust. We reviewed our MACT survey data and learned that all of the conveyor strand dryers in the U.S. have three zones. Upon further scrutiny of the MACT analysis at proposal, we learned that the three conveyor strand dryers that formed the basis for the MACT floor at proposal were routing the emissions from zone 1 only to an onsite combustion unit for incineration. The remaining five conveyor strand dryers have no HAP control. Thus, our conclusions regarding the MACT floor for conveyor strand dryers at proposal were overstated. The third best-controlled conveyor strand dryer has incineration-based control only on zone 1 as opposed to controls on all zones. Therefore, we revised our analysis to reflect that the MACT floor for existing conveyor strand dryers is the emissions reduction achievable with incineration-based control on zone 1. To implement this change, we added definitions for ''conveyor strand dryer'' and ''conveyor strand dryer zone'' to the final rule.

The commenter mentioned operating 12 conveyor strand dryers. Six of these conveyor strand dryers are located at new plants that were not included in our pre-proposal MACT floor analysis. These six conveyor strand dryers route emissions from zones 1 and 2 to a closed-loop incineration system for emissions control. Given that newer facilities are incinerating conveyor strand dryer exhaust from zones 1 and 2, we determined that the MACT floor for conveyor strand dryers at new sources is the emissions reductions achievable with incineration-based control for exhausts from zones 1 and 2.

As described in the promulgation BID and supporting documentation, we determined that the environmental benefit of controlling additional conveyor dryer zones would not justify the cost for existing or new conveyor strand dryers.

2. Wood Products Press Enclosures

Comment: Many commenters argued that EPA Method 204 compliance should not be a part of the PCWP MACT floor for presses because most of the press enclosures that were described in the industry survey data as having permanent total enclosures (PTE) were never certified by Method 204 criteria. The commenters noted that most of these enclosures were designed according to Method 204 design criteria; however, the permits for these facilities never required them to comply fully with Method 204 certification. The commenters contended that, of the 26 presses identified as having PTE, only 2 had actually undergone Method 204 certification.

The commenters also argued that Method 204 cannot be applied practically to the hot presses that are used at PCWP facilities. The commenters stated that Method 204 was developed for applications where the emissions have consistent properties; however, the temperature and density of emissions from a typical multiple-opening batch wood products press are constantly changing as the press opens and closes, which creates layers of gases with different physical properties within the enclosure. According to the commenters, instead of mixing and exiting the enclosure, the layers of gases can accumulate. The layers of gas in the upper region of the enclosure have a higher temperature and pressure than the air outside the press, and the lower layers of gas have a lower temperature and pressure than the air outside the press. The commenters maintained that to force the gases outside the enclosure, the operator would have to increase the airflow through the system to a rate that is three to four times higher than would be necessary for an enclosure operating at a homogenous temperature and pressure. The commenters contended that, while many of the wood products presses were designed to follow the Method 204 design criteria, they were not designed to overcome this phenomenon and may not be able to certify that all of the emissions are captured and contained.

The commenters recommended that we address the press capture efficiency issue by implementing work practice requirements for enclosures. The commenters suggested that we replace the proposed definition of PTE with a definition that includes four of the five design criteria found in EPA Method 204, and replaces the requirement that ''all VOC emissions must be captured and contained for discharge through a control device'' with a requirement that ''fugitive emissions shall be minimized through appropriate operation and maintenance procedures applied to the PTE system.''

Response: At proposal, we stated that the MACT floor determination for reconstituted wood products presses was based, in part, on the assumption that a sufficient number of these presses had enclosures that had been certified as PTE according to EPA Method 204. Presses equipped with Method 204 certified PTE would be allowed to claim 100 percent capture efficiency, and thus, the rule requirements (*e.g.*, 90 percent emissions reductions) would effectively apply only to the captured emissions.

Based on our review of available permit information, we agree with the commenters' assessment that few permits have required full Method 204 certification for reconstituted wood products press enclosures, even though many of these press enclosures were constructed based on the Method 204 design criteria. We also agree that the nature of the batch pressing operations in the PCWP industry can make Method 204 certification difficult. Unlike in the printing and publishing industry, for which Method 204 was originally developed, batch PCWP presses are heated, cyclical operations. Because of the internal pressurization within PCWP press enclosures, small amounts of fugitive emissions may appear around the outside of these enclosures. The percentage of press emissions that may be escaping from some of these enclosures has not been quantified but is expected to be small based on available information. We understand the commenters' concern that, due to the presence of these small amounts of fugitive emissions, facilities cannot certify that their Method 204 designed press enclosure can achieve all the Method 204 criteria, in particular the criteria in Method 204 section 6.2 which states that ''All VOC emissions must be captured and contained for discharge through a control device.'' While we feel that PCWP press enclosures should be designed to capture emissions under normal operating conditions, we do not feel it is necessary for PCWP facilities to increase the flow rate from their press enclosures (and the size of their APCD) three to four times to overcome the pressurization within the press enclosure. For the PCWP industry, we feel it would be particularly inappropriate to require such a large increase in exhaust flow to the APCD because the exhaust flows from PCWP process equipment, including presses, are already high volume, low concentration emission streams. High volume, low concentration exhaust streams generally are more costly to treat than low volume, high concentration emission streams. The best-performing press enclosures that defined the MACT floor surround heated presses and are all expected to have pressurization within the press enclosure. In addition, we note that board cooler exhaust is sometimes directed into press enclosures and that enclosures around board coolers have not been certified according to EPA Method 204.

Therefore, instead of requiring EPA Method 204 certification of PCWP press and board cooler enclosures as proposed, today's final rule sets forth slightly different criteria for press and board cooler enclosures. These criteria are based on the design criteria for PTE included in EPA Method 204, as recommended by the commenters; however, the criterion to capture and contain all VOC emissions has been replaced with a requirement that the enclosure be ''designed and maintained to capture all emissions for discharge through a control device.'' To effect this change, we removed references to PTE in the final rule and replaced the proposed definition of PTE with a new definition of ''wood products enclosure'' that lists the design criteria that must be met to comply with MACT. Enclosures that meet the definition of wood products enclosure do not have to test to determine the capture efficiency of these enclosures, but can assume 100 percent capture, such that the control requirements (*e.g.*, 90 percent reduction) apply only to the captured emissions (*i.e.*, the small amount of fugitive emissions outside the enclosure is disregarded).

We also replaced the proposed definition of ''partial enclosure'' with a slightly revised definition of ''partial wood products enclosure'' to eliminate any references to PTE in the final rule. Because the capture efficiency of partial wood products enclosures is unknown, today's final rule requires facilities to test the capture efficiency of partial wood products enclosures using EPA Methods 204 and 204A–F (as appropriate), or using the alternative tracer gas procedure included in appendix A to subpart DDDD of 40 CFR part 63. In addition, facilities have the option of using other methods for determining capture efficiency subject to the approval of the Administrator. As was proposed and suggested by the commenters, today's final rule requires facilities using partial wood products enclosures to demonstrate a combined 90 percent capture and control efficiency for those facilities showing

compliance with the percent reduction requirements for APCD. If the partial wood products enclosure does not achieve high capture efficiency, then facilities must offset the needed capture efficiency by achieving a higher destruction efficiency or with emissions averaging (with the press being an under-controlled process unit).

Comment: One commenter objected to the proposed MACT floor for continuous presses and questioned the applicability of EPA Method 204 to continuous presses. The commenter requested that we divide continuous and batch presses into two different process unit groups for the purpose of determining the MACT floor. The commenter provided information from environmental engineering firms and press manufacturers regarding the fundamental differences between the two types of presses. The commenter noted that continuous presses are much longer than batch presses, reaching lengths of 200 feet (ft), which makes them difficult to completely enclose. The commenter was unaware of any continuous presses that have Method 204 certified PTE. The commenter stated that enclosing a continuous press would cause operational problems, such as heat build-up and impaired visibility, which can lead to mechanical failures and unscheduled downtime. The commenter also cited potential safety concerns, such as increased fire risk and the possibility of unhealthy levels of HAP trapped inside the enclosure. The commenter further noted that the capital and operating costs of PTE applied to continuous presses would exceed those associated with batch presses due to the large size of the enclosure and the increased maintenance costs resulting from heat build-up within the enclosure. In addition, the commenter provided VOC emissions data based on measurements made at different points along the length of one of their continuous presses to demonstrate that emissions from the front stages are minimal and that the majority of emissions are from the last 40 percent of the press length, referred to as the ''decompression zone.'' The commenter contended that gathering the emissions from all stages of the continuous press will result in a more dilute stream, which will be less cost-effective to treat, and that the large volume of exhaust to be treated would likely preclude the use of biofilters, which are more practical for treating smaller volumes of air.

To remedy the situation, the commenter recommended that we divide batch and continuous presses into two different process unit groups for the purpose of determining the MACT floor. Because there are fewer than 30 continuous presses, the MACT floor for existing continuous presses would be determined based on the average emissions limitation achieved by the five best-performing continuous presses. The commenter provided information to support the commenter's contention that none of the continuous presses achieved 100 percent capture and suggested that the MACT floor for capture efficiency is 80 percent capture of emissions from the decompression stages.

Response: As explained in the proposal preamble, we based the MACT floor determinations for PCWP equipment on process units that are similar with respect to design, operation, and emissions. We acknowledge that continuous presses have a different design than multiopening batch presses. However, continuous presses have emissions that are within the same range as those from batch presses on a lb/MSF of board basis. Therefore, we feel it is reasonable to group batch and continuous presses together for purposes of determining the MACT floor. The MACT floor for continuous presses would be the same as the MACT floor for batch presses regardless of whether batch and continuous presses were placed in separate equipment groups. As explained below, we disagree that the MACT floor capture efficiency for continuous presses is 80 percent, as suggested by the commenter.

The commenter was incorrect in suggesting that there are no continuous presses with Method 204 certified PTE. The two existing press enclosures in the PCWP industry identified as being Method 204 certified surround continuous presses. The lengths of these two continuous presses are 41.5 ft and 110 ft. Due to the presence of these presses plus additional continuous presses equipped with total enclosures not certified via Method 204, the MACT floor for new and existing continuous presses is still a total enclosure and incineration-based control or biofilter, regardless of whether or not batch and continuous presses are treated as separate equipment groups. In addition, there is a Method 204 certified PTE around a 181-ft continuous press at a newer PCWP facility (which was not included in original data collection efforts and the pre-proposal MACT floor determination); however, this press has had some operational problems associated with its PTE. It is not clear if the operational problems experienced by this 181-ft-long press are the result of poor PTE design or inherent technical difficulties associated with enclosing long continuous PCWP presses.

Long continuous presses are generally being installed at new PCWP facilities, as opposed to being retrofit at existing facilities. Given that there is at least one long continuous press (110 ft) with a Method 204 certified PTE that has not experienced operational problems with its press enclosure, we feel that wood products enclosures (as defined in today's final rule) can be designed around long continuous presses. We recognize that higher cost may be associated with wood products enclosures around long continuous presses than for batch presses, but the CAA does not allow us to consider cost at the MACT floor control level.

We note that enclosures greater than 200 ft in length are common in the printing/publishing industry. However, we do recognize there are differences in the enclosures used in the printing/publishing industry and those in the PCWP industry. Although not cyclical in operation like batch presses, continuous presses are heated operations and may also have internal pressurization issues similar to those raised by the commenters for batch presses. Therefore, we feel it is appropriate for the same definition of wood products enclosure promulgated for batch presses to apply to long continuous presses as well (as opposed to Method 204 certification).

3. MACT Floor Determinations of No Emissions Reductions

Comment: Industry commenters supported our proposed MACT floor determinations of no emissions reductions for some process units, arguing our approach was fully consistent with applicable case law in the U.S. Court of Appeals for the D.C. Circuit. EPA properly determined that the average of the best-performing 12 percent of certain existing PCWP process units did not reflect the use of any control technology, and that no other universally applicable variables would affect HAP emissions, industry commenters stated. The commenters also claimed that EPA looked at pollution prevention (P2) measures and other approaches to determining the MACT floor, found none that are universally applicable, and therefore was permitted to base a no emissions reduction floor on the PCWP record.

Response: As explained in the proposal preamble and supporting documentation, for those process units not required to meet the control requirements in the PCWP rule as proposed, we determined that: (1) the MACT floor level of control is no

emissions reductions, and beyond-the-floor control options are too costly to be feasible; or (2) insufficient information is available to conclude that the MACT floor level of control is represented by any emissions reductions. We based our MACT floor determinations for PCWP emission sources on the presence or absence of an add-on air pollution control device because we are not aware of any demonstrated P2 techniques that can be universally applied across the industry, and we have no information on the degree of emissions reduction that can be achieved through P2 measures. Therefore, to our knowledge the use of add-on controls is the only way in which PCWP sources can currently limit HAP emissions, and the only way to identify the MACT floor for these sources is to identify a level that corresponds to that achieved by the use of add-on controls. When determining the MACT floor, we ranked the process units by control device rather than by actual unit-specific emissions reductions because we have limited inlet/outlet emissions data. Based on the available information, we are not aware of any significant design or operational differences among each type of control system evaluated that would affect the ranking of process units. Furthermore, we are not aware of factors other than the type of control system used that would significantly affect the ranking of process units. An analysis of the available emissions data does not reveal any process variables that can be manipulated (without altering the product) to achieve a quantifiable reduction in emissions. Ranking process units according to control device, we determined that the MACT floor is no emissions reductions for several process unit groups including press predryers, fiberboard mat dryers, and board coolers at existing affected sources; and dry rotary dryers, veneer redryers, softwood plywood presses, hardwood plywood presses, engineered wood products presses, hardwood veneer dryers, humidifiers, atmospheric refiners, formers, blenders, rotary agricultural fiber dryers, agricultural fiber board presses, sanders, saws, fiber washers, chippers, log vats, lumber kilns, storage tanks, wastewater operations, miscellaneous coating operations, and stand-alone digesters at new and existing affected sources. As explained in the promulgation BID and supporting documentation, we also determined that beyond-the-floor control options are too costly for these process unit groups.

At proposal, we requested comment on whether no emissions reductions for miscellaneous coating operations and for wastewater operations is appropriate (68 FR 1276, January 9, 2003). We also requested that commenters on this issue submit any information they might have on HAP or VOC emissions from miscellaneous coating operations and wastewater operations. However, no additional information on these operations was received from any of the commenters on the proposed rule. Following proposal, we reviewed our MACT analyses for miscellaneous coating and wastewater operations, as described in the following paragraphs and in the promulgation BID and supporting documentation. For miscellaneous coating operations, we gathered some additional information and were able to revise our conclusions regarding MACT in the absence of specific information on the emissions reduction achieved. However, we have no more reason to feel now than we did at proposal that PCWP wastewater operations are in fact subject to any emission control measures.

Based on the available information, we have no basis to conclude that the MACT floor for new or existing sources is represented by any emission reductions for several of miscellaneous coating processes (*i.e.*, anti-skid coatings, primers, wood patches applied to plywood, concrete forming oil, veneer composing, and fire retardants applied during forming), and we determined that there are no cost-effective beyond-the-floor measures to reduce HAP from these coating processes. However, some facilities reported use of water-based (non-HAP) coatings in their MACT survey responses for other types of coatings (including edge seals, nail lines, logo paint, shelving edge fillers, and trademark/gradestamp inks). Other facilities reported use of solvent-based coatings for these processes. In some instances, a few respondents provided information on the percent HAP content of a solvent-based coating. Solvent-based coatings do not always contain HAP (*e.g.*, the solvent may be mineral oil which does not contain HAP), and water-based coatings typically do not contain HAP. Thus, many of the coatings reported in the MACT survey responses are non-HAP coatings. While the emission reduction achieved as a result of coating substitutions cannot be determined, it is clear that use of non-HAP coatings represents the MACT floor because of the large number of facilities reporting use of non-HAP coatings. Beyond-the-floor options were not considered for edge seals, nail lines, logo paint, shelving edge fillers, and trademark/gradestamp inks because no further emissions reductions can be achieved than through use of non-HAP coatings. Based upon our revised MACT analysis, the final PCWP rule requires use of non-HAP coating for processes identified as group 1 miscellaneous coating processes.

The definition of non-HAP coating included in the final rule was based on the description of non-HAP coatings in the final WBP NESHAP (subpart QQQQ to 40 CFR part 63). This definition allows for unavoidable trace amounts of HAP that may be contained in the raw materials used to produce certain coatings. Through the definition of group 1 miscellaneous coatings in the final rule, kiln-dried lumber is excluded from the requirement to use non-HAP coatings because application of coatings used at kiln-dried lumber manufacturing facilities is not part of the PCWP source category. Although trademarks/gradestamps are applied to kiln-dried lumber, lumber kilns are the only processes at kiln-dried lumber manufacturing facilities covered under the PCWP source category.

For wastewater operations, we concluded that we had insufficient information to conclude that the MACT floor level of control is represented by any emissions reductions. The available information on wastewater operations collected as part of the MACT survey of the PCWP industry and information contained in State permits indicated that these sources of emissions were not the subject of control requirements and were not expected to be significant sources of HAP or VOC emissions. As stated above, we received no comments containing additional information on emissions reduction measures or HAP/VOC emissions from wastewater operations. Thus, we have no more reason to feel now than we did at proposal that PCWP wastewater operations are in fact subject to any control measures. As a result, since no information shows that these PCWP operations use add-on controls, there is no identifiable numerical emissions level that would correspond to a MACT floor level reflecting the use of controls, and the only floor level demonstrable based on current data is no emissions reduction. Furthermore, given that our best data show that the emissions from wastewater operations are less than 1 ton/yr, we concluded that application of the control measures mentioned above would not be cost effective beyond-the-floor options. In response to the commenter's objection to the incompleteness of the data set for these PCWP operations, we note that the D.C. Circuit does not require EPA to obtain complete data as long as we are able to otherwise estimate the MACT floor

(*Sierra Club* v. *EPA,* 167 F.3d 658,662 (D.C. Cir. 1999)). Unlike dryers and presses at PCWP plants, wastewater operations have not been subjected by permitting authorities to controls for HAP emissions. We expended much effort in the early stages of the project gathering complete and accurate information on the PCWP processes with the most potential for HAP emissions and the greatest potential for emission control (*i.e.*, the processes that have been the focus of permit requirements limiting HAP/VOC emissions) and the final PCWP rule addresses emissions from these process units.

Had we been given reason to feel that there were emissions control measures associated with wastewater operations, we would have gathered more information for these processes earlier in the project. Even though we have determined that the current MACT floor for these PCWP operations is no emission reduction, since available information indicates they are not controlled, the HAP emissions from wastewater operations (and other PCWP sources with MACT determinations reflecting no emissions reductions) will be considered further when we review residual risk as required under section 112(f).

E. New Source MACT

Comment: One commenter objected to our determination that MACT is the same degree of control for new and existing sources for many process units based on the fact that the best technology is the same for new and existing sources (*i.e.*, incineration-based controls or biofilters). The commenter pointed out that, according to the proposal BID, the maximum percent control efficiency is in the upper 90s for THC, formaldehyde, and methanol. The commenter noted that the CAA requires the MACT floor to be based on the degree of emissions reduction achieved in practice by the best-controlled similar source. Thus, the commenter requested that we revise the new source MACT requirements for process units based upon the greatest reductions recorded.

Response: As explained in the preamble to the proposed rule and supporting documentation, the MACT floor for both new and existing sources is based on the estimate of the performance achieved through application of RTO, RCO, or biofilters. We acknowledge that some incineration-based controls and biofilters can achieve greater than 90 percent reduction in HAP or THC during a single performance test or a test run within a performance test. However, we also recognize that the percent reduction achieved can vary according to pollutant inlet concentration, a factor that is not directly controllable from a process or control device standpoint. Other unknown factors may also cause variability in control system performance. For example, we have THC percent reduction data for an RTO used to control emissions from three tube dryers and a press at an MDF plant for two emission tests conducted at different times. In 1996, the RTO achieved 92.7 percent reduction of THC, and in 1998 the same RTO achieved 98.9 percent reduction of THC. In addition, we have emissions test data for the same process unit and control system for multiple years, and these data show different emission factors, indicating that variability is inherent within each process unit and control system combination. Thus, we estimate that the best MACT technology achieves 90 percent HAP reductions when variations in operations and measurements are considered.

F. Definition of Control Device

Comment: Several commenters requested that we add scrubbers and adsorbers to the proposed definition of ''control device'' and that condensers be omitted from the definition. One of the commenters operates a particleboard press that is equipped with a condenser that condenses steam from the press exhaust and then routes the condensate to an onsite wastewater treatment system. The remaining noncondensed gases are combusted in an onsite boiler as supplemental fuel. This commenter would like to be able to comply with the PBCO for reconstituted wood products presses rather than demonstrate compliance with one of the add-on control system compliance options (*e.g.*, 90 percent emissions reduction) or emissions averaging provisions; however, the commenter noted that PBCO only apply to uncontrolled emission sources. Therefore, the commenter requested that the definition of control device be limited only to those add-on control systems that were designed with HAP removal as the primary goal.

Response: We disagree with the commenters that the proposed definition of control device should be changed. The definition in the final rule does not include scrubbers or absorbers but does include condensers and combustion units that incinerate process unit exhausts. For purposes of MACT standards development, the reason a control device is installed is immaterial. All control devices or techniques that reduce HAP emissions are considered when setting MACT standards. We note that the PBCO were developed and included in the PCWP rule for inherently low-emitting process units or process units with P2 techniques and not for process units with add-on control systems. Therefore, the particleboard press equipped with the condenser and combustion unit described by the commenter cannot comply using the PBCO.

In the proposed PCWP rule, we intentionally omitted absorbers (*e.g.*, wet scrubbers) from the list of potential control devices because these technologies generally are not reliable for reducing HAP emissions. These wet systems may achieve short-term reductions in THC or gaseous HAP emissions; however, the HAP and THC control efficiency data, which range from slightly positive to negative values, indicate that the ability of these wet systems to absorb water-soluble compounds (such as formaldehyde) diminishes as the recirculating scrubbing liquid becomes saturated with these compounds. We wished to limit the examples included in the definition of control device to those devices for which we have data to demonstrate that they are effective in reducing HAP emissions from PCWP facilities. However, we note that the definition includes the phrase ''but not limited to'' and does not exclude other types of controls. We are aware that new technologies (some of which may be adsorption-based or absorption-based) may be developed that effectively reduce HAP emissions from PCWP sources. The definition of control device does not prevent their development or use.

Facilities using wet scrubbers or WESP to meet the add-on APCD or emissions averaging compliance options can petition the Administrator for approval of site-specific operating requirements to be used in demonstrating continuous compliance. Alternatively, facilities using a wet scrubber or WESP may use a THC CEMS to show that the THC concentration in the APCD exhaust remains below the minimum concentration established during the performance test. In addition, facilities using wet control devices (*e.g.*, wet scrubber or WESP) as the sole means of reducing HAP emissions must submit with their Notification of Compliance Status a plan for review and approval to address how organic HAP captured in the wastewater from the wet control device are contained or destroyed to minimize re-release to the atmosphere such that the desired emission reduction is obtained. Because wet scrubbers or WESP are add-on

APCD and have variable effects on HAP emissions, today's final rule specifies that sources cannot use add-on control systems or wet control devices to meet PBCO. As part of this change, we added a definition of ''wet control device'' to today's final rule. We note that PCWP facilities demonstrating compliance with the PBCO for process units equipped with any wet control device that effects HAP emissions must test prior to the wet control device.

G. Compliance Options

1. Add-On Control System Compliance Options

Comment: We received a number of comments related to the six add-on control systems compliance options and how these options might be implemented at an actual PCWP facility. One commenter argued that the use of multiple compliance options for add-on control systems will make it difficult for State agencies to determine if a facility is actually in compliance. The commenter pointed out that, if a facility tested for two options but passed only one, it would still be in compliance. However, the commenter stated that the rule as proposed was unclear whether a facility would be in violation if the facility chose to test for one option, failed that test, and then conducted another test to determine compliance with a different option. The commenter contended that this would constitute a violation of the standard, and any retesting to determine compliance with a different option would not reverse the initial violation. Therefore, the commenter requested that we clarify that the option to use the most beneficial results of two or more test methods applies only when these tests are conducted during a single performance test. According to the commenter, any facility that chose to use only one test method during the compliance test would have to accept the results of that test.

Other commenters argued that a facility should be able to switch among the six add-on control options as needed to maintain compliance. To illustrate the necessity of the ability to switch from one add-on control option to another, the commenters provided an example whereby the operator of a veneer dryer might want to demonstrate compliance with the 90 percent THC reduction option (option 1 in Table 1B to the final rule) under certain operating conditions and with the 20 parts per million by volume (ppmv) THC option (option 2 in Table 1B to the final rule) under other operating conditions. One of the commenters also noted that production starts and stops and minor malfunctions are common at PCWP facilities, and most of them do not affect the performance of the air pollution control device. However, frequent SSM events resulting in a low concentration to the inlet of the control device could affect a facility's ability to comply with the percent reduction option. In this case, the commenter stated that the freedom to switch compliance options would be valuable. For these reasons, the commenters requested that we explicitly state in the final PCWP rule that ''a facility only need comply with any one of the six options at any one time, and that it can change between them as needed to fit process operating conditions.''

Response: We understand the commenters' concerns on this issue and have written the final rule to clarify our intentions regarding how the add-on control system compliance options should be implemented at PCWP facilities. The proposed rule states at 40 CFR 63.2240 that ''You cannot use multiple compliance options for a single process unit.'' We included this provision to prevent PCWP sources from partitioning emissions from a single process unit and then applying different control options to each portion of the emissions stream. The MACT floor determinations and compliance options were all based on the full flow of emissions from process units, and therefore, compliance options should be applied to the same mass of emissions to ensure that the required MACT floor emissions reductions are achieved. When including this restriction, we did not intend necessarily to limit PCWP facilities to only one of the six options for add-on control systems. We did assume that each source would likely select only one option, and that at any point in time for purposes of assessing compliance, the given compliance option would have been pre-selected and reflected as applicable in the source's permit. In fact, in discussions with industry representatives prior to proposal, they expressed concern that the final rule be written to make it clear that a source would only have to comply with one option and not all six.

Based on available data, we expect that most facilities will be able to demonstrate compliance with more than one of the compliance options for add-on control systems. When developing the six compliance options for add-on control systems, we felt that PCWP facilities would conduct emissions testing (*e.g.*, inlet and outlet testing for THC, methanol, and formaldehyde over a range of APCD operating temperatures) and then, based on the results of testing, select the option that provides them with the most operating flexibility as well as an acceptable compliance margin (*i.e.*, select the option that they feel will be easiest for them to meet on a continuous basis under varying conditions). The operating parameter limit to be reflected in the source's permit (*e.g.*, minimum temperature) would be based on the measurements made during the compliant test runs. For example, if test results show that a facility can achieve 90 percent reduction for formaldehyde, 92 percent reduction for methanol, and 94 percent reduction for THC, then the facility may decide to reduce THC emissions by 90 percent, since this option appears to provide the greatest compliance margin. The corresponding operating parameter level measured during the testing (*e.g.*, minimum 15-minute RTO temperature during a three-run test) would then be set as the operating limit in the permit for that source. In this example, if the RTO operating temperature drops below the operating limit, that would be a deviation, and any subsequent retesting done by the facility would presumably be done based on the chosen compliance option (*e.g.*, reduce THC emissions by 90 percent). Determining compliance in this case is relatively straightforward. However, we are aware that State agencies may simply refer to a NESHAP as part of a permit and not stipulate which compliance option the facility must meet. In these cases, we agree with the commenter who was concerned that compliance can be complicated when the referenced NESHAP contains multiple options, and that such a broad reference would not be adequate to identify the particular option (and parameter operating limits) applicable to the source. We also agree that, if a facility selects multiple options under the compliance options for add-on control systems, it should be required to conduct all necessary testing associated with compliance with the selected options concurrently. In addition the facility should obtain permit terms reflecting these options as alternate operating scenarios that clearly identify at what points and under what conditions the different options apply, such that compliance can be determined during a single time frame. For example, if the source wishes to include options 1, 3, and 5 in their permit, then it must perform inlet and outlet testing for THC, methanol, and formaldehyde any time the State agency has reason to require a repeat performance test (if all three options are simultaneously applicable) or test for the single applicable option

that corresponds to the given time and condition (if the options apply as alternate operating scenarios under different conditions). With this approach, we would avoid situations where a facility retests to determine compliance with a compliance option, fails to demonstrate compliance with that option, and then conducts additional testing to determine compliance with other options that are not pre-established as applicable at a later date.

The final rule clarifies our intentions regarding the use of multiple control options with respect to add-on control systems versus the combining of control options for a single process unit. The language in 40 CFR 63.2240 of the final rule has been modified to remove the proposed text stating that a source ''cannot use multiple compliance options for a single process unit'' and replace it with a statement that a source ''cannot combine compliance options in paragraphs (a) [PBCO], (b) [add-on control systems compliance options] or (c) [emissions averaging provisions] for a single process unit.'' We feel that this wording change clarifies our intention to prevent sources from applying different control options to different portions of the emissions from a single process unit, while leaving open the potential for PCWP facilities to be able to include multiple compliance options for add-on control systems (*i.e.*, one option per defined operating condition) in a State permit. Although add-on controls are used in emissions averaging plans to achieve full or partial control of emissions from a given process unit, the emissions from a single process unit cannot be parceled such that a portion of the emissions meets one of the add-on control system compliance options and another portion is used as part of an EAP. The final rule continues to state that sources must meet at least one of the six options for add-on control systems.

2. PBCO Limits

Comment: Several commenters requested that PCWP facilities be allowed to use add-on control methods to achieve the PBCO limits. The commenters argued that allowing compliance with the PBCO using APCD is consistent with other MACT rules and P2 approaches. According to the commenters, numerous NESHAP allow emissions limits to be reached using add-on controls, P2 techniques, or a combination of both. The commenters stated that there was no legal or policy basis for imposing restrictions on the use of PBCO in the PCWP MACT. The commenters also stated that using add-on controls to comply with PBCO will benefit facilities that have process units that emit low levels of HAP. According to the commenter, some companies have already implemented P2 strategies that have been established as BACT in a prevention of significant deterioration (PSD) permit. Because these P2 strategies may fall short of the PBCO, companies implementing these strategies would be unable to achieve compliance with the proposed rule without abandoning the P2 strategy and installing full control. The commenters also stated that incorporating add-on controls in the PBCO would provide incentives to find low-energy pollution control equipment. The commenters gave an example whereby part of the emission unit exhaust could be used as combustion air for an onsite boiler. The commenters noted that in most cases, the boiler could only handle a portion of the exhaust from multiple dryer stacks. The commenters stated that by combining this type of partial control approach with low-temperature drying, a facility may be able to meet the applicable dryer PBCO limit. According to the commenters, in this case, allowing for partial control would exclude the need for RTO technology and would provide a net benefit to the environment with a reduction of collateral oxidizer emissions. The commenters gave another example in which a facility with a conveyor strand dryer could send the exhaust from the first dryer section to a burner and then send the heat back to the dryer; the emissions from the remaining dryer sections would be uncontrolled if the total emissions were below the PBCO limit. In a third example provided by the commenters, a facility would remove enough HAP to comply with the PBCO limit using a scrubber, which would require less energy than incineration.

Response: As in the proposed rule, the final rule does not allow sources to comply with the PBCO through the use of add-on control systems. Our intention for including the PBCO was to provide an alternative to add-on controls (*e.g.*, allow for and encourage the exploration of P2, which currently has not been demonstrated as achieved by PCWP sources) and not to create another compliance option for sources equipped with add-on control systems that could inadvertently allow add-on control equipped systems to not perform to expected control efficiencies. Sources equipped with add-on control systems already have six different compliance options from which to choose, in addition to the emissions averaging compliance option. We note that the six options for add-on control systems are based on emissions reductions achievable with MACT control devices and thus are a measure of the performance of MACT control devices. This might not be true if a source combined PBCO and add-on controls, as explained below.

At proposal, we established PBCO limits for 10 process unit groups. Initially, we felt that we needed total HAP data for at least one process unit in each process unit group that was equipped with a control system in order to establish the PBCO limits. However, we had to discard this approach because controlled total HAP data are not available for half (5 of 10) of the process unit groups. We developed a number of other approaches to establishing PBCO, and then compared the results of these approaches, where possible, with actual emissions in the outlet of MACT control devices. The approach that yielded results closest to actual emissions in the control device outlets was an approach based on a 90 percent reduction from the average emissions each process unit group. Thus, this approach was the one that resulted in limits that would most closely represent an alternative to the six compliance options for add-on control systems. However, our intention was not to develop an alternative limit to the six limits already established for add-on control devices. Our intention was to develop an alternative for P2 techniques. We decided to select an approach that allows sources that develop P2 techniques (or are otherwise inherently low-emitting sources) to comply and that reduces HAP emissions without generating the NO_X emissions associated with incineration-based controls. As a result, we selected a 90 percent reduction from the highest data point within each process unit group, because the results appeared to be at levels that would not preclude the development of environmentally beneficial P2 options as MACT.

If PBCO were allowed as another option for measuring the performance of add-on control devices, operators could run the APCD so that the APCD would not achieve MACT level emissions reductions, but would meet the PBCO. We note that we did not develop the methanol and formaldehyde add-on control options (options 4 and 6 in Table 1B to the final rule) based on typical or maximum levels of methanol and formaldehyde found in the outlet of the control devices, but instead looked at the performance of the MACT control devices in reducing these HAP, set the levels based on the method detection limits for these compounds, and

included a minimum inlet concentration requirement for the use of the outlet concentration options to ensure that HAP emissions reductions are achieved. Allowing the use of APCD to comply with PBCO could allow circumvention of such optimization, which could render the MACT control itself to be less effective than MACT.

Regarding the other MACT standards referenced by the commenters, we agree that these other rules may allow facilities more flexibility in meeting a production-based option (*e.g.*, ''lb/ton'' emission limit); however, we cannot allow add-on controls to be used to meet the PBCO in the final PCWP rule because doing so would render these limits not equivalent to the other compliance options. For example, consider a typical wood products press with an annual production rate of 100 million square feet of board per year and a total HAP emission rate of 1.0 pound per thousand square feet of board on a 3/4-inch basis (lb/MSF 3/4″). On an annual basis, the example press emits 50 tons of HAP per year. If the example press complies with the 90 percent HAP reduction requirement, then the HAP emissions reductions achieved will be at least 45 tons/yr. However, if this same press were allowed to comply with the applicable PBCO limit (0.30 lb/MSF 3/4″) using an APCD (*e.g.*, RTO), then the emissions reductions achieved could be as little as 35 tons/yr if the APCD is only applied to a portion of the press' emissions or if the APCD is not operated at MACT-level efficiency. Not only would a significantly lower HAP emission reduction be achieved in this situation, but there also would not be any net benefit to the environment to justify the lower HAP reduction (*i.e.*, NO_X emissions would still be created). Therefore, we feel it is appropriate and in keeping with the MACT floor to require PCWP process units with uncontrolled HAP emissions above the PBCO thresholds to achieve the full 90 percent reduction in emissions. We also wish to clarify that a PCWP facility may use any number of compliance options, as long as these options are not combined for an individual process unit. For example, a facility may choose to meet the applicable PBCO limit for one dryer, control emissions from a blender to avoid controlling emissions on the remaining two dryers as part of an emissions average, and comply with one of the add-on control systems compliance options for the press.

Regarding the examples cited by the commenter as candidates for a PBCO if add-on controls were allowed, we note that the final rule includes a revised MACT floor for existing conveyor strand dryers, such that existing conveyor strand dryers that send the emissions from the first dryer section back to the combustion unit that heats the dryer should be able to meet the rule requirements without additional controls. In addition, partial control (*e.g.*, routing part of the emission stream from a process unit to an onsite combustion unit for incineration) is allowed as part of an EAP as long as the actual emissions reductions achieved are greater than or equal to the required emissions reductions. When partial control is used as part of an EAP, the overall reductions are equivalent to what would be achieved if a source elected to comply using the add-on control system compliance options; however, the same would not be true if partial control were used to comply with a PBCO limit. Therefore partial incineration control is not allowed in the PBCO.

Regarding the use of scrubbers to comply with a PBCO, as stated earlier in this preamble, the PCWP industry's own data do not support wet scrubbers as a reliable control technology for HAP, and sources equipped with wet control devices will be required to test prior to the wet control device if they elect to comply with a PBCO.

Comment: Several commenters stated that PCWP facilities should be allowed to neglect nondetect HAP measurements for PBCO calculations. The commenters argued that if a facility is forced to use values of one-half the detection limit for nondetect HAP, that facility may be unable to use PBCO because the mass of emissions attributed to undetected compounds may consume 50 percent or more of the PBCO limit. The commenters also noted that the detection levels measured in the field by the NCASI test method, NCASI IM/CAN/WP–99.01, generally range between 0.35 and 1 ppm, and the detection levels of the FTIR method averages about 1 ppm. According to the commenters, even at these low concentrations, using one-half the detection limit for nondetect compounds can put the PBCO out of reach for a high-flow-rate PCWP stream. The commenters also provided a sample calculation to demonstrate the effect that the detection level has on the compliance calculation.

Response: In responding to this request, we reviewed the information supplied by the commenters and analyzed the potential effects of making the requested change using available emissions data. After reviewing the total HAP data used to establish the PBCO limits, we decided that sources should be able to treat nondetect measurements for an individual HAP as zero for the sole purpose of determining compliance with the PBCO, if, and only if, the following two conditions are met: (1) The detection limit for that pollutant is set at a value that is less than or equal to 1 ppmvd, and (2) emissions of that pollutant are nondetect for all three test runs. We included the first condition to prevent test contractors from setting the detection limits too high, and thus generating false zeroes. We selected 1 ppmvd as the maximum detection limit value because it matches the detection limits achievable with the test methods included in the final PCWP rule. We included the second condition to ensure that the source is truly low-emitting, as evidenced by three nondetect test runs. If emissions of the HAP are detected during any one test run, then any nondetect runs must be treated as being equal to one-half the detection limit. The option to treat nondetect measurements as zero does not apply to the compliance options for add-on control systems because treating the outlet emissions from a control device as zero would artificially increase the calculated control efficiency for that pollutant to 100 percent.

To ensure that the PBCO limits were developed in a manner consistent with how they would be applied, the PBCO limits were recalculated using zero for nondetect measurements when all test runs were nondetect. As a result, the PBCO limit for reconstituted wood product board coolers changed from 0.015 to 0.014 lb/MSF 3/4″. No other PBCO limits changed as a result of using zero for nondetects when calculating the PBCO limits.

We added a new PBCO limit to the final rule for secondary tube dryers. This new limit corresponds to our decision to treat primary and secondary tube dryers as separate process units, as discussed previously in this preamble. The final rule also differentiates between rotary strand dryers and conveyor strand dryers, as discussed previously in this preamble; however, no new PBCO limits have been added for these two process units groups. The final PBCO limit for rotary strand dryers is the same as the proposed limit for strand dryers because the data used to establish the proposed PBCO limit was based on data from rotary strand dryers exclusively. We do not have the necessary data to establish a PBCO for conveyor strand dryers, and thus the final rule does not include a PBCO limit for that process unit group.

3. Emissions Averaging Provisions

Comment: Industry commenters generally expressed support for the

inclusion of an emissions averaging program in the PCWP rule as proposed, but requested that the proposed provisions be modified to allow for broader use of emissions averaging at PCWP facilities. Requested modifications include allowing sources to receive credit for achieving emissions reductions greater than 90 percent; basing compliance on a single pollutant; allowing sources to combine emissions averaging with PBCO; and allowing sources to receive credit for P2 alternatives as part of an EAP.

Response: We included an emission averaging compliance option in the proposed rule as an equivalent, more flexible, and less costly alternative to the compliance options for add-on control systems. Unlike previous MACT standards with emissions averaging, the proposed (and final) emissions averaging provisions in the PCWP rule do not include (1) limits on the number of sources that can be included in an emissions average, (2) requirements for a hazard or risk analysis, or (3) application of a 10 percent discount factor to emissions credit calculations. In addition, the emissions averaging provisions in the final PCWP rule require that credits for emissions reductions be achieved using APCD, and that the EAP be based on emissions of the six predominant HAP emitted from PCWP process units, referred to as total HAP. Also, the emissions averaging provisions do not allow credit for reductions beyond 90 percent.

We disagree with the commenters' request to allow credit for achieving greater than 90 percent control of HAP as part of an EAP. We note that the 90 percent MACT floor level (upon which the emissions averaging provisions are based) reflects the inherent variability in uncontrolled emissions from PCWP process units and the decline in performance of control devices applied to these process units. The data set used to establish the MACT floor is composed of point-in-time test reports, some of which show a greater than 90 percent control efficiency; however, we selected 90 percent as the MACT floor level of control to reflect inherent performance variability. Therefore, it would be inappropriate to allow PCWP facilities to receive credit for similar point-in-time performance tests showing greater than 90 percent control, considering that the same types of control technologies would be used.

Regarding the commenters' request to allow credit for greater than 90 percent control for those sources with no MACT control requirements, we maintain that this would be inappropriate because the same issues of emissions variability and control device performance apply to those emission sources, and they likely would share control devices with PCWP process units that do have MACT control requirements.

We have rejected the commenters' suggestion to base the emissions averaging provisions on a single pollutant (*e.g.*, THC, methanol or formaldehyde), and retained the requirement in the final rule that the EAP must be based on total HAP. The predominant HAP emitted from a given process unit varies, with some process units emitting methanol as the predominant HAP and others emitting formaldehyde or acetaldehyde as the predominant HAP. However, the predominant HAP will always be one of the six we have identified in the definition of total HAP in the final PCWP rule. If we based the EAP on only one pollutant, process units that emit the target HAP in small quantities will not be correctly accounted for in the EAP, resulting in potentially less stringent control and greater potential risk than would result with other control options. As noted above, we did not include a hazard/risk study as part of the proposed EAP because we were requiring that the emissions reductions be based on total HAP, and PCWP process units generally emit the same six primary HAP, although in different quantities and ratios. Basing the EAP on a single pollutant would eliminate our rationale for not requiring a risk analysis. We also note that, while THC emissions are an acceptable surrogate for monitoring the performance of an add-on control device (same control device mechanisms that reduce THC emissions reduce HAP emissions), THC emissions are not an accurate surrogate for establishing baseline HAP emissions for uncontrolled process units, and thus the EAP should not be based solely on THC emissions. Although all PCWP process units emit THC, uncontrolled THC emissions from softwoods are substantially higher than from hardwoods due to non-HAP compounds (*e.g.*, pinenes) present in softwoods. Therefore, allowing sources without add-on controls to focus on THC reductions achieved by increasing hardwood usage might reduce THC emissions but would have a minimal impact on HAP emissions. For these reasons, we feel that, for the purpose of the final rulemaking, THC should only be used as a surrogate for HAP when assessing the performance of an add-on control device, and should not be used as a surrogate for establishing the required and actual mass removal of HAP as part of an EAP.

We disagree with the commenters that combining the emissions averaging option and PBCO will result in equivalent emissions reductions. As we stated in our response to previous comments in this section regarding PBCO, we developed the PBCO limits to provide an option for sources that develop P2 techniques. The PBCO limits represent applicability cutoffs such that sources with emissions below the applicable PBCO thresholds are not required to further reduce those emissions below MACT levels. By combining PBCO limits with the EAP, as proposed by the commenter, we would be allowing higher-emitting sources (*i.e.*, those that cannot meet a PBCO and which should be controlled) to escape controls by artificially lowering their emissions (using the credits from the EAP) to levels that would qualify as low-emitting (below PBCO limits). This is counter to the intent of the PBCO and would result in lower emissions reductions than would be achieved without combining these two compliance options; therefore, this does not represent an option that is equivalent to the MACT floor and is not allowed in the final rule.

We also disagree with the commenters' suggestion to modify the emissions averaging provisions to allow sources to receive credit for P2 projects because: (1) Compliance options (*i.e.*, PBCO) already exist for any P2 projects that prove feasible, and (2) inclusion of currently undemonstrated P2 projects within EAP would unnecessarily complicate these plans and hamper enforcement. As we noted previously in this preamble, the final rule allows PCWP facilities to use both P2 (*i.e.*, the PBCO) and emissions averaging at the same facility; sources are only limited in that they cannot apply both options to the same process unit. We also disagree with the commenters' assertion that quantifying the emissions reductions from P2 projects would not be difficult. Quantifying the emissions reductions associated with P2 projects has historically been a contentious issue, especially when a baseline emission level must be established from which to calculate the emissions reduction. We feel that the same issues apply for PCWP facilities, especially given the fact that P2 techniques have not been widely used or documented in the PCWP industry. In contrast, emissions reductions achieved through the use of add-on control systems are easily documented. The PBCO were established to address the future development and implementation of P2 techniques; however, the resultant

PBCO limits do not require that emissions reductions be determined. Instead, sources simply demonstrate that they are below the PBCO limit and will continue to operate in a manner that ensures they will remain below the PBCO limit.

Regarding the suggested P2 option of increasing a facility's use of hardwood species, in addressing other issues, commenters stressed the difficulties associated with maintaining a consistent wood material flow in terms of species, moisture content, etc., which would suggest that an operating condition based on maintaining a set level of wood species would be unworkable. Furthermore, for veneer dryers, where species identification (hardwood vs. softwood), and thus enforcement, is fairly straightforward from the standpoint of both visual inspection and end-product, we have already established separate MACT floors for softwood and hardwood veneer dryers (and require no further emissions reductions from hardwood veneer dryers). When the end product is particleboard or MDF, and the raw material is in the form of wood chips, planer shavings, or sawdust, determining how much of that material is softwood versus hardwood would be very difficult, and likely unenforceable. Because of commenters' concerns that an operating condition based on wood species is technically unworkable and the associated enforcement issues, we feel this option is not viable.

Regarding process changes such as reformulation, lowering dryer temperature, and routing process unit exhaust to existing combustion devices, the final rule already includes compliance options that would accommodate all of these strategies. For example, product reformulation and lowering dryer temperature are potential P2 options, and the PBCO limits would apply if the P2 efforts sufficiently lower emissions. The final PCWP rule distinguishes between green (high temperature, high moisture) rotary dryers and dry (low temperature, low moisture) rotary dryers and requires no further emissions reductions from dry rotary dryers. Regarding the use of existing combustion units as control devices, the final rule allows sources to route emissions to onsite combustion units for incineration. The final rule also allows sources to control a portion of a process unit's emission stream as part of an emissions average. However, we disagree that incineration of emissions in onsite process units is a P2 measure. Therefore, compliance with the PBCO using process incineration is not allowed in the final rule. The add-on control system and emissions averaging compliance options are available for process units controlled by routing exhaust to an onsite combustion unit.

The final PCWP rule does not allow production curtailment to be counted as part of an EAP. As stated in the preamble to the proposed rule (68 FR 1276, January 9, 2003), we do not have facility-wide uncontrolled emissions data and facility-wide controlled emissions data for each PCWP facility to determine the baseline emissions and percent reduction in HAP achieved by each facility. Therefore, the MACT floor is not based on facility-wide emissions and emissions reductions achieved during year ''x.'' Instead, the MACT floor is based on (1) the presence or absence of certain MACT controls (in place as of April 2000) on certain types of process units and (2) test data showing that these controls reduce emissions by greater than or equal to 90 percent. We applied the MACT floor methodology at the process unit level because we had the most accurate data at the process-unit level, making this approach the most technically and legally sound. The PCWP industry is very dynamic, with frequent shutdowns of equipment for maintenance, and occasionally longer shutdowns (*e.g.*, month-long), if demand drops. The final PCWP rule requires emissions from specified process units at impacted PCWP facilities to be reduced by 90 percent, regardless of what the levels of emissions are for those facilities in a particular year. Therefore, implementation of the final PCWP rule at individual PCWP facilities will result in greater emissions reductions in years of greater production and lesser emissions reductions during years of lower production. As mentioned in the response to the previous comment, the emissions averaging provisions must achieve emissions reductions that are greater than or equal to those that would be achieved using the add-on control system compliance options, which specify which process units must be controlled. If we allowed credit for production curtailments, the overall emissions reductions achieved through the emissions averaging provisions would not be equivalent to what would be achieved through the use of the add-on control system compliance options, and therefore, the EAP would not be a MACT-equivalent alternative. For example, if we allowed production curtailments to count toward an emissions average, then a facility that shuts down one of two parallel production lines (each of which includes dryers and a press, plus HAP-emitting equipment that does not have associated control requirements) may not be required to control the emissions from any of the dryers or press on the remaining production line. However, if the same facility opted to comply with the add-on control system compliance options, then it would be required to control the press and dryer emissions from the remaining production line by 90 percent regardless of whether or not the other production line was shut down. In order to maintain equivalency between the emissions averaging provisions and the add-on control system compliance options and to preserve the required HAP emissions reductions, the final PCWP rule does not allow production curtailment to be counted as part of an EAP.

Comment: One commenter objected to the inclusion of the emissions averaging option in the rule primarily because of the lack of a requirement to conduct a hazard or risk study. This commenter asserted that removing a certain mass of HAP regardless of identity is not equivalent to the other compliance options, and when the dose-response and exposure data are examined, it should be obvious that trading one HAP for another to meet a RMR is not an acceptable option. The commenter noted that there are currently no methods for weighting the toxicity of HAP and that the effects of simultaneous exposure to several HAP also are unknown.

Response: We disagree with commenter's assertion that inclusion of the emissions averaging provisions will potentially increase toxic emissions at certain PCWP process units. As stated in the preamble to the proposed rule (68 FR 1289, January 9, 2003), PCWP facilities have fewer pollutants of concern (as compared to HON facilities) and are likely to have similar HAP emissions from the emission points (process units) that would be used to generate debits and credits. The PCWP facilities emit six primary HAP, whereas HON facilities may emit over 140 different HAP. The PCWP facilities choosing to comply through emission averaging must account for the emissions of the six primary HAP (total HAP), which represent greater than 96 percent of the mass of HAP emitted from PCWP process units. Because the MACT control technologies are effective in reducing the emissions of all six of these HAP, and the emissions averaging provisions require the use of add-on control technologies for credit-generating sources in an EAP, we feel that the emissions averaging provisions will achieve a hazard/risk benefit

comparable to what would be achieved through point-by-point compliance. Although the final rule does not require a hazard/risk study, States will still have the discretion to require a PCWP facility that requested approval of an EAP to conduct a hazard/risk study (or could preclude the facility from using emissions averaging altogether).

Comment: Several commenters requested that we write the definitions of some of the variables used in the emissions averaging equations in the final rule to clarify that sources can take credit for emission reductions achieved through partial control of debit-generating process units.

Response: We agree with the commenters' request and have written the definitions of some of the variables used in the emissions averaging equations in today's final rule to clarify that partial credits generated from debit-generating process units that are undercontrolled can be included in the calculation of the AMR. For example, a PCWP facility may decide to control 30 percent of the emissions from a green rotary dryer and 80 percent of the emissions from a blender as part of an EAP in order to achieve a HAP reduction that is the same as or greater than what the facility would have achieved by controlling the green dryer emissions alone by 90 percent. In this example, the green rotary dryer is a debit-generating unit because it has MACT control requirements; however, the green dryer can receive credit in the AMR calculation for any partial emissions reductions that are achieved.

H. Testing and Monitoring Requirements

1. Test Methods

Comment: Several commenters noted that one of the NCASI test methods, NCASI IM/CAN/WP–99.01, has been updated, and requested that the final rule refer to the revised version. One of the commenters provided a revised version of the method, identified as NCASI IM/CAN/WP–99.02. This commenter noted that the trained NCASI sampling team was able to get good consistent results with the original version of the method both in the laboratory and in the field, but that sampling contractors had difficulty obtaining valid results. The commenter maintained that the revised version is easier to understand, includes more details, and reflects the comments of the contractors that have experience with the original method. The commenter also stated that the quality assurance requirements were strengthened in the revised version to ensure good results. Several commenters also noted that NCASI is currently developing a new method for measuring the six HAP (total HAP) listed in the PCWP rule as proposed. Therefore, the commenters requested that we include language in the final rule that would allow PCWP facilities to use future methods once they have been reviewed by EPA and have passed Method 301 validation at a PCWP plant.

Response: We reviewed the revised NCASI method IM/CAN/WP–99.02 supplied by the commenter and agree that the revised method is appropriate for measurement of the six HAP that comprise ''total HAP;'' therefore, we have included NCASI IM/CAN/WP–99.02 in the today's final rule. Regarding the development of future test methods, if and when a new method for measuring HAP from PCWP sources is developed and validated via EPA Method 301, we will issue an amendment to the final rule to include the use of that method as an alternative to the methods included in the final rule for measuring total HAP (*i.e.*, NCASI Method IM/CAN/WP/99.02 and EPA Method 320—Measurement of Vapor Phase Organic and Inorganic Emission by Extractive FTIR). In the meantime, if the new method is validated using Method 301, then the Method 301 results can be used to request approval to use the new method on a site-specific basis.

Comment: Several commenters noted that the tracer gas method for determining capture efficiency, developed by a PCWP company and included in the proposed rule (68 FR 1276, appendix A to 40 CFR part 63), is a work in progress. These commenters included with their comments a copy of field validation tests conducted at a PCWP facility. The commenters noted that future tests are planned using the tracer gas method and that the results of these tests should help EPA improve the use and application of the proposed tracer gas test.

Response: We have reviewed the results of the first field validation test of the tracer gas method and note that the commenters did not provide any specific recommendations for modifying the tracer gas method as it was proposed. Therefore, other than a few minor wording changes, we did not make any substantive changes to the tracer gas method in the final rule. If the results of subsequent field tests demonstrate a need to (further) modify the tracer gas method, we will issue an amendment to the final rule to incorporate the necessary changes.

2. Sampling Locations

Comment: Several commenters recommended that the final rule be reworded to clearly state that inlet sampling should take place at the functional inlet of a control device sequence or at the primary HAP control device inlet. For example, the commenters noted that the final rule needs to clarify that sampling should take place at the inlet of a WESP that precedes an RTO instead of between the two devices. The commenters noted that many WESP–RTO control systems are too closely coupled to allow for a sampling location in between that meets the requirements of Method 1 or 1A, 40 CFR 60, appendix A.

Response: We agree with the commenters and have written the final PCWP rule to indicate that, for HAP-altering controls in sequence, such as a wet control device followed by a thermal oxidizer, sampling sites must be located at the functional inlet of the control sequence (*e.g.*, prior to the wet control device) and at the outlet of the control sequence (*e.g.*, thermal oxidizer outlet) and prior to any releases to the atmosphere. In addition, as discussed previously in this preamble, the final rule also clarifies that facilities demonstrating compliance with a PBCO limit for a process unit equipped with a wet control device must locate the sampling site prior to the wet control device.

3. Testing Under Representative Operating Conditions

Comment: Several commenters objected to the proposed requirement to test process units under representative operating conditions. The commenters argued that, because the initial compliance tests determine the outer limits of compliance, those tests should be conducted at the boundaries of expected performance for the process and control units. These commenters noted that testing at representative conditions would not accurately simulate true operating conditions, and thus, the operating parameter limits would be too narrow. Therefore, the commenters contended that the final rule should specify that initial compliance tests should be conducted at the extremes of the expected operating range for the parameter and control device function. In addition, one of the commenters noted that the testing provisions should also address potential conflicts with traditional State requirements to test at maximum or design conditions.

Response: The proposed rule defined representative operating conditions as

those conditions under which ''the process unit will typically be operating in the future, including use of a representative range of materials[* * *] and representative temperature ranges.'' We disagree that the proposed requirement to test under representative operating conditions will conflict with State requirements and result in operating parameter limits/ranges that are too narrow. We wish to clarify that the definition of representative operating conditions refers to the full range of conditions at which the process unit will be operating in the future. We expect that facilities will test under a variety of conditions, including upper and/or lower bounds, to better define the minimum or maximum operating parameter limit or broaden their operating limit ranges (where applicable). For example, if a facility generally operates a process unit (equipped with an RTO) under conditions that require the RTO to be operated at a minimum temperature of 1450°F to ensure compliance with the standards, but at other times operates that process unit under conditions such that the minimum RTO operating temperature must be 1525°F to ensure compliance, then the facility has two options. One option is for the facility to incorporate both of these operating conditions into their permit such that they are subject to two different operating parameter limits (minimum temperatures), one for each (defined) operating condition. As an alternative, the facility could decide to comply with the parameter limit associated with the worst-case operating conditions (most challenging conditions for the RTO), which in this example would correspond to maintaining a minimum RTO operating temperature of 1525°F, and thus, they could demonstrate continuous compliance regardless of the operating condition as long as they maintained the RTO temperature at or above 1525°F. We have revised the monitoring requirements for process units without control devices to allow these sources to establish a range of compliant parameter values. In addition, those PCWP facilities operating biofilters must maintain their biofilter bed temperature within the range established during the initial performance test and, if available, previous performance tests. If the final PCWP rule required testing at maximum operating conditions, there would be no way for facilities to identify their operating parameter ranges. For these reasons, we maintain that the requirement to test at representative operating conditions is appropriate for the PCWP rule.

4. Process Incineration Monitoring Requirements

Comment: Several commenters expressed approval for the proposed exemption from testing and monitoring requirements for those process units with emissions introduced into the flame zone of an onsite combustion unit with a capacity greater than or equal to 44 megawatts (MW) (150 million Btu/hr). In addition, several of these commenters requested that we expand upon this exemption in the final rule. First, the commenters requested that we extend the exemption to include situations where the process unit exhaust is introduced into the combustion unit with the combustion air. The commenters noted that we had included such exemptions in the HON (40 CFR part 63, subpart G) and in the Pulp and Paper Cluster Rule (40 CFR part 63, subpart S) in recognition of the fact that boilers greater than 44 MW typically had greater than ¾-second residence time, ran hotter than 1,500°F, and usually had destruction efficiencies greater than 98 percent (see 65 FR 3909, January 25, 2000, and 65 FR 80762, December 22, 2000, at § 63.443(d)(4)(ii)). The commenters stated that the design and construction of PCWP boilers follow the same principles that would allow for these operating conditions. Second, the commenters requested that we also exempt smaller combustion units (less than 44 MW, or 150 million Btu/hr) from the testing and monitoring requirements if the process unit exhaust is introduced into the flame zone of the combustion unit. The commenters noted that most of the combustion units associated at PCWP facilities are smaller units and that testing of these units can be complicated by their configuration and integration with other process units.

Response: After reviewing available information on process incineration at PCWP facilities, we decided to include smaller combustion units in the exemption from testing and monitoring requirements if the process exhaust enters into the flame zone. As part of this change, we have included definitions of ''flame zone'' and ''combustion unit'' in the final rule. However, we decided not to include an exemption for PCWP combustion units that introduce the process exhaust with the combustion air. As noted by the commenters, the HON and the final pulp and paper MACT I rule exempt from testing and monitoring requirements combustion devices with heat input capacity greater than or equal to 44 MW. The HON also exempts from testing and monitoring combustion devices with capacity less than 44 MW if the exhaust gas to be controlled enters with the primary fuel. If the exhaust gas to be controlled does not enter with the primary fuel, then testing and continuous monitoring of firebox temperature is required by the HON. Similarly, the final pulp and paper MACT I rule exempts from testing and monitoring requirements combustion devices (including recovery furnaces, lime kilns, boilers, or process heaters) with capacity less than 44 MW if the exhaust stream to be controlled enters into the flame zone or with the primary fuel. Similar to the HON and pulp and paper MACT I rules, the final PCWP rule extends the exemption from testing and monitoring requirements to combustion units with heat input capacity less than 44 MW, provided that the exhaust gas to be treated enters into the combustion unit flame zone. If the exhaust gas enters into the combustion unit flame zone, the required 90 percent control efficiency may be assumed. If the exhaust gas does not enter into the flame zone, then the testing and monitoring requirements for thermal oxidizers will apply.

As noted by the commenter, the HON and the final pulp and paper MACT I rule exempted boilers (and recovery furnaces at pulp and paper mills) with heat input capacity greater than 44 MW from testing and monitoring requirements because performance data showed that these large boilers achieve at least 98 percent combustion of HAP when the emission streams are introduced with the primary fuel, into the flame zone, or with the combustion air. Lime kilns at pulp and paper mills were excluded from this provision because we did not have any data to show that lime kilns can achieve the required destruction efficiency when the HAP emission stream is introduced with the combustion air. Therefore, lime kilns at pulp and paper mills that accept HAP emission streams must introduce the stream into the flame zone or with the primary fuel. We do not have the data to show that the design and construction of large (greater than 44 MW) combustion units at PCWP plants would be similar to boilers found at pulp and paper mills. Furthermore, combustion units at PCWP plants with heat input capacity of greater than 44 MW are less prevalent than smaller (*i.e.*, less than 44 MW) PCWP combustion units, and many of these smaller combustion units are not boilers. As stated above, the final rule exempts these smaller combustion units from the testing and monitoring requirements

provided that the HAP emission stream is introduced into the flame zone. For these reasons, the final PCWP rule does not extend the exemption from testing and monitoring to those boilers greater than 44 MW that introduce the HAP emission stream with the combustion air.

5. Selection of Operating Parameter Limits for Add-On Control Systems

Comment: Several commenters stated that the inlet static pressure to a thermal or catalytic oxidizer is not a reliable indicator of the flow through the oxidizer, the destruction efficiency, or the capture efficiency. The commenters also noted that the preamble to the PCWP rule stated that monitoring the static pressure can indicate to the operator when there is a problem such as plugging. However, the commenters stated that static pressure is usually the last indicator of these types of control device problems. As discussed in the promulgation BID, the commenters agreed that measuring those parameters helps to assess the overall condition of the oxidizer but provided reasons why setting limits on these parameters is inappropriate. The commenters further noted that monitoring the static pressure helps to control the speed of the fan or the oxidizer dampers so that all the air flows are balanced. According to the commenters, static pressure is adjusted to avoid vacuum conditions in the ductwork of multiple-dryer systems treated by one control device when one dryer is shut down, to improve emission collection efficiency and prevent fugitive emissions, and to adjust the pressure drop across a bag filter as it fills with particulates, among other reasons. However, the commenters stated that, if operators are required to keep the static pressure within an operating range, it will limit their ability to maintain capture efficiency. The commenters expressed similar concerns regarding air flow rate monitoring and noted that numerous factors affect the air flow through the control device, including the rate of water removal in dryers, leakage of tramp air into the process, the number of processes operating for control units that receive emissions from multiple production units, and the overall production speed due to process adjustments. The commenters noted that, in those cases where air flow to the oxidizer is not constant, monitoring the air flow through the oxidizer will not be an accurate measure of capture efficiency.

Response: After reviewing the information provided by the commenters, we agree that, while monitoring the static pressure or air flow rate helps to assess the overall condition of the oxidizer and provides an indication that emissions are being captured, setting operating limits on these parameters is not appropriate for the reasons given by the commenters. Therefore, today's final rule does not include the proposed requirement to monitor the static pressure or air flow rate for thermal and catalytic oxidizers.

Comment: Several commenters requested that we modify the procedures for determining the minimum operating temperature (operating limit) for thermal and catalytic oxidizers. The commenters stated that, due to the normal variation in combustion temperatures, a facility will have to perform the initial compliance test at lower-than-normal temperature conditions to ensure that the minimum combustion temperature will be set at a level that they can continuously meet. The commenters requested that we allow facilities to operate the thermal oxidizers up to 50°F lower than the average obtained by the performance test and allow facilities to operate RCO at a level that is 100°F above the minimum operating temperature of the catalyst. The commenters also noted that, when the THC concentration in the inlet is high, the RCO will not need any additional heat and it can operate at temperatures higher than the set point. Therefore, if the initial compliance tests are conducted under these conditions, the operating temperature limit will be too high for production rates at less than full capacity.

Commenters also stated that, for RCO, the thermocouple should be placed in a location to measure the temperature of the gas in the combustion chamber between the catalyst beds instead of in a location to measure the gas stream before it reaches the catalyst bed. The commenters noted that, because the gas flow reverses direction in RCO, the inlet temperature monitor will not consistently measure the gas at the same point in the process such that sometimes the gas temperature will be recorded after the catalyst beds instead of before. The commenters further noted that placement of the monitor inside the combustion chamber would eliminate the need for multiple monitors and avoid problems such as overheating and burnout of the catalyst media caused by the temperature delay between the burner and the RCO inlet.

Response: We disagree with the commenters' request to include a 50°F margin around the minimum operating temperature established during the thermal oxidizer compliance test. In general, selection of the representative operating conditions for both the process and the control device for conducting the performance test is an important, and sometimes complex, task. We maintain that establishing the add-on control device operating limit at the level demonstrated during the performance test is appropriate. We note that the PCWP rule as proposed allows a facility to select the temperature operating limits based on site-specific operating conditions, and the facility is able to consider the need for temperature fluctuations in this selection. The PCWP rule as proposed requires that the operating limit be based on the average of the three minimum temperatures measured during a 3-hour performance test (rather than on the average temperature over the 3-hour period, for example) to accommodate normal variation during operation and ensure that the minimum temperature established represents the lowest of the temperatures measured during the compliant test. For example, during a 3-hour, three-run performance test, the operating limit would be determined by averaging together the lowest 15-minute average temperature measured during each of the three runs. However, continuous compliance with the operating limit is based on a 3-hour block average. For a typical 3-hour set of data, this means that the 3-hour block average will be higher than the average of the three lowest 15-minute averages, so the temperature monitoring provisions already have a built-in compliance margin. In addition, the final rule allows PCWP facilities to conduct multiple performance tests to set the minimum operating temperature for RCO and RTO, so PCWP sources would have the option to conduct their own studies (under a variety of representative operating conditions) in order to establish the minimum operating temperature at a level that they could maintain and that would provide them with an acceptable compliance margin. We feel these provisions allow sufficient flexibility, and an additional tolerance for a 50°F temperature variation is not necessary. Therefore, the final rule does not allow facilities to operate thermal oxidizers 50°F lower than the average temperature during testing.

With regard to RCO, we agree with the commenters that when the THC concentration in the inlet is high, the RCO will not need any additional heat and it can operate at temperatures higher than the set point. Therefore, if the initial compliance tests are conducted under these conditions, the operating temperature limit will be too

high for production rates at less than full capacity. However, the final rule requires emissions testing under representative operating conditions and not maximum operating conditions. In addition, we do not agree with the commenter's solution to set the operating limit at 100°F above the minimum operating (design) temperature of the catalyst. As with RTO, we feel it is incumbent upon the facility to demonstrate performance and establish the operating limits during the compliance demonstration test. Therefore, the final rule requires the facility to establish the minimum catalytic oxidizer operating temperature during the compliance test. However, as noted below, we have provided more flexibility to the facility regarding temperature monitoring for RTO and RCO.

We recognize that in a typical RTO and RCO the combustion chamber contains multiple burners, and that each of these burners may have multiple thermocouples for measuring the temperature associated with that burner. The final rule requires establishing and monitoring a minimum firebox temperature for RTO. In an RTO, the minimum firebox temperature is actually represented by multiple temperature measurements for multiple burners within the combustion chamber. Thus, the final rule clarifies that facilities operating RTO may monitor the temperature in multiple locations within the combustion chamber and calculate the average of the temperature measurements to use in establishing the minimum firebox temperature operating limit.

Regarding RCO, we agree with the commenters that, because the gas flow reverses direction in RCO, the inlet temperature monitor will not consistently measure the gas at the same point in the process, such that sometimes the gas temperature will be recorded after the catalyst beds instead of at the inlet to the beds. We did not intend to require the separate measurement of each inlet temperature by switching the data recording back and forth to coincide with the flow direction into the bed. The intention is to monitor the minimum temperature of the gas entering the catalyst to ensure that the minimum temperature is maintained at the operating level during which compliance was demonstrated. This can be accomplished by measuring the temperature in the regenerative canisters at one or more locations. Measuring the inlet temperatures of each catalyst bed and then determining the average temperature for all catalyst beds is one approach. Even though some of the beds are cooling and others are heating, the average across all of the catalyst beds should not vary significantly. Another acceptable alternative is monitoring the combustion chamber temperature, as suggested by the commenters. The monitoring location(s) selected by the facility may depend on the operating conditions (*i.e.*, THC loading to the unit) during the performance test and how the unit is expected to be operated in the future. The objective is to establish monitoring and operating limits that are representative of the conditions during the compliance demonstration test(s) and representative of the temperature to which the catalyst is exposed. We recognize the need for flexibility in selecting the temperature(s) to be monitored as operating limits for RCO. Therefore, the final rule provides flexibility by allowing facilities with RCO to choose between basing their minimum RCO temperature limit on the average of the inlet temperatures for all catalyst beds or the average temperature within the combustion chamber. If there are multiple thermocouples at the inlet to each catalyst bed, then we would expect facilities to average the measurements from each thermocouple to provide a representative catalyst bed inlet temperature for each individual catalyst bed.

Finally, the final rule also includes an option (in lieu of monitoring oxidizer temperature) for monitoring and maintaining the oxidizer outlet THC concentration at or below the operating limit established during the performance test. Use of the THC monitoring option would eliminate the concerns regarding establishing and monitoring oxidizer operating temperatures (in effect, it provides facilities complete flexibility in operation of the control device, as long as the THC outlet concentration remains below the operating limit).

Comment: One commenter recommended that we require sampling and testing of the catalyst activity level for RCO. The commenter stated that the proposed requirement to monitor inlet pressure may not be sufficient to detect catalyst problems such as poisoning, blinding, or degradation.

Response: We agree with the commenter that a catalyst activity level check is needed because catalyst beds can become poisoned and rendered ineffective. An activity level check can consist of passing an organic compound of known concentration through a sample of the catalyst, measuring the percentage reduction of the compound across the catalyst sample, and comparing that percentage reduction to the percentage reduction for a fresh sample of the same type of catalyst. Generally, the PCWP facility would remove a representative sample of the catalyst from the catalytic oxidizer bed and then ship the sample to a testing company for analysis of its ability to oxidize organic compounds (*e.g.*, by a flame ionization detector).

In response to this comment, we added to the final rule a requirement for facilities with catalytic oxidizers to perform an annual catalyst activity check on a representative sample of the catalyst and to take any necessary corrective action to ensure that the catalyst is performing within its design range. Corrective actions may include washing or baking out the catalytic media, conducting an emissions test to ensure the catalytic media is resulting in the desired emissions reductions, or partial or full media replacement. Catalysts are designed to have an activity range over which they will reduce emissions to the desired levels. Therefore, the final rule specifies that corrective action is needed only when the catalyst activity is outside of this range. It is not our intention for facilities to replace catalyst if the catalytic media is not performing at the maximum level it achieved when the catalyst was new. Also, the final rule specifies that the catalyst activity check must be done on a representative sample of the catalyst to ensure that facilities that may have recently conducted a partial media replacement do not sample only the fresh catalytic media for the catalyst activity check.

Comment: Several commenters stated that the proposed operating requirements for pressure drop across the biofilter bed should be removed from the final PCWP rule. The commenters contended that pressure drop is a good parameter to monitor voluntarily because it indicates the permeability and age of the biofilter bed, helping to determine maintenance and replacement needs; however, it is not an indicator of destruction efficiency. The commenters noted that, because of normal wear and tear, the pressure drop gradually increases over the 2- to 5-year life span of the biofilter, so it would not be possible to maintain a constant operating pressure. The commenters further noted that the supporting materials in the project docket did not provide any information or data that would support the idea that pressure drop is an indication of HAP destruction efficiency, but only indicated that pressure drop was an indication of the age of the biofilter. For these reasons, the commenters argued

that setting an absolute limit on pressure drop was inappropriate.

The commenters also requested that the proposed requirements to monitor the pH of the biofilter bed effluent be removed from the final PCWP rule. The commenters noted that pH is a good parameter to monitor voluntarily because it indicates the environmental conditions inside the biofilter bed and can indicate the presence of organic acids and THC decomposition products, but it is not a reliable indicator of destruction efficiency. According to the commenters, small fluctuations of pH are expected and have little effect on the biofilter performance; therefore, the narrow range of pH values that would be established as an operating range by the initial compliance tests should not be used alone to determine biofilter performance. The commenters also noted some problems associated with continuous measurement of pH. According to the commenters, some biofilter units operate with periodic irrigation of the bed, such that the effluent flow is not constant and continuous monitoring is not possible. The commenters also pointed to an NCASI survey that confirmed that continuous pH monitoring would be impractical for the facilities surveyed. The commenters stated that, because none of the PCWP facilities surveyed could find a link between pH alone and biofilter performance, none of those facilities currently have continuous pH monitors on their biofilters.

In addition, several commenters requested changes to the proposed requirement to monitor the inlet temperature of the biofilter. These commenters agreed that temperature is a parameter that should be monitored for biofilters, but argued that the location of the temperature monitor should be changed from the biofilter inlet to the biofilter bed or biofilter outlet. The commenters noted that the biofilter bed temperature has the greatest impact on biological activity. According to the commenters, the biofilter inlet temperature is not a good indicator of bed temperature and can change very rapidly depending upon the operating rate of the press, the humidity, and the ambient temperature.

Response: We agree with the commenters that increases in pressure drop will occur over time and will not necessarily equate to a reduction in control efficiency, making an absolute limit on pressure drop ineffective in demonstrating continuous compliance. Therefore, we have not included the requirement to monitor pressure drop in the operating requirements for biofilters in the final PCWP rule. We have also removed the requirement to monitor pH from the final rule. Although pH is an indicator of the health of the microbial population inside the biofilter, we agree with the commenters that including continuous pH monitoring as an operating requirement for biofilters may not be appropriate.

We also agree with the commenters that the biofilter bed temperature has the greatest impact on biological activity and that the location for monitoring the biofilter temperature should be changed. We did not propose monitoring of biofilter bed temperature because we thought that monitoring of biofilter inlet temperature would be simpler because only one thermocouple would be required. The temperature inside the biofilter bed can change in different areas of the bed, and therefore, depending on the biofilter, multiple thermocouples may be necessary to get an accurate picture of the temperature conditions inside the biofilter bed. Prior to proposal we rejected the idea of monitoring the biofilter exhaust temperature because temperature measured at this location can be affected by ambient temperature (especially for biofilters with short stacks) more than the temperature inside the biofilter bed. We now conclude that there is no better, more representative way to monitor the temperature to which the biofilter microbial population is exposed than to directly monitor the temperature of the biofilter bed. According to our MACT survey data, most facilities with biofilters are already monitoring biofilter bed temperature. Therefore, the final rule requires continuous monitoring of the temperature inside the biofilter bed.

The proposed rule would have allowed facilities to specify their own monitoring methods, monitoring frequencies, and averaging times for the proposed biofilter operating parameters (*i.e.*, inlet temperature, effluent pH, and pressure drop). However, monitoring of temperature is not as subjective as monitoring biofilter effluent pH and pressure drop; therefore, as an outgrowth of our decision to not require monitoring of biofilter effluent pH and pressure drop, the final rule specifies the monitoring method, frequency, and averaging time for biofilter bed temperature monitoring. The final rule requires that each thermocouple be placed in a representative location and clarifies that multiple thermocouples may be used in different locations within the biofilter bed. The temperature data (*i.e.*, average temperature across all the thermocouples located in the biofilter bed if multiple thermocouples are used) must be monitored continuously and reduced to a 24-hour block average. A 24-hour block average was selected for biofilter temperature monitoring because we recognize that there may be some diurnal variation in temperature. Facilities wishing to reflect a diurnal temperature variation when establishing their biofilter temperature may wish to perform some test runs during peak daily temperatures and other test runs early in the morning, when temperatures are at their lowest.

Facilities may choose to observe parameters other than biofilter bed temperature, but will not be required to record or control them for the final PCWP rule. We feel that many factors can affect biofilter performance, either alone (*e.g.*, a media change) or in concert with one another (*e.g.*, a loss of water flow results in a sharp change in temperature and pH). The factors that have the greatest effect on biofilter performance are likely to be site-specific. However, based on the comments we have received, we conclude that extensive biofilter parameter monitoring is not the best method for ensuring continuous compliance. To promote enforceability of the final PCWP rule, we have added a requirement to perform periodic testing of biofilters. The final rule requires facilities to conduct a repeat test at least every 2 years and within 180 days after a portion of the biofilter bed is replaced with a new type of media or more than 50 percent (by volume) of the biofilter media is replaced with the same type of media. Each repeat test must be conducted within 2 years of the previous test (*e.g.*, 2 years after the initial compliance test, or 2 years after the test following a media change). We are requiring repeat testing after a partial or wholesale change to another media type (considered a modification of the biofilter) because such a modification can impact the performance of the biofilter. Facilities that replace biofilter media with a new type of media (*e.g.,* bark versus synthetic media) must also re-establish the limits of the biofilter bed temperature range. We feel that substantial replacement of the biofilter media (*e.g.*, replacement of more than 50 percent of the media) with the same type of media may affect short-term performance of the biofilter while the replacement media becomes acclimated, and therefore, the final rule requires a repeat performance test following this type of media replacement. However, PCWP facilities that replace biofilter media with the same type of media are not required to re-establish the biofilter

bed temperature range. In the case of same-media replacements, we feel it is appropriate for PCWP facilities to be able to use data from previous performance tests to establish the limits of the temperature range. During repeat testing following replacement with the same type of media, facilities can verify that the biofilter remains within the temperature range established previously or establish a new compliant temperature range. Facilities using a THC CEMS that choose to comply with the THC compliance options (*i.e.*, 90 percent reduction in THC or outlet THC concentration less than or equal to 20 ppmvd) may use the data from their CEMS in lieu of conducting repeat performance testing.

Comment: Several commenters requested that the final rule allow new biofilters a longer period than 180 days to establish operating parameter levels. These commenters suggested a 1-year period, because that would be long enough to observe the full seasonal variation in parameters and find the true operating maxima and minima.

Response: We disagree that more than 180 days is necessary to establish operating parameter limits for biofilters. As mentioned previously, we have eliminated the proposed requirement to establish operating limits for pH and pressure drop. Today's final rule contains two options for biofilter operating parameter limits: biofilter bed temperature range and outlet THC concentration. While allowing 1 year to establish the biofilter bed temperature operating range is reasonable due to seasonal temperature variations, 1 year is not necessary for establishing an outlet THC concentration limit. Furthermore, the final rule already allows facilities to expand their operating ranges (see § 63.2262(m)(3)) through additional emissions testing.

The compliance date for existing facilities is 3 years after promulgation of the final PCWP rule, and existing facilities are allowed 180 days following the compliance date to conduct performance testing and establish the operating parameter limits. If there is concern that 180 days is not long enough for a new biofilter installation to operate under the full range of biofilter bed temperatures, then existing facilities should begin operation of their biofilter well before the compliance date (*e.g.*, 180 days prior to the compliance date if 1 year is needed). Facilities also have the option of testing their biofilter prior to the compliance date to establish one extreme of their biofilter bed temperature range. The compliance date for new PCWP facilities is the effective date of the rule (if startup is before the effective date) or upon initial startup (if the initial startup is after the effective date of the rule), and biofilters installed at new PCWP facilities would have up to 180 days following the compliance date to establish the operating parameter limits. To address situations where a new biofilter is installed at an existing facility more than 180 days after the compliance date (*e.g.*, to replace an existing RTO), we have included section § 63.2262(m)(2) to the final PCWP rule, which allows existing sources that install new biofilters up to 180 days following the initial startup date of the biofilter to establish the operating parameter limits. Thus, new biofilter installations are given time for establishment of operating parameter limits regardless of where they are installed at new or existing sources.

Comment: Multiple commenters supported the option to continuously monitor THC at control device outlets to demonstrate compliance, but suggested that either the procedure for determining the operating limits or the length of the averaging periods be altered. The commenters stated that THC concentration at a control device outlet is not a parameter that can be easily adjusted by operators over short periods of time. The commenters stated that 3 hours is not a long enough block to avoid deviations from compliance given the variability of the process. The commenters provided an analysis of THC data from a biofilter outlet that showed multiple deviations occurring over a two month period when a 3-hour block average was used and few to zero deviations when a 24-hour or 7-day block average was used for the operating limits. The commenters stated that because HAP destruction efficiency of biofilters does not vary much with time, the longer block average would not be environmentally harmful.

Response: While THC emissions at the outlet of a biofilter may vary, the THC emissions at the outlet of a thermal or catalytic oxidizer should not vary greatly. Although, as stated by the commenters, the HAP destruction efficiency of biofilters is not subject to large short-term variations, the same is not true for thermal and catalytic oxidizers (*e.g.*, a sudden significant decrease in temperature could result in a sudden decrease in HAP reduction). Therefore, we feel it is appropriate to maintain the 3-hour block averaging requirement for THC monitoring for thermal and catalytic oxidizers. However, we have expanded the THC averaging requirement for biofilters to a 24-hour block average to provide more flexibility. The THC operating limit for biofilters would be established as the maximum of three 15-minute recorded readings during emissions testing. We also note the continuous monitoring of THC is not required for all APCD, but is an alternative to continuous monitoring of temperature. Furthermore, facilities can conduct multiple performance tests at different operating conditions to increase their maximum THC concentration operating limit.

6. Selection of Monitoring Requirements for Uncontrolled Process Units

Comment: Several commenters recommended that we change the title of proposed § 63.2262(n) (How do I conduct performance tests and establish operating requirements?—Establishing uncontrolled process unit operating requirements) to ''Establishing operating requirements for production-based compliance option process units'' for the final rule. The commenters stated that the proposed title implied that no controls of any kind are being applied to these process units, when in fact facilities may be using P2 techniques to reduce emissions. The commenters also objected to wording within the proposed section that suggests that temperature is the only parameter affecting HAP emissions from the process units. The commenters suggested that the requirements be revised in the final rule to give sources more flexibility in identifying and documenting those process unit operating parameters that are critical to maintaining compliance with the PBCO limits.

Response: At proposal, our intention was to establish operating requirements for those process units complying with rule requirements without the use of an APCD. There are two situations in the PCWP rule as proposed where process units may not have an add-on control device: (1) When process units meet the PBCO, or (2) when process units used to generate emissions averaging debits do not have an add-on APCD that partially controls emissions. To clarify this for the final rule and to address the commenters' concern regarding applicability of § 63.2262(n), we changed the title of the section to ''Establishing operating requirements for process units meeting compliance options without a control device.''

We agree with the commenters that temperature alone is not necessarily the sole factor affecting HAP emissions from some process units. A variety of factors can affect HAP emissions, and the controlling parameter for one process unit may be different than the controlling parameter for another process unit. Therefore, the final rule

gives sources more flexibility in selecting and establishing operating limits for process units without add-on controls. The final rule requires facilities to identify and document the operating parameter(s) that affect HAP emissions from the process unit and to establish appropriate monitoring methods and monitoring frequencies. We recognize that it is not practical to continuously monitor every process-unit-specific factor that could affect uncontrolled emissions (*e.g.*, there is no way to monitor and determine a 3-hour block average of wood species mix for a particleboard plant). However, some parameters are suitable for continuous monitoring (*e.g.*, process operating temperature, furnish moisture content) and are already monitored as part of normal operation but not for compliance purposes. We feel that daily records of most parameters would be sufficient to ensure ongoing compliance (*e.g.*, daily average process operating temperature, furnish moisture, resin type, wood species mix) if the parameters do not deviate from the ranges for these parameters during the initial compliance test. Therefore, in the final PCWP rule, we have replaced the proposed 3-hour block average temperature monitoring requirements for process units without control devices with a requirement to maintain, on a daily basis, the process unit operating parameter(s) within the ranges established during the performance test. This gives facilities the flexibility to decide which parameters they will monitor and control, while providing enforcement personnel with records that can be used to assess and compare the day-to-day operation of the process unit to the controlling operating parameters. Facilities are also allowed to decide for each parameter the appropriate monitoring methods, monitoring frequencies, and averaging times (not to exceed 24 hours for continuously monitored parameters such as temperature and wood furnish moisture). Also, to ensure that the HAP emissions measured during the compliance tests are representative of actual emissions, the final rule requires testing at representative operating conditions, as defined in the rule.

7. Data Collection and Handling

Comment: Several commenters requested clarifications and changes to the proposed requirements related to data collection and handling for CPMS. The commenters stated that the requirement that a valid hour of data must include at least three equally spaced data values for that hour is ambiguous and should be revised. The commenters recommended that the final rule require facilities to average at least three data points taken at constant intervals, provided the interval is less than or equal to 15 minutes. The commenters further noted that a better approach would be to drop the concept of an hourly average altogether and simply calculate the block average as the average of all evenly spaced measurements in the block period with a maximum measurement interval of 15 minutes. The commenters also noted that the proposed rule did not specify how to calculate the 3-hour block average when one or more of the individual hours does not contain at least three valid data values.

Commenters also requested that the final rule consolidate and clarify the requirements in proposed §§ 63.2268 and 63.2270 regarding data that should be excluded from block averages. The commenters recommended that the final rule explicitly state that any monitoring data taken during periods when emission control equipment are not accepting emissions from the production processes should be excluded from hourly or block averages. The commenters also noted inconsistencies in the proposed rule language that seemed to imply that data collected during production downtime and SSM events would be included in the hourly averages but not in the block averages. The commenters stated that, because SSM events occur when the process is not in operation, there is no need to collect data from these periods.

Response: We agree with the commenters that the proposed rule language regarding acceptable data and data averaging was somewhat ambiguous and have revised the language accordingly. Following the commenters' recommendation, we removed the concept of an hourly average from the final rule to allow block averages to be calculated as the average of all evenly spaced measurements in the 3-hour or 24-hour block period with a maximum measurement interval of 15 minutes. In place of the requirement for a valid hourly average to contain at least three equally spaced data values for that hour, we added a minimum data availability requirement. The minimum data availability requirement specifies that to calculate data averages for each 3-hour or 24-hour averaging period, you must have at least 75 percent of the required recorded readings for that period using only recorded readings that are based on valid data. The minimum data availability requirement appears in § 63.2270(f) of today's final rule. To clarify what constitutes valid data and how to calculate block averages, we rearranged proposed §§ 63.2268 and 63.2270. We moved proposed § 63.2268(a)(3) and (4) to final § 63.2270 (now § 63.2270(d) and (e)) of today's final rule. Rather than repeating which data should be excluded from data averages in § 63.2270(d) and (e), these new sections now refer to § 63.2270(b) and (c) when discussing data that should not be included in data averages. We also added data recorded during periods of SSM to the list of data that should be excluded from data averages in § 63.2270. We feel these changes to the structure and wording of the rule should fully address the commenters' concerns.

Comment: Several commenters noted that the proposed PCWP rule does not provide any alternatives to the definition of a 1-hour period found in the MACT general provisions (40 CFR 63.2), which states that a 1-hour period is any 60-minute period commencing on the hour. These commenters requested that facilities be given the option of beginning a 1-hour period at a time that is convenient depending on shift changes, employee duties at the end of a shift, and settings on the systems that record data.

Response: We agree with the commenters and have included a definition of 1-hour period in today's final rule that omits the phrase ''commencing on the hour.''

8. Performance Specifications for CPMS

Comment: Several commenters requested that we write sections of the final rule language that address temperature measurement. The commenters stated that the phrase ''minimum tolerance of 0.75 percent,'' found in proposed sections 63.2268(b)(2), 63.2268(c)(3), and 63.2268(e)(2), should be revised to read ''accurate within 0.75 percent of sensor range.'' The commenters argued that, because tolerances usually refer to physical dimensions, this revision more accurately reflects the intent of the final PCWP rule. Commenters also recommended that the sensitivity for chart recorders be changed from a sensitivity in the minor division of at least 20°F to minor divisions of not more than 20°F. The commenters noted that the wording in the proposed rule means that minor divisions could be 30°F or 50°F, but assumed that we probably meant that 20°F is the largest minor division that a facility can use, and therefore, stated that the suggested revision is more accurate.

Response: We agree that the proposed temperature measurement requirements should be clarified. In today's final rule,

we wrote the requirement in § 63.2269(b)(2) (formerly proposed § 63.2268(b)(2)) to read ''minimum accuracy of 0.75 percent of the temperature value.'' We eliminated proposed sections §§ 63.2268(c) and 63.2268(e) from the final rule because we removed the requirements for monitoring of pressure or flow. We also wrote proposed § 63.2268(b)(3) to state that ''If a chart recorder is used, it must have a sensitivity with minor divisions of not more than 20°F.''

Comment: Several commenters requested changes to the proposed work practice requirements for dry rotary dryers and veneer redryers related to moisture monitoring. The commenters noted that the proposed requirement to use a moisture monitor with a minimum accuracy of 1 percent was appropriate for rotary dry dryers in the 25 to 35 percent moisture content range. However, the commenters stated that less stringent accuracy requirements should be included for veneer redryers to better correspond with current practices at softwood plywood and veneer facilities. Specifically, the commenters requested that the final rule revise the proposed performance specifications for moisture monitors for veneer redryers to allow the use of monitors with an accuracy of ±3 percent in the 15 to 25 percent moisture range. Several commenters also requested that the proposed calibration procedures for moisture monitors be revised in the final rule to eliminate grab sampling and to allow facilities to follow the calibration procedures recommended by the manufacturer. The commenters argued that the proposed grab sampling procedure is impractical and that obtaining a representative grab sample would be difficult.

Response: We agree with the commenters that the proposed moisture monitoring requirements should be adjusted in the final rule and have made the requested changes to the accuracy requirements for moisture monitors used with rotary dry dryers and veneer redryers. We have also adjusted the calibration procedures in the final rule to eliminate grab sampling and to allow facilities to follow the manufacturer's recommended calibration procedures for moisture monitors.

I. Routine Control Device Maintenance Exemption (RCDME)

Comment: Several commenters requested that the proposed requirements for the RCDME be modified in the final rule to give PCWP facilities more flexibility. First, the commenters requested that the proposed RCDME allowances (expressed as a percentage of the process unit operating hours) be increased. The commenters argued that the proposed downtime allowance periods are too short to allow for proper maintenance. The commenters noted that the NCASI survey that was used to set the downtime allowance only included data from 1999, and many facilities may have conducted nonannual maintenance and repairs in the years preceding or following that year. According to the commenters, the 1999 survey was also limited in that the majority of the RTO included in the survey were less than 5 years old, and as the equipment ages over a lifetime of 5 to 15 years, performance will degrade below the levels seen in the 1999 survey. Therefore, the commenters suggested that we reexamine the NCASI downtime data and use the 79th percentile instead of the 50th percentile to select downtime allowances that represent the time needed for nonannual events.

Response: After reviewing our previous analysis of the downtime data, we maintain that the percentage downtime we proposed (3 percent for some process units and 0.5 percent for others) calculated on an annual basis is appropriate for the final PCWP rule. The downtime allowance allowed under the RCDME is intended to allow facilities limited time to perform routine maintenance on their APCD without shutting down the process units being controlled by the APCD. We included the downtime allowance in the proposed rule because we recognize that frequent maintenance must be performed to combat particulate and salt buildup in some RTO and RCO for PCWP drying processes. The downtime allowance is not intended to cover every APCD maintenance activity, only those maintenance activities that are routine (*e.g.*, bakeouts, washouts, partial or full media replacements) and do not coincide with process unit shutdowns. Most APCD maintenance should occur during process unit shutdowns; the RCDME is a downtime allowance in addition to the APCD maintenance downtime that occurs during process unit shutdowns. We note that most PCWP plants do not operate 8,760 hours per year without shutdowns. For example, the MACT survey responses indicate that softwood plywood plants operate for an average 7,540 hours per year, which would allow 1,220 hours for control device maintenance without the RCDME. Furthermore, the RCDME is allowed in addition to APCD downtime associated with SSM events covered by the SSM plan (*e.g.*, electrical problems, mechanical problems, utility supply problems, and pre-filter upsets). For these reasons, the final rule retains the RCDME allowances included in the proposed rule.

Comment: Several commenters objected to the proposed requirement that the maintenance be scheduled at the beginning of the semiannual period. The commenters argued that scheduling maintenance activities at the beginning of each semiannual period is neither consistent with industry practice nor practical. The commenters noted that downtime for maintenance is scheduled as the need arises, and downtime schedules change with need and production requirements. The commenters stated that most facilities have a general idea of when they intend to conduct routine maintenance activities and will schedule those activities whenever possible to coincide with process downtime as it approaches. The commenters further noted that the proposed PCWP rule does not clarify what would happen if maintenance were necessary before the scheduled date. Therefore, the commenters concluded that deleting the requirement to set the maintenance schedule at the beginning of each semiannual period would eliminate confusion and better represent industry practice.

Response: We agree with the commenters and have removed the requirement to record the control device maintenance schedule for the semiannual period from the final rule. We agree that the proposed requirement would be impractical because process unit shutdowns are not scheduled semiannually. Also, the SSM provisions do not require scheduling of maintenance, and therefore, requiring scheduling of routine maintenance covered under the RCDME would be more restrictive than the requirements for SSM. To the extent possible, APCD maintenance should be scheduled at the same time as process unit shutdowns. Thus, today's final rule retains the requirement that startup and shutdown of emission control systems must be scheduled during times when process equipment is also shut down.

Comment: Commenters also requested that the proposed RCDME requirement that facilities must minimize emissions to the greatest extent possible during maintenance periods be revised to require that facilities make reasonable efforts to minimize emissions during maintenance. The commenters stated that this revision is necessary because the proposed wording could be interpreted to mean that sources should limit production or shut down entirely

during maintenance periods, which is contrary to the intent of the RCDME.

Response: We agree with the commenters and have modified the referenced requirement as suggested by the commenters.

J. Startup, Shutdown, and Malfunction (SSM)

Comment: Several commenters noted inconsistencies between the proposed rule and the NESHAP General Provisions (40 CFR part 63, subpart A) and requested that these inconsistencies be resolved by making the final PCWP rule consistent with the latest version of the General Provisions.

Response: Approximately 1 month prior to publication of the proposed PCWP rule, we published proposed amendments to the NESHAP General Provisions concerning SSM procedures (67 FR 72875, December 9, 2002) and promulgated them in May 2003 (68 FR 32585, May 30, 2003). Due to the timing of the these rulemakings, the proposed PCWP rule language did not reflect our most recent decisions regarding SSM. To avoid confusion and promote consistency, we have written the final rule to reference the NESHAP General Provisions directly, where applicable, and to be more consistent with other recently promulgated MACT standards. Although the amendments to the NESHAP General Provisions regarding SSM plans are currently involved in litigation, the rule requirements promulgated on May 30, 2003, apply to the final PCWP NESHAP unless and until we promulgate another revision. In response to suggestions made by commenters, we also consolidated several sections to clarify the requirements related to SSM and to eliminate redundancies in the final rule. Specifically, we combined proposed § 63.2250(d) with proposed § 63.2250(a) and revised the resulting § 63.2250(a) to clarify that the SSM periods mentioned in proposed § 63.2250(a) apply to both process units and control devices and to clarify when the compliance options, operating requirements, and work practice requirements do and do not apply. We also removed proposed § 63.2250(e) from the final rule because it was a duplication of proposed § 63.2251(e) regarding control device maintenance schedules. In addition, we removed proposed § 63.2250(f) related to RCO catalyst maintenance because this section was misplaced and is not consistent with the RCO monitoring requirements in today's final rule.

K. Risk-Based Approaches

1. General Comments

Risk-Based Approaches

Comment: Numerous commenters encouraged EPA to incorporate risk-based options which would exclude facilities that pose no significant risk to public health or the environment. Commenters stated that inclusion of risk provisions has the potential to achieve overall environmentally superior results in a cost-effective manner, particularly in cases where criteria pollutants from control devices (*i.e.*, incinerators) may result in greater impacts that the HAP emissions that they control. In particular, the commenter referred to EPA's projection that adoption of MACT floor level controls would result in increased emissions of NO_X, a precursor to ozone and PM. According to the commenter, the proposed rule (without risk provisions) would work against the industry's voluntary commitment to reduce the emissions of greenhouse gases by 12 percent over the next 10 years. The commenter concluded that, in its proposed form, the rule would impose significant additional cost with virtually no gain to either the environment or the health. The commenter stated that facilities wishing to take advantage of the risk-based exemption would take a federally-enforceable permit limit that would guarantee that their emissions remain below the risk-based emission standard. This would constitute an emission limitation, within the statutory definition of the term, and it would allow facilities to forego the installation of incinerators where they are not warranted by public health and environmental considerations, the commenter claimed.

Some commenters argued that the risk-based options are legally justified, protective of human health and the environment, and economically sensible. These commenters stated that the risk-based options are supported under the CAA, through EPA's authority under sections 112(d)(4) and 112(c)(9) to set emission standards other than MACT for certain low-risk facilities and delist technology-defined low-risk subcategories, respectively, and through what they claimed is EPA's inherent *de minimis* authority to avoid undertaking regulatory action in the absence of meaningful risk. One commenter pointed out that, by meeting the stringent health benchmarks necessary to qualify for the risk-based compliance approaches, facilities already would have satisfied the residual risk provisions 8 years ahead of the statutory requirements set forth in section 112(f) of the CAA.

Two commenters believed that the risk-based approach would particularly benefit small mills located in rural areas with timber-dependent economies. One commenter stated that, by offering manufacturers an opportunity to apply for subcategorization on a site-specific basis, facilities that are remotely located, or which were originally planned and sited with thorough consideration of airshed impacts, would not be unduly burdened with MACT requirements which yield little or no public health benefits.

Some commenters argued that such low-risk facilities should not be burdened with the requirements of MACT. One commenter noted that the regulatory framework exists within their State to implement a risk-based approach. Another commenter agreed with the concept of a risk-based approach but stated that it would not be appropriate for State and local programs to determine which facilities should be exempted from MACT. Another commenter suggested that exemptions be provided on a case-by-case basis to individual facilities that are able to demonstrate that they pose no significant risk to public health or the environment.

Several commenters opposed the risk-based exemptions. Two commenters stated that the use of risk-based concepts to evade MACT applicability is contrary to the intent of the CAA and is based on a flawed interpretation of section 112(d)(4) written by an industry subject to regulation. One commenter added that the CAA requires a technology-based floor level of control and does not provide exclusions for risk or secondary impacts in applying the MACT floor. The other commenter was concerned about industry's unprecedented proposal to include *de minimis* exemptions and cost in the MACT standard process. The commenter stated that including case-by-case risk-based exemptions would jeopardize the effectiveness of the national air toxics program to adequately protect public health and the environment and to establish a level playing field. A third commenter noted that subcategorization and source category deletions under CAA section 112(c) have been implemented several times since the MACT program began.

Some commenters pointed out that they have not been able to comment on the technical merit of the risk analysis employed by the EPA. They argued that, until the residual risk analysis procedures have been implemented via the CAA section 112(f) process, risk

analysis should not be used in making MACT determinations pursuant to CAA section 112(d)(4). Also, risk analysis could never be used to establish a MACT floor.

One commenter pointed out that, in separate rulemakings and lawsuits, EPA adopted legal positions and policies that they claimed refute and contradict the very risk-based and cost-based approaches contained in the proposal. In these other arenas, EPA properly rejected risk assessment to alter the establishment of MACT standards. The EPA also properly rejected cost in determining MACT floors and in denying a basis for avoiding the MACT floor.

Response: We feel that the assertions by one commenter about the environmental disbenefits of the PCWP rule as proposed are overstated. We disagree that the PCWP industry as a whole poses a small-to-insignificant risk to human health and the environment. However, we acknowledge that there are some PCWP affected sources that pose little risk to human health and the environment. Consequently, we have included an option in today's final PCWP rule that would allow individual affected sources to be found eligible for membership in a delisted low-risk subcategory if they demonstrate that they do not pose a significant risk to human health or the environment. The low-risk subcategory delisting in today's final PCWP rule is based on our authority under CAA sections 112(c)(1) and (9). The statute requires that categories or subcategories meet specific risk criteria in order to be delisted. To determine whether source categories and subcategories, and their constituent sources, meet these criteria, risk analyses may be used. We disagree with the commenter that we must wait for implementation of CAA section 112(f) before utilizing risk analysis in this manner. Section 112(d)(1) of the CAA gives us the authority to distinguish among classes, types, and sizes of sources within a category, and CAA section 112(c)(1) does not restrict our authority to base categories and subcategories on other appropriate criteria. As discussed in more detail elsewhere in this notice, we feel these provisions of the CAA allow us to define a subcategory of sources in terms of risk. Thus, the low-risk subcategory of PCWP affected sources is defined in terms of risk, not cost. We are not subcategorizing or determining MACT floors based on cost. Furthermore, because most affected sources will make their low-risk demonstrations following promulgation of today's final PCWP rule, the MACT level of emissions reduction required by today's final rule is not affected by affected sources becoming part of the low-risk subcategory.

We are not pursuing the risk-based exemptions based on CAA section 112(d)(4). We do not feel that a risk-based approach based on section 112(d)(4) is appropriate for the PCWP industry because PCWP facilities emit HAP for which no health thresholds have been established and because the legislative history of the 1990 Amendments to the CAA indicates that Congress considered and rejected allowing us to grant such source-specific exemptions from the MACT floor. We also are not relying on *de minimis* authority. Legal issues associated with the risk-based provisions are addressed elsewhere in this preamble.

In today's final PCWP rule, we are identifying the criteria we will use to identify low-risk PCWP affected sources and requesting that any candidate affected sources, in addition to the affected sources already identified as low risk in today's action, submit information to us based on those criteria so that we can evaluate whether they might be low-risk. Today's final PCWP rule also establishes a low-risk PCWP subcategory based on the criteria (and including several identified affected sources) and delists the subcategory based on our finding that no source that would be eligible to be included in the subcategory based on our adopted criteria emits HAP at levels that exceed the thresholds specified in section 112(c)(9)(B) of the CAA. To be found eligible to be included in the delisted source category, affected sources will have to demonstrate to us that they meet the criteria established by today's final PCWP rule and assume federally enforceable limitations that ensure their HAP emissions do not subsequently increase to exceed levels reflected in their eligibility demonstrations.

The criteria defining the low-risk subcategory of PCWP affected sources are included in appendix B to subpart DDDD of 40 CFR part 63. The criteria in the appendix were developed for and apply only to the PCWP industry and are not applicable to other industries. Today's final PCWP rule provides two ways that an affected source may demonstrate that it is part of the low-risk subcategory of PCWP affected sources. First, look-up tables allow affected sources to determine, using a limited number of site-specific input parameters, whether emissions from their sources might cause a hazard index (HI) limit for noncarcinogens or a cancer benchmark of one in a million to be exceeded. Second, a site-specific modeling approach can be used by those affected sources that cannot demonstrate that they are part of the low-risk subcategory using the look-up tables.

The low-risk subcategory delisting that is included in today's final PCWP rule is intended to avoid imposing unnecessary controls on affected sources that pose little risk to human health or the environment. Facilities will have to select controls or other methods of limiting risk and then demonstrate, using appendix B to subpart DDDD of 40 CFR part 63 and other analytical tools, such as the ''Air Toxics Risk Assessment Reference Library,'' if appropriate in a source's case, that their emissions qualify them to be included in the low-risk subcategory, and, therefore, to not be subject to the MACT compliance options included in today's final PCWP rule.

Comment: Several commenters objected to EPA using the preambles of individual rule proposals as the forum for introducing significant changes in the way that MACT standards are established. The commenter believed that allowing risk-based exemptions requires statutory changes. A third commenter expressed concern that other parties may miss commenting on the risk-based exemptions because they are contained within six separate proposals. The commenter added that to give the issue full consideration, the risk provisions should not be adopted within any of the final rules but should be addressed in one place, such as in revisions to the General Provisions of 40 CFR part 63, subpart A.

Response: The discussion of risk-based provisions in MACT was included in individual proposals for several reasons. First, we recognize that such provisions might only be appropriate for certain source categories, and our decision-making process required source category-specific input from stakeholders. Second, the 10-year MACT standards, which are now being completed, are the last group of MACT standards currently planned for development, and for any risk provisions to be useful, the provisions must be finalized in a timely manner. We do not agree that statutory changes are necessary because of the discretion provided to the Administrator under CAA section 112(d)(1) to distinguish among classes, types, and sizes of sources within a category and under CAA section 112(c)(1) to base categories and subcategories on any appropriate criteria. We consider low-risk affected

sources to be an appropriate subcategory of sources within the PCWP source category.

Comment: Several commenters stated that the risk-based exemption proposal removes the level playing field that would result from the proper implementation of technology-based MACT standards. According to the commenters, establishing a baseline level of control is essential to prevent industry from moving to areas of the country that have the least stringent air toxics programs, which was one of the primary goals of developing a uniform national air toxics program under section 112 of the 1990 CAA amendments. The commenters argued that risk-based approaches would jeopardize future reductions of HAP in a uniform and consistent manner across the nation. One commenter stated that National Air Toxics Assessment (NATA) data show that virtually no area of the country has escaped measurable concentrations of toxic air pollution. The NATA information indicates that exposure to air toxics is high in both densely populated and remote rural areas.

One commenter disagreed with the assertion that the level playing field would be removed. The commenter pointed out that the argument that EPA should impose unnecessary and potentially environmentally damaging controls for the sole purpose of equalizing control costs across facilities would be at odds with the stated purpose of the CAA. According to the commenter, the claim that the risk-based approach would favor facilities located away from population centers is incorrect. As contemplated, the risk-based approaches to the NESHAP would be keyed to the comparison of health benchmarks with reasonable maximum chronic and acute exposures. According to the commenter, the presence or absence of human populations would have no effect on whether facilities would qualify.

Response: We agree that one of the primary goals of developing a uniform national air toxics program under section 112 of the 1990 CAA amendments was to establish a level playing field. We do not feel that defining a low-risk subcategory in today's final PCWP rule does anything to remove the level playing field for PCWP facilities. Today's final PCWP rule and its criteria for demonstrating eligibility for the delisted low-risk subcategory apply uniformly to all PCWP facilities across the nation. Today's final PCWP rule establishes a baseline level of emission reduction or a baseline level of risk (for the low-risk subcategory). All PCWP affected sources are subject to these same baseline levels, and all facilities have the same opportunity to demonstrate that they are part of the delisted low-risk subcategory. The criteria for the low-risk subcategory are not dependent on local air toxics programs. Therefore, concerns regarding facilities moving to areas of the country with less-stringent air toxics programs should be alleviated.

Although NATA may show measurable concentrations of toxic air pollution across the country, these data do not suggest that PCWP facilities that do not contribute to the high exposures and risk should be included in MACT regulations, notwithstanding our authority under CAA section 112(c)(9).

Comment: One commenter stated that the dockets for the MACT proposals that contain the risk approaches make it clear that the White House Office of Management and Budget (OMB) and industry were the driving forces behind the appearance of these unlawful approaches in EPA's proposals. The commenter condemned the industry-driven agenda that it claimed is being promoted by the White House OMB.

A second commenter stated that the accusations that EPA succumbed to industry lobbying and internal pressures are entirely unfounded.

Response: We are required by Executive Order 12866 to submit to OMB for review all proposed and final rulemaking packages that would have an annual effect on the economy of $100 million or more. The comments we received from OMB reflect their position that low-risk facilities do not warrant regulation. However, the commenter is incorrect in implying that we have not exercised our independent judgment in addressing these issues. Our rationale for adopting the risk-based approach in this PCWP rulemaking is that such an approach is fully authorized under the CAA. This rule reflects the EPA Administrator's appropriate use of discretion to use CAA section 112(c)(9) to delist a low-risk subcategory.

Effects on MACT Program

Comment: Several commenters expressed concern about the impact of a risk-based approach on the MACT program. Some commenters stated that the proposal to include risk-based exemptions is contrary to the 1990 CAA Amendments, which calls for MACT standards based on technology rather than risk as a first step. The commenters pointed out that Congress incorporated the residual risk program under CAA section 112(f) to follow the MACT standards, not to replace them. One commenter added that risk-based approaches would be used separately to augment and improve technology-based standards that do not adequately provide protection to the public.

Another commenter believed that CAA section 112(d)(4) and the regulatory precedent established in over 80 MACT standards reject the inclusion of risk in the first phase of the MACT standards process. The commenter argued that the use of risk assessment at this stage of the MACT program is, in fact, directly opposed to title III of the CAA.

Response: We disagree that inclusion of a low-risk subcategory in today's final PCWP rule is contrary to the 1990 CAA Amendments. The PCWP MACT rule is a technology-based standard developed using the procedures dictated by section 112 of the CAA. The only difference between today's final PCWP rule and other MACT rules is that we used our discretion under CAA sections 112(c)(1) and (9) to subcategorize and delist low-risk affected sources, in addition to fulfilling our duties under CAA section 112(d) to set MACT. The CAA requires that categories or subcategories meet specific risk criteria, and to determine this, risk analyses may be used. We disagree with the commenter that we must wait for implementation of CAA section 112(f) before utilizing risk analysis in this manner. We feel that today's final PCWP rule is particularly well-suited for a risk-based option because of the specific pollutants that are emitted by PCWP sources. For many affected sources, the pollutants are emitted in amounts that pose little risk to the surrounding population. However, the cost of controlling these pollutants is high, and may not be justified by environmental benefits for these low-risk affected sources. Only those PCWP affected sources that demonstrate that they are low risk are eligible for inclusion in the delisted low-risk subcategory. The criteria included in today's final PCWP rule defining the delisted low-risk subcategory are based on sufficient information to develop health-protective estimates of risk and will provide ample protection of human health and the environment.

Inclusion of a low-risk subcategory in today's final PCWP rule does not alter the MACT program or affect the schedule for promulgation of the remaining MACT standards. We recognize that such provisions are only appropriate for certain source categories, and our decision-making process required source category-specific input from stakeholders. The 10-year MACT standards, which are now being completed, are the last group

of MACT standards currently planned for development, and for any risk provisions to be useful, the provisions must be finalized in a timely manner.

Comment: Several commenters stated that the inclusion of a risk-based approach would delay the MACT program and/or promulgation of the PCWP MACT standard. If the proposed approaches are inserted into upcoming standards, the commenters feared the MACT program (which is already far behind schedule) would be further delayed.

One commenter stated that they were strongly opposed to returning to the morass of risk-based analysis in an attempt to preempt the application of technology-based MACT standards and exempt facilities. The commenter stated that designing a risk-based analysis procedure would also take significant resources, as evidenced by the fact that it took five plus pages in the **Federal Register** to discuss just the basic issues to be considered in the analysis. The commenter indicated that the demand on government resources could cause a delay in the application of MACT nationwide. The commenter stated that EPA should also consider the issue of fairness since the rest of the industrial sector whose NESHAP have already been promulgated did not have a risk-based option.

Another commenter stated that it is evident that the proposed risk-based exemptions would require extensive debate and review in order to launch, which would further delay promulgation of the remaining MACT standards. The commenter stated that delays could be exacerbated by litigation following legal challenges to the rules, and such delays would trigger the CAA section 112(j) MACT hammer provision, which would unnecessarily burden the State and local agencies and the industries. The commenter concluded that, obviously, further delay is unacceptable. Another commenter agreed, stating that it is imperative that EPA meet the new deadlines for promulgating the final MACT standards.

Two commenters stated that EPA's proposal to improperly incorporate risk assessment into the technology-based standard process would cripple a MACT program already in disarray. The commenters argued that the risk-based approach could exacerbate the delay in HAP emissions reductions required by CAA section 112. One commenter noted that EPA's Office of Inspector General recently found that EPA is nearly 2 years behind in fulfilling its statutory responsibilities for implementing Phase 1 MACT standards. According to the commenter, this delay potentially harms the public and environment. The inclusion of risk-based exemptions in 10-year MACT standards would only further delay this process. The other commenter noted that EPA lacks adequate emissions and exposure data, source characterization data, and health and ecological effects information to conduct this process anyway. This commenter believed that the air toxics program is flawed and failing to protect public health and the environment and argued that it was irresponsible for EPA to pursue a deregulatory agenda that would further weaken the effectiveness of the air toxics program. The commenter noted that EPA acknowledged the complexity and delays associated with the proposed risk-based approaches in deciding not to adopt the approaches in the final BSCP rule.

Response: We disagree that identification and delisting of a low-risk subcategory in today's final PCWP rule will alter the MACT program or affect the schedule for promulgation of the remaining MACT standards, especially the PCWP MACT rule. In fact, it has not caused such a delay for the final rule. We do not anticipate any further delays in completing the remaining MACT standards. The delisting of a low-risk subcategory in today's final PCWP rule affects only the PCWP rule, and not any other MACT standards.

We feel that the final PCWP rule is particularly well-suited for a risk-based option because of the specific pollutants that are emitted. For many affected sources, the pollutants are emitted in amounts that pose little risk to the surrounding population. However, the cost of controlling these pollutants is high and may not be justified by environmental benefits for these low-risk facilities. Only those PCWP affected sources that demonstrate that they are low risk are eligible for inclusion in the delisted low-risk subcategory. The criteria defining the delisted low-risk subcategory are based on sufficient information to develop health-protective estimates of risk and will provide ample protection of human health and the environment.

The final PCWP NESHAP is being promulgated by the February 2004 court-ordered deadline. Any delays in implementation of the final PCWP NESHAP caused by legal challenges, which could and often do occur for any MACT standard we promulgate without a risk-based approach, are beyond our control.

2. Legal Authority

Section 112(d)(4) of the CAA

Comment: We received multiple comments stating that CAA section 112(d)(4) provides EPA with authority to exclude sources that emit threshold pollutants from regulation. We also received multiple comments disagreeing that CAA section 112(d)(4) can be interpreted to allow exemptions for individual sources. Several commenters supported the use of a CAA section 112(d)(4) applicability cutoffs for both threshold and non-threshold pollutants.

Response: We feel that section 112(d)(4) does not give us the authority to exempt affected sources or emission points from MACT limitations on non-threshold pollutant emissions. All PCWP facilities emit carcinogens (*e.g.*, formaldehyde), that are currently considered non-threshold pollutants. Therefore, we are not using section 112(d)(4) authority to create risk-based options for PCWP.

We are not setting a risk-based emission limit, but, rather, we are using our CAA section 112(c)(9) authority to delist affected sources that demonstrate they meet the risk and hazard criteria for being included in this low-risk subcategory.

De minimis

Comment: Some commenters attempted to identify a source of authority for risk-based approaches under the *de minimis* doctrine articulated by appellate courts. The commenters cited case law which they believe holds EPA may exempt *de minimis* sources of risk from MACT-level controls because the mandate of CAA section 112 is not extraordinarily rigid and the exemption is consistent with the CAA's health-protective purpose. The commenters argued that CAA sections 112(c)(9) and 112(f)(2) indicate that Congress considered a cancer risk below one in a million to be *de minimis* and, therefore, insufficient to justify regulation under section 112. The commenters stated that EPA's exercise of *de minimis* authority has withstood judicial challenge, and that application of *de minimis* authority is based on the degree of risk at issue, not on the mass of emissions to be regulated.

Other commenters argued that *de minimis* authority does not exist to create MACT exemptions on a facility-by-facility or category-wide basis. The commenters stated that EPA lacks *de minimis* authority to delist subcategories based on risk. The commenters further noted that EPA has not revealed any administrative record

justifying a *de minimis* exemption, to demonstrate that compliance with MACT would yield a gain of trivial or no value.

Response: We are not relying on *de minimis* principles for today's action, and therefore, do not need to respond to these comments.

Section 112(c)(9) of the CAA

Comment: Two commenters opposed using subcategorization as a mechanism to exempt facilities. One of the commenters stated that subcategorization is a tool that should be used in the standard setting process, and using it to exempt facilities would have a detrimental effect on the stringency of the MACT floor and would generally degrade the standard. According to the commenter, the two-step subcategorization proposal is inconsistent with how subcategorization has been done in numerous previous NESHAP.

The other commenter argued that EPA's subcategorization theories are unlawful. According to the commenter, CAA section 112(c)(9) does not authorize EPA to separate identical pollution sources into subcategories that are regulated differently to weed out low-risk facilities or reduce the scope/cost of the standard. The commenter stated that subcategories based solely on risk do not bear a reasonable relationship to Congress' technology-based approach or the statutory structure and purposes of CAA section 112, and are not authorized by the CAA. According to the commenter, categories and subcategories are required to be consistent with the categories of stationary sources in CAA section 111. The commenter was not aware of any instance in which EPA has established categories or subcategories based on risk. The commenter stated that EPA routinely defines subcategories based on equipment characteristics (*e.g.*, technical differences in emissions characteristics, processes, control device applicability, or opportunities for P2). According to the commenter, EPA has not offered any explanation for why reinterpreting the statute to ignore nearly 12 years of settled practices and expectations under the MACT program is reasonable, nor why reducing the applicability of HAP emission standards serves Congress's goals in enacting the 1990 CAA Amendments.

The commenter noted that EPA's discussion of the risk-based exemptions was contained in a preamble section entitled, ''Can We Achieve the Goals of the Proposed Rule in a Less Costly Manner,'' which strongly suggests that EPA's motivation for considering these risk-based approaches is consideration of cost. The commenter cited prior EPA documentation and stated that EPA in the past has rejected the notion that cost should influence MACT determination, and this prior, consistently applied interpretation better serves the purposes of CAA section 112. The commenter argued that subcategorizing to set a no-control MACT floor is the same as refusing to set a MACT standard because the benefits would be negligible, which is unlawful.

The commenter also stated that CAA section 112(c)(9)(B)(i) does not authorize EPA to delist subcategories. According to the commenter, section 112(c)(9)(B) contains two subsections: subsection (i) refers only to categories, and subsection (ii) refers to both categories and subcategories. The commenter argued that the absence of the term ''subcategories'' in section 112(c)(9)(B)(i) indicates a Congressional choice not to permit the Administrator to delist subcategories of sources under section 112(c)(9)(B). The commenter stated that this is consistent with Congress' decision to require a higher standard to delist categories that emit carcinogens. According to the commenter, the section 112(c)(9)(B)(ii) requirement of less than one in a million lifetime cancer risk for the most exposed individual is a higher and more specific standard than the standard for other HAP.

To the contrary, two commenters stated that EPA has ample authority under CAA sections 112(c)(1) and 112(c)(9) to create and delist low-risk categories or subcategories. According to the commenters, section 112(c)(1) provides the Administrator with significant flexibility to create categories and subcategories as needed to implement CAA section 112. One commenter stated that there is nothing in the statute that limits the criteria the Administrator can use in establishing categories and subcategories. The commenter added that there is also nothing in the history of EPA's interpretation of section 112(c) that precludes subcategorization based on risk. In addition, EPA has stated that emission characteristics are factors to be considered when defining categories.

The commenter stated that application of statutory authority to exclude sources from regulation under section 112(d)(3) is also supported by relevant case law, *e.g.*, in the *Vinyl Chloride* case. (*NRDC* v. *EPA*, 824 F.2D 1126 (D.C. Cir. 1987)) According to the commenter, the court in that case established a range of acceptable levels of risk in establishing limits under prior language in section 112, and the establishment of an acceptable level of risk could be used to create a low-risk subcategory that could be delisted. The commenter stated that technological or operational differences among sources may also help discriminate between low-risk and high-risk sources. The commenter stated that effective use of section 112(c)(1) authority to create risk-based subcategories would significantly improve the cost-effectiveness of the section 112 program without undermining its role in protecting public health and the environment.

Both commenters noted that CAA section 112(c)(9)(B) provides EPA with broad authority to remove from MACT applicability those categories and subcategories of facilities whose HAP emissions are sufficiently low as to demonstrate a cancer risk less than one in a million to the most exposed individual in the population (for non-threshold carcinogens) and no adverse environmental or public health effect (for threshold HAP). (The commenter asserted that Congress used the terms category and subcategory interchangeably, indicating that either one can be delisted.) One commenter suggested that sources able to demonstrate a basis for inclusion in the delisted category on a case-by-case basis would then be exempted from the MACT, subject to possible federally-enforceable conditions designed by EPA. The commenter stated that the new category could include the following: all low-risk facilities, facilities producing wood products found to pose no expected risk to human health (*i.e.*, fiberboard, medium density fiberboard and plywood), facilities with acrolein emissions below a certain threshold, or facilities selected on the basis of some other risk criterion. The commenter suggested that the low-risk category be included in the final rule and delisted within 6 months following publication of the final rule. The delisting notices would designate health benchmarks and facilities would be required to submit evidence (*e.g.*, tiered dispersion modeling) demonstrating that their emissions result in exposures that fall below the benchmarks. Following delisting of the category, an affected source could apply to EPA for a determination that it qualifies for inclusion in the low-risk category. After evaluating the source's petition, EPA would issue a written determination of applicability based on the petition that would be binding on the permitting authority (unless the petition was found to contain significant errors or omissions) and appealable by the affected source or interested parties.

The EPA could require all facilities that qualify for inclusion in the delisted category to comply with federally-enforceable conditions, similar to the conditions established in permits for synthetic minor sources (*e.g.*, limits on potential to emit, production limits).

The commenter also responded to objections regarding the subcategorization and delisting of low-risk facilities. The commenter stated that the contrasting of the terms category and subcategory offered a distinction that in no way limited EPA's authority to delist low-risk facilities. According to the commenter, the argument that EPA cannot create subcategories based on risk is contradicted by the statutory language, which expressly states that the categories and subcategories EPA creates under CAA section 112 need not match those created under CAA section 111. Furthermore, prior EPA statements do nothing to detract from EPA's broad discretion to establish categories and subcategories. The subcategorization factors previously discussed by EPA justify subcategorization based on risk. The authority cited by one commenter does not establish that EPA's discretion to alter subcategorization is limited in any way, and even if it were, EPA is not bound by any prior position. The arguments that EPA may not delist subcategories for carcinogens (or sources emitting carcinogens) rest on a formalistic distinction that EPA previously has rejected as meaningless, and that, at any rate, can be remedied with a simple recasting of a subcategory as a category. The commenter stated that doing so is undisputedly within EPA's authority.

Three commenters addressed the issue of subcategorizing PCWP facilities based on characteristics other than risk. One commenter stated that the only option that appears consistent with the CAA, does not create excessive work for State and local agencies, and may be able to be based on science, is the subcategorization and delisting approach. However, the commenter added that the subcategories should be based on equipment or fuel use, not risk. The commenter stated that a subcategory based on site-specific risk creates a circular definition and does not make sense. The commenter also stated that subcategory delisting should occur before the compliance date so that facilities do not put off compliance in the hope or anticipation of delisting.

The second commenter stated that EPA requested comment on the establishment of PCWP subcategories ostensibly based on physical and operational characteristics, but in reality based on risk. According to the commenter, this indirect approach is just a variation on the approach (direct reliance on risk) that it claims EPA itself notes would disrupt and weaken establishment of MACT floors, and is accordingly unlawful. The commenter stated that, even if these approaches were lawful, to the extent that EPA's proposal could be read to suggest that facilities could be allowed to become part of the allegedly low-risk subcategory in the future without additional EPA rulemaking, this too would be unlawful. According to the commenter, CAA section 112(c)(9) provides the EPA Administrator alone the authority to make delisting determinations, and such authority may not be delegated to other government authorities or private parties. The commenter stated that EPA's proposal suggests an approach entirely backward from the statute-allowing sources to demonstrate after-the-fact that they belong in a subcategory that has been delisted under section 112(c)(9), when the statute requires that EPA determine that no source in the category emits cancer-causing HAP above specified levels, or that no source in the category or subcategory emit non-carcinogenic HAP above specified levels, by the time EPA establishes the standard. The commenter stated that EPA has provided no explanation of how the suggested approaches would be lawful or workable.

The third commenter indicated that low risk is an adequate and appropriate criterion for categorization. The commenter disagreed that EPA should create and delist categories on a technology basis when the intent is delisting of low-risk facilities. The commenter believed that seeking a technology-based surrogate for risk is unnecessary within the statutory framework. The commenter noted that the Congressional intent was ''to avoid regulatory costs which would be without public health benefit.'' (S. Rep. No. 228, 101st Cong., 1st. Sess. 175–6 (1990)) Nevertheless, the commenter described some technology-based criteria that they believed could be used to develop low-risk groups of PCWP facilities.

Four commenters addressed the impact that creation of a low-risk subcategory under CAA section 112(c)(9) could have on the establishment of MACT floors for the PCWP category. Two commenters argued that such subcategorization would have a negative effect. One commenter stated that this situation provided a valid reason for EPA not to mix risk-based and technology-based standards development. The commenter added that EPA also did not address how the ''once in, always in'' policy would apply in such a situation. The other commenter stated that this situation was another compelling reason why the suggested section 112(c)(9) subcategorization approach was unlawful and arbitrary. The commenter stated that the flaw was so obvious, inherent, and contrary to the MACT floor provisions of CAA section 112 and its legislative history, that it proves the undoing of the suggested section 112(c)(9) exemption. According to the commenter, EPA cannot simultaneously exercise its source category delisting authority consistent with section 112(c)(9), establish appropriate MACT floors under CAA section 112(d), and establish subcategory exemptions in the manner suggested by EPA, because the latter approach contravenes both section 112(c)(9) and the section 112(d) floor-setting process. The commenter stated that CAA section 112's major source thresholds and statutory deadlines make clear that sources meeting MACT by the time EPA is required to issue MACT standards must install MACT controls and may not subsequently throw them off or be relieved from meeting the MACT-level standards. While the CAA section 112(f) residual risk process allows EPA to establish more stringent emissions standards, there is nothing in the CAA that suggests EPA possesses authority to relax promulgated MACT standards.

The third commenter indicated that dilution of the MACT floor would not occur if low-risk category delisting occurred as follows: (1) Propose low-risk category with final PCWP rule, (2) promulgate low-risk category 6 months after proposal, and (3) delist facilities prior to MACT compliance deadline. If EPA issued the final PCWP rule-thereby setting the MACT floor-before it allowed affected sources to apply for inclusion in the low-risk category to be delisted, then every affected source would be considered in the establishment of the MACT floor. Thus, as a result of this timing, the MACT floor could not be diluted because no sources would be exempted from MACT before the MACT floor is set.

The fourth commenter believed that a MACT floor reevaluation would be appropriate and would further ensure that only facilities posing significant risk are required to install expensive controls.

Response: We feel that establishing a low-risk PCWP subcategory under CAA section 112(c)(1) and deleting that subcategory under CAA section 112(c)(9) best balances Congress' dual

concerns that categories and subcategories of major sources of HAP be subject to technology-based (and possible future risk-based) emission standards, but that undue burdens not be placed on groups of sources within the PCWP source category whose HAP emissions are demonstrated to present little risk to public health and the environment. We do not contend that the CAA specifically directs us to establish categories and subcategories of HAP sources based on risk, and we recognize that, at the time of the 1990 CAA Amendments, Congress may have assumed that we would generally base categories and subcategories on the traditional technological, process, output, and product factors that had been considered under CAA section 111. However, when properly considered, it becomes apparent that Congress did not intend the unduly restrictive- and consequently over-regulatory-reading of the CAA that some commenters urge regarding low-risk PCWP facilities.

Numerous CAA section 112 provisions evidence Congress' intent that we be able to find that sources, such as those in the PCWP category whose HAP emissions are below identified risk levels, should not necessarily be subject to MACT. These provisions, together with other indications of Congressional intent regarding the goals of section 112, must all be considered in determining whether we may base a PCWP subcategory on risk and delist that group of sources, without requiring additional HAP regulation that would be redundant for purposes of meeting Congress' risk-based goals.

While it is true that CAA section 112(c)(1) provides that ''[t]o the extent practicable, the categories and subcategories listed under this subsection shall be consistent with the list of source categories established pursuant to section 111 and part C[,]'' the provision also states that ''[n]othing in the preceding sentence limits the Administrator's authority to establish subcategories under this section, as appropriate.'' Therefore, by its plain terms, section 112(c)(1) does not preclude basing subcategories on criteria other than those traditionally used under section 111 before 1990, or those used after 1990 for sections 111 and 112. Moreover, while after 1990 we have principally used the traditional criteria to define categories and subcategories, such use in general does not restrict how we may define a subcategory in a specific case, ''as appropriate,'' since each HAP-emitting industry presents its own unique situation and factors to be considered. (See, *e.g.*, *Sierra Club* v. *EPA*, D.C. Cir. No. 02–1253, 2004 U.S. App. LEXIS 348 (decided Jan. 13, 2004).)

Even assuming for argument that the language of section 112(c)(1) may initially appear to restrict our authority to define subcategories, section 112(c)(1) cannot be read in isolation. A broad review of the entire text, structure, and purpose of the statute, as well as Congressional intent shows that, applied within the context of CAA section 112(c)(9), our approach of defining a low-risk subcategory of PCWP affected sources is reasonable, at the very least as a way to reconcile the possible tension between the arguably restrictive language of section 112(c)(1) and the Congressional intent behind section 112(c)(9). (See, *e.g.*, *Virginia* v. *Browner*, 80 F.3d 869, 879 (4th Cir. 1996).) Alternatively, even if the language is clear on its face in restricting our ability to define subcategories, we feel that, as a matter of historical fact, Congress could not have meant what the commenter asserts it appears to have said, and that as a matter of logic and statutory structure, it almost surely could not have meant it. (See, *e.g.*, *Engine Mfrs. Ass'n* v. *EPA*, 88 F.3d 1075, 1089 (D.C. Cir. 1996).)

Our interpretation of the CAA is a reasonable accommodation of the statutory language and Congressional intent regarding the relationship of the statutory categorization and subcategorization, delisting, MACT and residual risk provisions that apply to the PCWP category. This becomes clear in light of the issue addressed by commenters, which is whether we may delist a subcategory of low-risk PCWP affected sources only if such a group of sources is defined by criteria we have traditionally used to define categories and subcategories for regulatory, rather than delisting purposes. Our approach implements Congressional intent to avoid the over-regulatory result that flows from an overly rigid reading of the CAA. When the CAA is read as a whole, it is apparent that Congress-which in 1990 likely did not fully anticipate the policy considerations that come into play in regulating HAP emissions from PCWP affected sources-has not spoken clearly on the precise issue. Our interpretation is necessary to fill this statutory gap and prevent the thwarting of Congressional intent not to unnecessarily burden low-risk PCWP facilities by forcing them to meet stringent MACT controls when they already meet the risk-based goals of section 112. Our interpretation thus lends symmetry and coherence to the statutory scheme.

While we do not feel that CAA section 112(c)(1) actually restricts our authority to establish a low-risk PCWP subcategory, even if the language is so restrictive, it must be read within the context of Congress' purpose in allowing us to delist categories and subcategories of low-risk sources that are defined according to the traditional criteria under CAA section 111. It is beyond dispute that Congress determined that certain identifiable groups or sets of sources may be delisted if, as a group and without a single constituent source's exception, they are below the enumerated eligibility criteria of CAA section 112(c)(9). There is no apparent reason why such a group or set of sources must be limited to those defined by traditional categorization or subcategorization criteria. This is because, first, Congress in section 112(c)(1) clearly did not absolutely prohibit us from basing categories and subcategories on other criteria generally; and, second, the underlying characteristic of an eligible set or group of sources under section 112(c)(9)-that no source in the set or group presents risks above the enumerated levels-can be applied under several approaches to defining categories and subcategories and is not dependent upon such set or group being traditionally defined in order to implement the purpose of section 112(c)(9). Put another way, there is nothing apparent in the statute that precludes us from delisting a discernible set of low-risk PCWP affected sources just because that set cannot also be defined according to other traditional criteria that have nothing to do with the question of whether each of the constituent PCWP affected sources is low risk. As a matter of logic and statutory structure, Congress almost surely could not have meant to require that every identifiable group of low-risk PCWP affected sources, no matter how large in number or in percentage with respect to higher-risk affected sources in the PCWP category, must remain subject to CAA section 112, simply because that group could not be subcategorized as separate from the higher risk PCWP affected sources by application of traditional subcategorization criteria.

Where Congress squarely confronted the issue, it explicitly provided relief for categories and subcategories, defined by traditional criteria, that also happen to present little risk. (See CAA sections 112(d)(4), 112(c)(9), and 112(f)(2).) These CAA provisions addressing risk-based relief from, or thresholds for, HAP emissions regulation evidence

Congressional concern that the effects of such pollution be taken into account, where appropriate, in determining whether regulation under CAA section 112 is necessary. At the time of the 1990 Amendments, Congress did not consider it necessary to provide express relief for additional groups such as low-risk PCWP facilities, beyond those defined by traditional category and subcategory criteria, because it assumed we could implement a comprehensive regulatory scheme for air toxics that would both address situations where technology-based standards were needed to reduce source HAP emissions to levels closer to the risk-based goals of section 112, and avoid unnecessary imposition of technology-based requirements on groups of sources that were already meeting those goals. Congress enacted or revised various CAA air toxics provisions—including sections 112(c), (d) and (f)—to that end. Had events unfolded in that anticipated fashion, in the case of each industrial category and subcategory, there would have been a perfect correlation between the traditional criteria for defining categories and subcategories and the facts showing whether those groups are either high-or low-risk HAP sources.

This context turned out to be more complex than Congress anticipated, and in the case of PCWP facilities there is no clear differentiation between high-versus low-risk sources that corresponds to our traditional approach for identifying source categories and subcategories. Nevertheless, as in the case of a low-risk source group defined by traditional category or subcategory criteria, for the PCWP industry, we are able to identify a significant group of sources whose HAP emissions pose little risk to public health and the environment, applying the same section 112(c)(9) delisting criteria that would apply to any traditionally-defined source group. We feel it is reasonable to conclude that Congress would not have intended to over-regulate the low-risk PCWP affected sources due to the inability to define such a group by traditional criteria and thereby frustrate the coherent scheme Congress set forth of ensuring that HAP sources ultimately meet common risk-based goals under section 112.

The commenter's assertion that we are inappropriately altering our interpretation of the applicable statutory provisions and departing from the traditional categorization and subcategorization criteria in addressing low-risk PCWP facilities is thus unfounded. As explained above, the complexity of the air toxics problem and the relationship between the traditional criteria and what might be groups of low-risk sources, a context not fully understood by either Congress or EPA at the time of the 1990 Amendments, provides adequate justification for any unique applications of the our approach for low-risk PCWP facilities.

Our approach does not equate to one that Congress considered and rejected that would have allowed source-by-source exemptions from MACT based on individualized demonstrations that such sources are low risk. This is because, contrary to that approach, we rely upon the application of specific eligibility criteria that are defined in advance of any source's application to be included in the low-risk PCWP subcategory, in much the same way as any other applicability determination process works. Moreover, in response to the assertion that our approach nevertheless conflicts with legislative history rejecting a similar (but not identical) approach Congress considered under CAA section 112, this legislative history is not substantive legislative history demonstrating that Congress voted against relief from MACT in this situation-there is no such history. The commenters point to a provision in the House bill that was not enacted but that would have provided in certain situations for case-by-case exemptions for low-risk sources. There is no evidence that this provision was ever debated, considered, or voted upon, so its not being enacted is not probative of congressional intent concerning our ability to identify and delist a group of low-risk PCWP affected sources. Instead, it is reasonable to assume that, had Congress been aware in 1990 of the possibility that an identifiable group of PCWP affected sources is low risk, while that group does not correspond to traditional criteria differentiating categories and subcategories, Congress would have expressly, rather than implicitly, authorized our action here.

Moreover, the commenters are unable to cite any provision in CAA section 112 that would prevent us from being able to add individual or additional groups of low-risk PCWP affected sources to the group we initially identify in our final delisting action, as those additional low-risk PCWP affected sources prove their eligibility for inclusion in the delisted group over time. In fact, the approach we are taking for identifying additional low-risk PCWP affected sources is fully consistent with the approach we have long taken in identifying, on a case-by-case basis and subject to appropriate review, whether individual sources are members of a category or subcategory subject to standards adopted under CAA sections 111 and 112.

Regarding the comment that Congress did not expressly provide relief for carcinogen-emitting low-risk groups of sources within the PCWP category other than as an entire category, we construe the provisions of CAA section 112(c)(9) to apply to listed subcategories as well as to categories. This construction is logical in the context of the general regulatory scheme established by the statute, and it is the most reasonable one because section 112(c)(9)(B)(ii) expressly refers to subcategories. Under a literal reading of section 112(c)(9)(B), no subcategory could ever be delisted, notwithstanding the explicit reference to subcategories, since the introductory language of section 112(c)(9)(B) provides explicit authority to only delist categories. Such a reading makes no sense, at the very least because Congress plainly assumed we might also delist another collection of sources besides either categories or subcategories, even in the case of sources of carcinogens. Both sections 112(c)(9)(B)(i) and (ii) refer additionally to groups of sources in the case of area sources as being eligible for delisting, even though only a category of sources is specifically identified as eligible for delisting in the introductory language of section 112(c)(9)(B). In light of the broader congressional purpose behind the delisting authority, we interpret the absence of explicit references to subcategories in this introductory language and in section 112(c)(9)(B)(i) as representing nothing more than a drafting error.

Regarding the comments about establishing PCWP subcategories based on characteristics other than risk, the criteria for the low-risk subcategory we are delisting are based solely on risk and not on technological differences in equipment or emissions. We performed an analysis to determine which major source PCWP affected sources may be low-risk affected sources. Whether affected sources are low risk or not depends on the affected source HAP emissions; and affected source HAP emissions are a function of the type and amount of product(s) produced, the type of process units (*e.g.*, direct-fired versus indirect-fired dryers) used to produce the product, and the emission control systems in place. Our analysis indicates that the affected sources which show low risk could include affected sources producing various products such as particleboard, molded particleboard, medium density fiberboard, softwood plywood, softwood veneer, fiberboard, engineered wood products, hardboard, and oriented strandboard. However, there are also major sources that

produce these products that are not low risk, and, therefore, product type cannot be used to define the low-risk subcategory. There is no correlation between production rate and low-risk affected sources (*e.g.*, when affected sources are sorted by production rate for their product, the low-risk affected sources are not always at the lower end of the production rate range), so production rate cannot be used as criteria for defining the low-risk subcategory. The low-risk affected sources use a variety of process equipment (*e.g.*, veneer dryers at softwood plywood plants and tube dryer at MDF plants). This same equipment is used at PCWP plants that are not low risk, and, therefore, there is no process unit type distinction that can be used to define the low-risk subcategory. The pollutant that drives the risk estimate can vary from affected source to affected source because of the different types of process units at each affected source. There is no clear distinction among low-risk and non-low-risk affected sources when ranked by emissions of individual pollutants because of other factors that contribute to affected source risk such as presence of a co-located PCWP facility or variability in the pollutants emitted. Thus, there is no emissions distinction that can be used to define the low-risk subcategory. There is no technological basis for creating a subcategory of PCWP affected sources that are low risk. The commonality between all of the low-risk PCWP affected sources is that they are low risk, and, therefore, we have established the low-risk subcategory based on risk.

We do not agree with the commenters' assertions that our approach for the low-risk PCWP subcategory undermines our ability to identify the MACT floor for the larger PCWP category, either in today's final PCWP rule or in any future consideration of technological development under CAA section 112(d)(6). This is because, while low-risk PCWP affected sources will literally be part of a separate subcategory, there is nothing in the CAA that prevents us from including them in any consideration of what represents the best controlled similar source in the new source MACT floor context, and because it is not unprecedented for us to look outside the relevant category or subcategory in identifying the average emission limitation achieved by the best controlled existing sources if doing so enables us to best estimate what the relevant existing sources have achieved. In fact, EPA has taken this very approach in the Industrial Boilers MACT rulemaking, in order to identify the MACT floor for mercury emissions. Moreover, the unique issues presented by the low-risk PCWP subcategory show that it would be unreasonable to exclude any better-performing low-risk PCWP sources from the MACT floor pool for the larger PCWP category. Traditionally, EPA has based categories and subcategories partly on determinations of what pollution control measures can be applied to the relevant groups of sources in order to effectively and achievably reduce HAP. In other words, EPA has identified subcategories for purposes of identifying the MACT floor in a way that accounts for the differences of sources types in their abilities to control HAP emissions. But whether a PCWP source is a low-risk source does not necessarily turn on such a distinction—two sources might have identical abilities to control HAP emissions, but the unique circumstances of one source regarding the impacts of its HAP emissions will determine whether or not it is a low-risk PCWP source. (In fact, it is theoretically possible that between two sources the better performing source will be a high-risk source, and the worse-performing source will be a low-risk source, based on circumstances that are unrelated to the question of what abilities the sources have to control HAP emissions through application of MACT, such as the sources' locations vis a vis exposed human populations.) Therefore, EPA feels that not only is it appropriate to include any better-performing low risk PCWP sources in the MACT floor determinations for the larger PCWP category, but that excluding such sources simply based on the unique facts of the impacts of their emissions, with there being no difference in the abilities of high-risk and low-risk sources to apply HAP emission control measures, could result in an undesirable weakening of the MACT floor for the larger PCWP category. To that end, the MACT floors established for PCWP process units today are in no way affected by our establishment of the low-risk PCWP subcategory.

Finally, we disagree with the argument by one commenter that the low-risk PCWP subcategory approach represents an impermissible cost-based exemption from MACT or factor in determining MACT. Certainly it is true that costs may not be considered in setting the MACT floor. However, there is nothing in the CAA that prevents us from noting the cost impacts, beneficial or adverse, of our actions in setting MACT floors, assessing possible beyond-the-floor measures, or conducting risk-based actions under CAA section 112. In fact, we routinely evaluate the costs of our regulatory actions, even when cost factors may not be used to influence the regulatory decision itself, in order to comply with applicable Executive Order and statutory administrative review requirements. Simply because there is a cost benefit to some members of the PCWP category in our establishing a low-risk PCWP subcategory does not make that action impermissible, provided that our subcategorization and delisting are otherwise properly based on the appropriate risk-based criteria under CAA section 112(c)(9). Section 112 by its own terms does not forbid the goal of achieving environmental protection in a less costly manner. Similarly, it is appropriate for EPA to note the beneficial air pollution-related impacts of not requiring low-risk PCWP sources to, for example, install criteria pollutant emission-producing RTOs. While it is true that such air quality-related impacts could not constitute non-air quality health and environmental impacts that EPA must consider when setting MACT under CAA section 112(d)(2), nothing in the CAA prevents EPA from taking account of such impacts in developing its policy regarding whether it is appropriate to delist a subcategory under section 112(c)(9) when that subcategory otherwise meets the statutory criteria for delisting. Therefore, EPA does not agree with commenters who claim that its approach to delisting the low risk PCWP subcategory conflicts with how it has argued issues regarding either *de minimis* authority, cost-based exemptions from MACT, or the treatment of non-air quality impacts and the consideration of risk in setting the actual MACT standard before the U.S. Court of Appeals for the D.C. Circuit. Nor does our approach contravene any of that Court's rulings on these issues.

3. Criteria for Demonstrating Low Risk Dose-response Values

Comment: Two commenters suggested that EPA incorporate into the PCWP rule the findings of the nationwide wood products risk assessment, which they claim demonstrates that the vast majority of wood products sources cause no meaningful risk to human health or the environment at current emission levels. The commenters stated that the risk assessment used existing air dispersion modeling studies of 34 wood products facilities throughout the U.S. to estimate the maximum annual off-site HAP concentrations at wood products facilities nationwide. According to the commenters, the risk assessment indicates that large

subgroups of facilities that are affected sources under the PCWP rule as proposed (*i.e.*, fiberboard, medium density fiberboard, and plywood facilities) generally are expected to pose insignificant risks to human health, based on a comparison of predicted off-site concentrations with applicable health benchmarks. One of the commenters stated that many of the facilities with low off-site concentrations will likely be smaller plants that would not be able to justify installation of (additional) emission controls and may face closure without a risk-based compliance option. The other commenter stated that a comparison of off-site concentrations of formaldehyde and acetaldehyde with benchmarks reflecting the latest toxicological evidence indicates that exposures to those HAP are well below levels of concern. Acrolein was the only HAP with potential exposures at some affected sources (*i.e.*, subset of fiberboard, medium density fiberboard and plywood affected sources) that exceeded the health benchmark. However, the commenter stated that the acrolein findings may not represent an actual risk to human health because exceedences of the benchmark may be attributable to EPA averaging a large number of non-detects at one-half the detection limit, thereby artificially increasing predicted acrolein emissions. Based on these overall findings, the commenter concluded that the wood products risk assessment indicates that incinerator control is not warranted on the basis of human health concerns for a large number of facilities.

Response: We acknowledge receipt of the industry-sponsored nationwide wood products MACT risk assessment submitted by the commenter. However, we conducted our own risk analysis to evaluate the merits of including and delisting a low-risk subcategory in today's final PCWP rule. The methodology used in our risk analysis differed widely from the methodology used in industry's risk assessment. For example, industry's risk assessment was based on previously conducted air dispersion modeling studies for 34 PCWP facilities, while our analysis used emission estimates developed for each PCWP affected source expected to be a major source of HAP. We used different (generally more protective) human health benchmarks in our risk assessment than were used in industry's risk assessment. We also considered all HAP (including metal HAP) in our risk analysis, whereas industry's risk assessment considered only methanol, formaldehyde, acetaldehyde, acrolein, phenol, and propionaldehyde.

Based on our risk analysis, we conclude that HAP emissions from some PCWP affected sources pose little risk to human health and the environment. Therefore, we have included a subcategory of low-risk PCWP affected sources in today's final PCWP rule, and are delisting that subcategory. Appendix B to subpart DDDD of 40 CFR part 63 includes procedures that facilities may use to demonstrate that they are part of the delisted low-risk subcategory, and, therefore, are not subject to the compliance options included in today's final PCWP MACT rule. To demonstrate eligibility for the low-risk subcategory, facilities must first conduct emissions testing for up to 13 HAP (five organic HAP from all process units, seven metal HAP from direct-fired process units, and MDI from presses processing product containing MDI resin). The rationale for selection of these 13 HAP is described elsewhere in this section and in the supporting documentation for the final rule. Facilities must use the results from emissions testing to preliminarily demonstrate, subject to EPA approval, that they are part of the low-risk subcategory using either a look-up table analysis (based on the look-up tables included in appendix B to subpart DDDD of 40 CFR part 63) or site-specific risk assessment methodology (described in appendix B to subpart DDDD of 40 CFR part 63 and other analytical tools, such as the ''Air Toxics Risk Assessment Reference Library'' if appropriate for the specific source) and risk benchmarks (described in appendix B to subpart DDDD of 40 CFR part 63).

Regarding acrolein, the commenter is correct in that, when developing AP–42 emission factors, we used a value of one-half the detection limit for all non-detect sample runs if acrolein was detected in any sample runs from the applicable source category. Acrolein has been detected in process unit emissions from all sectors of the PCWP industry, except for hardwood plywood manufacturing. When using emission factors to estimate emissions from PCWP facilities, we did not estimate emissions of a pollutant when all of the emissions test runs were non-detect. However, we did use emission factors that included a mixture of detectable values and values based on one-half of the method detection limit (MDL) when acrolein was detected at least once for a particular type of process unit. We maintain that this approach to handling non-detects is appropriate for the purposes that we used the emissions data. Facilities will conduct emissions tests instead of using emission factors to demonstrate eligibility for the low-risk subcategory. To prevent facilities from including HAP that are not detected in their low-risk demonstrations, appendix B to subpart DDDD of 40 CFR part 63 states that facilities may use zero for non-detects when all of the emission test runs are below the MDL, provided that certain criteria are met to ensure that emissions testing and analysis procedures are adequate to detect low concentrations of HAP.

Comment: One commenter stated that CAA section 112(d)(4) is particularly ill-suited to the PCWP and industrial boiler source categories. The commenter stated that, even if EPA had authority to create individualized MACT exemptions based on health thresholds, it could not do so if there is insufficient evidence on the pollutants emitted to establish a NOEL. According to the commenter, section 112(d)(4) does not apply for chemicals that do not have a well-defined threshold based on reliable science. The commenter stated that available evidence does not establish a no-effect threshold for acetaldehyde, acrolein, benzene, carbon tetrachloride, chloroform, formaldehyde, manganese, methylene chloride, and phenol. As rationale, the commenter presented a summary of the available health effects data for each of these pollutants.

Response: As stated elsewhere in this preamble, we are not pursuing establishment of a threshold emission rate for the PCWP source category under CAA section 112(d)(4) because PCWP affected sources emit non-threshold pollutants. Therefore, this comment is irrelevant in the context of the PCWP rule. Comments pertaining to the Industrial/Commercial/Institutional Boilers and Process Heaters NESHAP are addressed in the comment-response document for that rule. (See Docket ID No. OAR–2002–0058.)

Comment: Two commenters expressed concern about the health benchmark data sources that EPA used. The first commenter argued that the proposal inappropriately used draft guidelines and toxicity profiles that had not been subject to public review and/or were not publicly available. The commenter was particularly concerned with the use of non-linear carcinogenic risk values and toxicity profiles (for HAP) that have not been finalized and are not available for review by the public.

The second commenter argued that EPA should not rely solely on the health benchmarks in its Integrated Risk Information System (IRIS) database. The commenter stated that IRIS, while useful for obtaining information about the health effects of chemicals, is far