ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[EPA–HQ–OAR–2016–0243; FRL–5185.1–01–OAR]

RIN 2060–AV56

National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The U.S. Environmental Protection Agency (EPA) is proposing amendments to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Plywood and Composite Wood Products (PCWP), as required by the Clean Air Act (CAA). To ensure that all emissions of hazardous air pollutants (HAP) from sources in the source category are regulated, the EPA is proposing HAP standards for processes currently unregulated for total HAP (including acetaldehyde, acrolein, formaldehyde, methanol, phenol, propionaldehyde), non-mercury (non-Hg) HAP metals, mercury (Hg), hydrogen chloride (HCl), polycyclic aromatic hydrocarbons (PAH), dioxin/furan (D/F), and methylene diphenyl diisocyanate (MDI). The standards the EPA is proposing include emission limitations and work practices applicable for PCWP process units and lumber kilns located at facilities that are major sources of HAP emissions. This proposal responds to the 2007 partial remand and vacatur of portions of the 2004 PCWP NESHAP in which the EPA previously concluded maximum achievable control technology was represented by no control (*i.e.,* no emissions reduction). This proposal also responds to or requests comment on issues raised in a petition for reconsideration the EPA received regarding the technology review and other amendments to the PCWP NESHAP the EPA finalized on August 13, 2020.

DATES: Comments must be received on or before July 3, 2023. Under the Paperwork Reduction Act (PRA), comments on the information collection provisions are best assured of consideration if the Office of Management and Budget (OMB) receives a copy of your comments on or before June 20, 2023.

Public hearing: If anyone contacts us requesting a public hearing on or before May 23, 2023, we will hold a virtual public hearing. See **SUPPLEMENTARY INFORMATION** for information on requesting and registering for a public hearing.

ADDRESSES: You may send comments, identified by Docket ID No. EPA–HQ–OAR–2016–0243, by any of the following methods:

- *Federal eRulemaking Portal: https://www.regulations.gov/* (our preferred method). Follow the online instructions for submitting comments.
- *Email: a-and-r-docket@epa.gov.* Include Docket ID No. EPA–HQ–OAR–2016–0243 in the subject line of the message.
- *Fax:* (202) 566–9744. Attention Docket ID No. EPA–HQ–OAR–2016–0243.
- *Mail:* U.S. Environmental Protection Agency, EPA Docket Center, Docket ID No. EPA–HQ–OAR–0216–0243, Mail Code 28221T, 1200 Pennsylvania Avenue NW, Washington, DC 20460.
- *Hand/Courier Delivery:* EPA Docket Center, WJC West Building, Room 3334, 1301 Constitution Avenue NW, Washington, DC 20004. The Docket Center's hours of operation are 8:30 a.m.–4:30 p.m., Monday–Friday (except federal holidays).

Instructions: All submissions received must include the Docket ID No. for this rulemaking. Comments received may be posted without change to *https://www.regulations.gov/,* including any personal information provided. For detailed instructions on sending comments and additional information on the rulemaking process, see the **SUPPLEMENTARY INFORMATION** section of this document.

FOR FURTHER INFORMATION CONTACT: For questions about this proposed action, contact Ms. Katie Hanks, Sector Policies and Programs Division (E143–03), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541–2159; and email address: *hanks.katie@epa.gov.*

SUPPLEMENTARY INFORMATION:

Participation in virtual public hearing. To request a virtual public hearing, contact the public hearing team at (888) 372–8699 or by email at *SPPDpublichearing@epa.gov.* If requested, the hearing will be held via virtual platform on June 2, 2023. The hearing will convene at 10:00 a.m. Eastern Time (ET) and will conclude at 4:00 p.m. ET. The EPA may close a session 15 minutes after the last pre-registered speaker has testified if there are no additional speakers. The EPA will announce further details at *https://www.epa.gov/stationary-sources-air-pollution/plywood-and-composite-wood-products-manufacture-national-emission.*

If a public hearing is requested, the EPA will begin pre-registering speakers for the hearing no later than 1 business day after a request has been received. To register to speak at the virtual hearing, please use the online registration form available at *https://www.epa.gov/stationary-sources-air-pollution/plywood-and-composite-wood-products-manufacture-national-emission* or contact the public hearing team at (888) 372–8699 or by email at *SPPDpublichearing@epa.gov.* The last day to pre-register to speak at the hearing will be May 30, 2023. Prior to the hearing, the EPA will post a general agenda that will list pre-registered speakers in approximate order at: *https://www.epa.gov/stationary-sources-air-pollution/plywood-and-composite-wood-products-manufacture-national-emission.*

The EPA will make every effort to follow the schedule as closely as possible on the day of the hearing; however, please plan for the hearings to run either ahead of schedule or behind schedule.

Each commenter will have 4 minutes to provide oral testimony. The EPA encourages commenters to submit a copy of their oral testimony as written comments to the rulemaking docket.

The EPA may ask clarifying questions during the oral presentations but will not respond to the presentations at that time. Written statements and supporting information submitted during the comment period will be considered with the same weight as oral testimony and supporting information presented at the public hearing.

Please note that any updates made to any aspect of the hearing will be posted online at *https://www.epa.gov/stationary-sources-air-pollution/plywood-and-composite-wood-products-manufacture-national-emission.* While the EPA expects the hearing to go forward as set forth above, please monitor our website or contact the public hearing team at (888) 372–8699 or by email at *SPPDpublichearing@epa.gov* to determine if there are any updates. The EPA does not intend to publish a document in the **Federal Register** announcing updates.

If you require the services of a translator or special accommodation such as audio description, please pre-register for the hearing with the public hearing team and describe your needs by May 25, 2023. The EPA may not be able to arrange accommodations without advanced notice.

Docket. The EPA has established a docket for this rulemaking under Docket ID No. EPA–HQ–OAR–2016–0243. All documents in the docket are listed in *https://www.regulations.gov/.* Although listed, some information is not publicly available, *e.g.,* Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy. With the exception of such material, publicly available docket materials are available electronically in *Regulations.gov*.

Instructions. Direct your comments to Docket ID No. EPA–HQ–OAR–2016–0243. The EPA's policy is that all comments received will be included in the public docket without change and may be made available online at *https://www.regulations.gov/,* including any personal information provided, unless the comment includes information claimed to be CBI or other information whose disclosure is restricted by statute. Do not submit electronically to *https://www.regulations.gov/* any information that you consider to be CBI or other information whose disclosure is restricted by statute. This type of information should be submitted as discussed below.

The EPA may publish any comment received to its public docket. Multimedia submissions (audio, video, *etc.*) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.,* on the Web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit *https://www.epa.gov/dockets/commenting-epa-dockets.*

The *https://www.regulations.gov/* website allows you to submit your comment anonymously, which means the EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an email comment directly to the EPA without going through *https://www.regulations.gov/,* your email address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the internet. If you submit an electronic comment, the EPA recommends that you include your name and other contact information in the body of your comment and with any digital storage media you submit. If the EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, the EPA may not be able to consider your comment. Electronic files should not include special characters or any form of encryption and be free of any defects or viruses. For additional information about the EPA's public docket, visit the EPA Docket Center homepage at *https://www.epa.gov/dockets.*

Submitting CBI. Do not submit information containing CBI to the EPA through *https://www.regulations.gov/.* Clearly mark the part or all of the information that you claim to be CBI. For CBI information on any digital storage media that you mail to the EPA, note the docket ID, mark the outside of the digital storage media as CBI, and identify electronically within the digital storage media the specific information that is claimed as CBI. In addition to one complete version of the comments that includes information claimed as CBI, you must submit a copy of the comments that does not contain the information claimed as CBI directly to the public docket through the procedures outlined in *Instructions* above. If you submit any digital storage media that does not contain CBI, mark the outside of the digital storage media clearly that it does not contain CBI and note the docket ID. Information not marked as CBI will be included in the public docket and the EPA's electronic public docket without prior notice. Information marked as CBI will not be disclosed except in accordance with procedures set forth in 40 Code of Federal Regulations (CFR) part 2.

Our preferred method to receive CBI is for it to be transmitted electronically using email attachments, File Transfer Protocol (FTP), or other online file sharing services (*e.g.,* Dropbox, OneDrive, Google Drive). Electronic submissions must be transmitted directly to the Office of Air Quality Planning and Standards (OAQPS) CBI Office at the email address *oaqpscbi@epa.gov,* and as described above, should include clear CBI markings and note the docket ID. If assistance is needed with submitting large electronic files that exceed the file size limit for email attachments, and if you do not have your own file sharing service, please email *oaqpscbi@epa.gov* to request a file transfer link. If sending CBI information through the postal service, please send it to the following address: OAQPS Document Control Officer (C404–02), OAQPS, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, Attention Docket ID No. EPA–HQ–OAR–2016–0243. The mailed CBI material should be double wrapped and clearly marked. Any CBI markings should not show through the outer envelope.

Preamble acronyms and abbreviations. Throughout this document the use of "we," "us," or "our" is intended to refer to the EPA. We use multiple acronyms and terms in this preamble.

While this list may not be exhaustive, to ease the reading of this preamble and for reference purposes, the EPA defines the following terms and acronyms here:

ACI activated carbon injection
APCD air pollution control device
BACT best available control technology
BDL below detection level
BF board feet
BTF beyond-the-floor
CAA Clean Air Act
CBI Confidential Business Information
CDK continuous dry kiln
CEMS continuous emission monitoring system
CFR Code of Federal Regulations
Cl_2 chlorine
CO_2e carbon dioxide equivalent
D/F dioxin/furan (*i.e.*, polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans)
DLL Detection Level Limited
dscm dry standard cubic meter
EJ environmental justice
EPA Environmental Protection Agency
ERT Electronic Reporting Tool
FR Federal Register
gr/dscf grains per dry standard cubic foot
HAP hazardous air pollutant(s)
HCl hydrogen chloride
HF hydrogen fluoride
Hg mercury
ICR information collection request
kPa kilopascals
lb/MSF ¾″ pounds of pollutant per thousand square feet of ¾-inch thick board
lb/MSF ⅜″ pounds of pollutant per thousand square feet of ⅜-inch thick board
lb/ODT pounds of pollutant per oven-dried ton of wood
LVL laminated veneer lumber
MACT maximum achievable control technology
MBF thousand board feet
MDF medium density fiberboard
MDI methylene diphenyl diisocyanate
MDL method detection limit
mg/dscm milligrams of pollutant per dry standard cubic meter of air
NAICS North American Industry Classification System
NESHAP national emission standards for hazardous air pollutants
NIST National Institute of Standards and Technology
Non-Hg non-mercury
NRDC Natural Resources Defense Council
NSPS new source performance standards
NTTAA National Technology Transfer and Advancement Act
O&M operation and maintenance
OAQPS Office of Air Quality Planning and Standards

OMB Office of Management and Budget
OSB oriented strandboard
PAH polycyclic aromatic hydrocarbons
PBCO production-based compliance option
PCWP plywood and composite wood products
PDF portable document format
PM particulate matter
PRA Paperwork Reduction Act
psia pounds per square inch absolute
RCO regenerative catalytic oxidizer
RDL representative detection limit
RFA Regulatory Flexibility Act
RMH resinated material handling
RTO regenerative thermal oxidizer
RTR residual risk and technology review
SBA Small Business Administration
SSM startup, shutdown, and malfunction
TEQ toxic equivalency
THC total hydrocarbon
tpy tons per year
ug/dscm micrograms of pollutant per dry standard cubic meter
UL upper limit
UMRA Unfunded Mandates Reform Act
UPL upper prediction limit
VCS voluntary consensus standards
WESP wet electrostatic precipitator

Organization of this document. The information in this preamble is organized as follows:

I. General Information

A. Does this action apply to me?

The source category that is the subject of this proposal is Plywood and Composite Wood Products regulated under 40 CFR part 63, subpart DDDD. The 2022 North American Industry Classification System (NAICS) codes for the Plywood and Composite Wood Products industry are 321113, 321211, 321212, 321215, 321219, and 321999. This list of categories and NAICS codes is not intended to be exhaustive but rather provides a guide for readers regarding the entities that this proposed action is likely to affect. The proposed standards, once promulgated, will be directly applicable to the affected sources. Federal, state, local, and tribal government entities would not be affected by this proposed action. As defined in the *Initial List of Categories of Sources Under Section 112(c)(1) of the Clean Air Act Amendments of 1990* (see 57 FR 31576, July 16, 1992) and *Documentation for Developing the Initial Source Category List, Final Report* (see EPA–450/3–91–030, July 1992), the Plywood and Particleboard source category is any facility engaged in the manufacturing of plywood and/or particle boards. This category includes, but is not limited to, manufacturing of chip waferboard, strandboard, waferboard, hardboard/cellulosic fiber board, oriented strandboard (OSB), hardboard plywood, medium density fiberboard (MDF), particleboard, softwood plywood, or other processes using wood and binder systems. The name of the source category was changed to Plywood and Composite Wood Products (PCWP) on November 18, 1999 (64 FR 63025), to more accurately reflect the types of manufacturing facilities covered by the source category. In addition, when the EPA proposed the PCWP rule on January 9, 2003 (68 FR 1276), the scope of the source category was broadened to include lumber kilns located at stand-alone kiln-dried lumber manufacturing facilities or at any other type of facility.

B. Where can I get a copy of this document and other related information?

In addition to being available in the docket, an electronic copy of this action is available on the internet. Following signature by the EPA Administrator, the EPA will post a copy of this proposed action at *https://www.epa.gov/plywood-and-composite-wood-products-manufacture-national-emission.* Following publication in the **Federal Register**, the EPA will post the **Federal Register** version of the proposal and key technical documents at this same website.

A redline/strikeout version of the rule showing the edits that would be necessary to incorporate the changes proposed in this action to 40 CFR part 63, subpart DDDD, is presented in the memorandum titled *Proposed Regulation Edits for 40 CFR part 63 Subpart DDDD National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products,* available in the docket for this action (Docket ID No. EPA–HQ–OAR–2016–0243).

II. Background

A. What is the statutory authority for this action?

The EPA originally promulgated the PCWP NESHAP (40 CFR part 63, subpart DDDD) on July 30, 2004. On August 13, 2020, the EPA took final action on the risk and technology review required by Clean Air Act (CAA) sections 112(d)(6) and (f)(2) for the PCWP residual risk and technology review (2020 RTR). The EPA is proposing in this action to amend the NESHAP to ensure that all emissions of HAP from sources in the source category are regulated.

In setting standards for major source categories under CAA section 112(d), the EPA has the obligation to address all HAP listed under CAA section 112(b) emitted by the source category. In the *Louisiana Environmental Action Network* v. *EPA (LEAN)* decision issued on April 21, 2020, the U.S. Court of Appeals for the District of Columbia Circuit (D.C. Circuit) held that the EPA has an obligation to address unregulated emissions from a major source category when the Agency conducts the 8-year technology review of a maximum achievable control technology (MACT) standard that previously left such HAP emissions unregulated.

In 2007, the D.C. Circuit remanded and vacated portions of the 2004 NESHAP promulgated by the EPA to establish MACT standards for the PCWP source category. *NRDC* v. *EPA,* 489 F.3d 1364 (D.C. Cir. 2007). In the 2004 NESHAP, the EPA had concluded that the MACT standards for several process units were represented by no emission reduction (or ''no control'' emission floors). The ''no control'' MACT conclusions were rejected because, as the court clarified in a related decision, the EPA must establish emission standards for listed HAP. 489 F.3d 1364, 1371, citing *Sierra Club* v. *EPA,* 479 F.3d 875 (D.C. Cir. 2007). The EPA acknowledged in the preamble to the proposed RTR (at 84 FR 47077–47078, September 6, 2019) that there are unregulated sources with ''no control'' MACT determinations in the PCWP source category, and we stated our plans to address those units in a separate action subsequent to the RTR.

This proposed rule responds to the partial remand and vacatur of the 2004 NESHAP, and to the petition for reconsideration of the 2020 technology review, and addresses currently unregulated emissions of HAP from process units in the PCWP source category, including lumber kilns. Six HAP compounds (acetaldehyde, acrolein, formaldehyde, methanol, phenol, propionaldehyde), defined as ''total HAP'' in the PCWP NESHAP, represent over 96 percent of the HAP emitted from the PCWP source category. In addition to total HAP, emissions estimates collected for the 2020 RTR indicated that unregulated HAP are present in the PCWP source category as a result of combustion in direct-fired dryers, including: non-mercury (non-Hg) HAP metals, mercury (Hg), hydrogen chloride (HCl), polycyclic aromatic hydrocarbons (PAH), dioxin/furan (D/F). There are also emissions of methylene diphenyl diisocyanate (MDI) from processes that use MDI resins and coatings. The EPA is proposing amendments establishing standards that reflect MACT for these pollutants emitted by process units that are part of the PCWP source category, pursuant to CAA sections 112(d)(2) and (3) and, where appropriate, CAA section 112(h).

B. What is this source category and how does the current NESHAP regulate its HAP emissions?

The PCWP industry consists of facilities engaged in the production of PCWP or kiln-dried lumber. 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, OSB, hardboard, fiberboard, MDF, laminated strand lumber, laminated veneer lumber (LVL), wood I-joists, kiln-dried lumber, and glue-laminated beams. There are currently 223 major source facilities that are subject to the PCWP NESHAP, including 99 facilities manufacturing PCWP and 124 facilities producing kiln-dried lumber. A major source of HAP is a plant site that emits or has the potential to emit any single HAP at a rate of 9.07 megagrams (10 tons) or more, or any combination of HAP at a rate of 22.68 megagrams (25 tons) or more per year from all emission sources at the plant site.

The affected source under the PCWP NESHAP is the collection of dryers, refiners, blenders, formers, presses, board coolers, and other process units associated with the manufacturing of PCWP. The affected source includes, but is not limited to, green end operations, refining, drying operations (including any combustion unit exhaust stream routinely used to direct fire process unit(s)), resin preparation, blending and forming operations, pressing and board cooling operations, and miscellaneous finishing operations (such as sanding, sawing, patching, edge sealing, and other finishing operations not subject to other NESHAP). The affected source also includes onsite storage and preparation of raw materials used in the manufacture of PCWP, such as resins; onsite wastewater treatment operations specifically associated with PCWP manufacturing; and miscellaneous coating operations. The affected source includes lumber kilns at PCWP manufacturing facilities and at any other kind of facility.

The NESHAP contains several compliance options for process units subject to the standards: (1) installation and use of emissions control systems with an efficiency of at least 90 percent; (2) production-based limits that restrict HAP emissions per unit of product produced; and (3) emissions averaging that allows control of emissions from a group of sources collectively (at existing affected sources). These compliance options apply for the following process units: fiberboard mat dryer heated zones (at new affected sources); green rotary dryers; hardboard ovens; press predryers (at new affected sources); pressurized refiners; primary tube dryers; secondary tube dryers; reconstituted wood product board coolers (at new affected sources); reconstituted wood product presses; softwood veneer dryer heated zones; rotary strand dryers; and conveyor strand dryers (zone one at existing affected sources, and zones one and two at new affected sources). In addition, the PCWP NESHAP includes work practice standards for dry rotary dryers, hardwood veneer dryers, softwood veneer dryers, veneer redryers, and group 1 miscellaneous coating operations (defined in 40 CFR 63.2292).

The 2020 residual risk review found that the risk associated with air emissions from the PCWP manufacturing industry (including lumber kilns) are acceptable and that the current PCWP NESHAP provides an ample margin of safety to protect public health. In the 2020 technology review, the EPA concluded that there were no developments in practices, processes, or control technologies that would warrant revisions to the standards promulgated in 2004. In addition to conclusions with respect to the RTR, the 2020 action contained amendments to remove exemptions from the standards during periods of startup, shutdown, and malfunction (SSM). The 2020 amendments added work practices so there would be standards in place of the former startup and shutdown exemptions for 3 specific events that occur during PCWP production: safety-related shutdowns, pressurized refiner startup/shutdown, and softwood veneer dryer gas-burner relights. Lastly, the 2020 amendments included provisions requiring electronic reporting and repeat emissions testing. However, the 2020 technology review did not address the unregulated HAP emissions from PCWP facilities that the EPA is now addressing in response to the 2007 remand of the 2004 NESHAP.

C. What data collection activities were conducted to support this action?

On October 5, 2017, the EPA issued an Information Collection Request (ICR) to gather information from PCWP manufacturers to support conducting the PCWP NESHAP RTR. The ICR gathered detailed process data, emission release point characteristics, and HAP emissions data for PCWP process units located at major sources. The response rate for the 2017 ICR was over 99 percent. Following completion of the 2020 RTR, the EPA continued to track facility changes in the PCWP industry to stay abreast of the population of facilities subject to the PCWP NESHAP.

Using information from the 2017 ICR with more recent updates, as needed, the EPA assessed emissions test data needs to establish standards for unregulated HAPs. On February 28, 2022, the EPA requested emissions testing and other information in a CAA section 114 survey of 20 PCWP facilities operated by 9 companies. The purpose of the 2022 survey was to gather additional data to use along with the 2017 ICR data to establish emission standards for unregulated HAP. The EPA used information from both the 2017 ICR and 2022 survey to develop the standards proposed in this action. The data collected and used in this action are provided in the docket along with documentation of the analyses conducted.

III. Analytical Procedures and Decision Making

The MACT standards proposed in this action were developed pursuant to CAA section 112(d)(2) and (3) or, when appropriate, CAA section 112(h). When developing MACT standards, the ''MACT floor'' for existing sources is calculated based on the average performance of the best performing units in each category or subcategory and on a consideration of the variability of HAP emissions from these units. The MACT floor for new sources is based on the emissions levels that are achieved by the best performing similar source, with a similar consideration of variability. For existing sources, the MACT floor is based on the average emission limitation achieved by the best performing 12 percent of sources (for which the EPA has emissions information) for source categories or subcategories with 30 or more sources, or the average emission limitation achieved by the best performing 5 sources (for which the EPA has or could reasonably obtain emissions information) for categories or subcategories with fewer than 30 sources. To account for variability in PCWP manufacturing operations and resulting emissions, we calculated the MACT floors using the 99 percent Upper Prediction Limit (UPL) using available stack test data.[1] We note that the MACT floors for certain existing and new units are based on limited data sets.[2]

The UPL approach addresses variability of emissions data from the best performing source or sources in setting MACT standards. The UPL also accounts for uncertainty associated with emission values in a dataset, which can be influenced by components such as the number of samples available for developing MACT standards and the number of samples that will be collected to assess compliance with the emission limit. The UPL approach has been used in many environmental science applications. As explained in more detail in the UPL Memo,[3] the EPA uses the UPL approach to reasonably estimate the emissions performance of the best performing source or sources to establish MACT floor standards.

Once the UPL is calculated for a pollutant, the representative detection limit (RDL) for the pollutant measurement method is considered, if necessary. The RDL is representative of the laboratory instrument sensitivity and lowest industry-standard method detection limits (MDL) achieved when analyzing air pollutant samples. Consideration of the RDL is necessary when pollutants are measured near or below the detection limit of the analysis method, which was the case for some HAP measured in the 2022 survey. The EPA compares a value of 3 times the RDL (3xRDL)[4] of the test method to UPL values to ensure that the calculated MACT floors account for measurement variability. If the 3xRDL value exceeds the MACT floor UPL, the 3xRDL value is substituted as the MACT floor emission limit to ensure that the standard is set no lower than the minimum level at which emissions can reliably be measured. For the cases where we had low detection data, we reviewed the memorandum, *Data and procedure for handling below detection level data in analyzing various pollutant emissions databases for MACT and RTR emissions limits,* which describes the procedure for handling below detection level (BDL) data and developing RDL data when setting MACT emission limits.[5]

In addition, under CAA section 112(d)(2), the EPA must examine more stringent ''beyond-the-floor'' regulatory options to determine MACT. Unlike the floor minimum stringency requirements, the EPA must consider various impacts of the more stringent regulatory options in determining whether MACT standards are to reflect beyond-the-floor requirements. These impacts include the cost of achieving additional emissions reduction beyond that achieved by the MACT floor, any non-air quality health and environmental impacts that would result from imposing controls beyond the floor, and energy requirements of such beyond floor measures. If the EPA concludes that the more stringent regulatory options have unreasonable impacts, the EPA selects the MACT floor as MACT. However, if the EPA concludes that impacts associated with beyond-the-floor levels of control are reasonable in light of additional HAP emissions reductions achieved, the EPA selects those levels as MACT.

For some process types, it is not feasible to prescribe or enforce a numerical emission standard using the MACT floor and MACT determination approach described in CAA sections 112(d)(2) and (3). According to CAA section 112(h)(1), MACT standards may take the form of design, equipment, work practice, or operational standards if it is not feasible in the judgment of the Administrator to prescribe or enforce an emission standard. To support a determination that it is not feasible to prescribe or enforce an emission standard, CAA sections 112(h)(2)(A) and (B) require the EPA to determine that either: (A) a HAP or pollutants cannot be emitted through a conveyance designed and constructed to emit or capture such pollutant, or that any requirement for, or use of, such a conveyance would be inconsistent with any federal, state or local law, or (B) the application of measurement methodology to a particular class of

[1] For more information regarding the general use of the UPL and why it is appropriate for calculating MACT floors, see *Use of Upper Prediction Limit for Calculating MACT Floors* (UPL Memo), in the docket for this action.

[2] See the memorandum, *Approach for Applying the Upper Prediction Limit to Limited Datasets,* in the docket for this action.

[3] See *Use of Upper Prediction Limit for Calculating MACT Floors* (UPL Memo), in the docket for this action.

[4] The factor of 3 used in the 3xRDL calculation is based on a scientifically accepted definition of level of quantitation—simply stated, the level where a test method performs with acceptable precision. The level of quantitation has been defined as 10 times the standard deviation of 7 replicate analyses of a sample at a concentration level close to the MDL units of the emission standard. That level is then compared to the MACT floor value to ensure that the resulting emission limit is in a range that can be measured with reasonable precision. In other words, if the 3xRDL value were less than the calculated floor (*e.g.,* calculated from the UPL), we would conclude that measurement variability has been adequately addressed; if it were greater than the calculated floor, we would adjust the emissions limit to comport with the 3xRDL value to address measurement variability.

[5] Westlin/Merrill 2011. *Data and procedure for handling below detection level data in analyzing various pollutant emissions databases for MACT and RTR emissions limits.* December 13, 2011, in the docket for this action.

sources is not practicable due to technological and economic limitations.

IV. Analytical Results and Proposed Decisions

Section IV.A of this preamble discusses the standards the EPA is proposing for combustion-related HAP emissions (non-Hg metals, Hg, HCl, PAH, and D/F) from direct-fired PCWP dryers, including rotary strand dryers, green rotary dryers, dry rotary dryers, tube dryers, and softwood veneer dryers. Section IV.B discusses the standards we are proposing for all HAP from lumber kilns. Section IV.C discusses the total HAP standards we are proposing for various process units other than lumber kilns that also had ''no control'' MACT determinations in the 2004 NESHAP that were remanded and vacated. Section IV.D discusses the standards we are proposing for process units with MDI emissions, including reconstituted wood products presses, blow-line blend tube dryers, and miscellaneous coating operations.

A. What MACT standards are we proposing for direct-fired PCWP dryers?

1. Overview

Direct-fired dryer types. Direct-fired dryers are heated by the passing of combustion exhaust through the dryer such that the wood material being dried is contacted by the combustion exhaust. Direct-fired dryers emit combustion-related HAP because emissions from fuel burning pass through the dryer and the dryer's air pollution control system. There are different designs of PCWP dryers defined in 40 CFR 63.2292 of the PCWP NESHAP, including the following types of direct-fired dryers: rotary strand dryers, green rotary dryers, dry rotary dryers, tube dryers, softwood veneer dryers (heated zones), fiberboard mat dryers (heated zones), and hardboard ovens. Most PCWP direct-fired dryers are fired with wood residuals or natural gas (or some combination of the 2 fuels). Wood residual fuels include bark, resin-free residuals, residuals containing resin (*e.g.,* PCWP sander dust and trimmings) and mixtures of these wood fuels. Far less commonly for PCWP dryers, wood-derived syngas, propane, or fuel oil may be used.

In addition to the differences in fuel (*e.g.,* wood residuals and natural gas) there are differences in drying system configurations. For example, direct-fired PCWP dryers can be designed with an individual natural gas or wood-fired suspension burner dedicated to a single dryer. Other configurations include a combustion unit providing heat to multiple dryers. At some facilities, multiple combustion units are used to direct-fire one or more dryers. Based on a review of the design differences, 2 subcategories for setting MACT standards are being proposed for direct-fired PCWP dryers: (1) wood and other fuel-fired dryers; and (2) natural gas fuel-fired dryers. We are proposing these subcategories of PCWP dryers because combustion units firing wood residuals have different design and combustion-related HAP emissions profiles from those firing natural gas (or propane). Based on emission estimates collected with the 2017 ICR, emissions of non-Hg HAP metals, Hg, inorganic gaseous HAPs (HCl, hydrogen fluoride (HF), and chlorine (Cl_2)), D/F, and PAH in the PCWP source category are predominantly associated with wood residual combustion in direct wood-fired dryers. Subcategorization by fuel type is consistent with other NESHAPs, including the major source boiler NESHAP at 40 CFR part 63, subpart DDDDD (the Boiler MACT), where EPA subcategorized based on the primary fuel combusted in the process and the resulting differences in HAP emissions.[6] We are proposing to add the following definitions to the PCWP NESHAP to support subcategorization of direct-fired PCWP dryers:

PCWP dryer means each dry rotary dryer, green rotary dryer, tube dryer, rotary strand dryer, hardboard oven, or press predryer; or the heated zones from a softwood or hardwood veneer dryer, conveyor strand dryer, or fiberboard mat dryer.

Direct wood-fired PCWP dryer means a direct-fired PCWP dryer in which 10 percent or more of the direct-fired annual heat input results from combustion of wood-derived fuel such as bark, wood residuals, or wood-derived syngas or any other fuel except for natural gas (or propane).

Direct natural gas-fired PCWP dryer means a direct-fired PCWP dryer (including each dry rotary dryer, green rotary dryer, tube dryer, rotary strand dryer, hardboard oven, press predryer or heated zones from a softwood or hardwood veneer dryer, conveyor strand dryer, or fiberboard mat dryer) in which greater than 90 percent of the direct-fired annual heat input results from natural gas (or propane) combustion.

In addition, we are proposing the same definition of natural gas that is used in the Boiler MACT. Wood residuals are typically an onsite industrial byproduct instead of a purchased fuel. Further subcategorization based on the specific type of wood fuel used is not recommended because it is common for wood-residual mixtures to be used. Wood-derived syngas is considered part of the wood and other fuel subcategory although it is not currently used to direct-fire PCWP dryers (other than lumber kilns, which are discussed in section IV.B of this preamble). All other fuel types (fuel oil, *etc.*) are uncommon in PCWP direct-fired dryers but were included with the ''wood and other fuel'' subcategory to ensure that all fuels are covered under the standards in the absence of emissions data specific to other fuels. We are not proposing further subcategorization based on combustion unit design because of the large number of combustion unit and dryer combinations that exist, because there would be few units in each subcategory for which separate standards at both existing and new sources would need to be developed.

Format of emission limits (units of measure). Each emission limit is proposed in 2 formats: (1) concentration; and (2) mass per production. Concentration units include grains per dry standard cubic foot (gr/dscf) for PM and milligrams per dry standard cubic meter (mg/dscm) for non-PM pollutants. The concentration units of measure are neutral to the type of process and are relevant regardless of whether processes of multiple types are co-controlled with PCWP dryers. Mass per production units are pounds per thousand square feet (lb/MSF) for softwood veneer dryers and pounds per oven dried ton (lb/ODT) for all other dryer types. Mass per time (*e.g.,* pounds per hour) was not considered as an emission limit format because of the need to normalize emissions for the different process throughputs across facilities in the industry. Mass per production units such as lb/ODT or lb/MSF standardize mass emission rates, so they are applicable to dryers across multiple facilities and reflect MACT across a range of production rates. These units of measure are commonly used for PCWP emission factors.

Emission limits were developed in 2 formats to provide compliance options based on what is achieved by the best performing systems. The 2 formats proposed provide flexibility for the various process configurations subject to the limits and are also helpful because some dryers may not be readily equipped for oven-dried production rate measurements at the dryer.

Ranking dryer systems by performance level. Direct-fired PCWP dryers have numerous drying system configurations. The overall drying system includes the interconnected

[6] 75 FR 32017, June 4, 2010.

combustion unit(s), dryer(s), and air pollution control devices (APCDs). Within any drying system there can be 1 or more combustion units, 1 or more dryers, and 1 or more APCDs of different types in series or parallel. Given the different combinations of dryers and APCDs, we evaluated each set of interconnected combustion units, dryers, and APCDs venting to the same emission point(s) as a single drying system for purposes of evaluating and ranking performance level. For example, 5 dryers venting to one HAP APCD are part of 1 drying system with the HAP emission limitation achieved determined at the outlet of the HAP APCD. By ranking each system, the outlet emission level for the system is considered in the MACT ranking 1 time for the entire system, not 5 times for each dryer in the system. The systems approach was used to ensure that the various equipment combinations from the best performing facilities are accounted for in establishing the MACT limits.

To determine the performance level of a dryer system, we took the average of all available lb/production test runs at the APCD outlet. For dryer system control configurations with multiple APCD outlets, we summed the lb/production numbers from each outlet stack to arrive at the total emissions performance level for the dryer system. Once the lb/production performance level for each dryer system was determined, the dryer systems were ranked to identify the best performing systems (*i.e.,* those with the lowest emissions).

There are fewer than 30 of each type of wood-fired dryer system. When there are fewer than 30 sources, the MACT floor for existing sources is the average emission limitation achieved by the best performing 5 sources (for which the Administrator has or could reasonably obtain emissions information), and the MACT floor for new sources is the emission control achieved in practice by the best controlled similar source. When evaluating MACT floors for the PCWP dryers, if we had performance data for more than 5 dryer systems, we used the 5 systems with the lowest lb/production performance levels for calculating the existing source MACT floor. We used the single best performing system with the lowest lb/production performance level to calculate the new source MACT floor. The MACT floors in terms of emissions concentration were based on the same dryer system rankings.

2. PM and Non-Hg Metals

The EPA is proposing filterable particulate matter (PM) standards as a surrogate for non-Hg HAP metals from wood-fired PCWP dryers. Filterable PM is commonly used as a surrogate for HAP metals in particulate form including antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, manganese, nickel, and selenium. Air pollution control devices that reduce PM also reduce non-Hg HAP metals in particulate form. Emissions testing for speciated HAP metals and PM from wood-fired PCWP dryers was conducted using EPA Method 29 as part of the 2022 CAA section 114 survey. The speciated HAP metals were found to be present in the wood-fired PCWP dryer exhaust at levels above the detection limit. The 2022 test data, along with PM data from prior test reports collected by EPA in the 2017 and 2022 PCWP CAA section 114 surveys, were used to develop the MACT floors discussed in this section of the preamble.

Rotary strand dryers. There are 27 direct wood-fired rotary strand dryer systems in the U.S. including 1 dryer system at a synthetic area source. Emissions data for PM are available for 13 direct wood-fired rotary strand dryer systems. Because there are fewer than 30 direct wood-fired rotary strand dryer systems, the UPL MACT floor calculations for existing sources were based on the 5 best performing systems. The UPL MACT floor calculation for new sources was based on the best performing system. After comparing the UPL calculations to the corresponding 3xRDL limits, the PM MACT floor for existing sources, based on the UPL, is 9.9E–02 lb/ODT or 3.6E–03 gr/dscf and the PM MACT floor for new sources, based on 3xRDL, is 2.8E–02 lb/ODT or 7.0E–04 gr/dscf. The 3xRDL value was substituted for the lb/ODT UPL in the new source MACT floor to ensure that the standards are established at the minimum level at which emissions can be measured reliably.

Most of the direct wood-fired rotary strand dryer systems at major sources in the U.S. already operate with PM and HAP control technology (*e.g.,* wet electrostatic precipitator followed by a regenerative thermal oxidizer, WESP/RTO). The use of WESPs for PM control upstream of HAP controls on PCWP rotary strand dryers is prevalent because of the high moisture exhaust stream and nature of the particulate originating from dryers (*e.g.,* sticky, flammable). Other PM controls such as baghouses are not well-suited for controlling PM from these sources. No options more stringent than the MACT floor for existing or new sources were identified.

Some existing sources are expected to need to upgrade their WESP to meet the existing source MACT floor. One rotary strand dryer system with an ESP but no additional HAP control device was assumed to need to install a WESP to meet the PM MACT floor and an RTO to achieve the PAH MACT floor (discussed under rotary strand dryers in section IV.A.5 of this preamble). An estimated 0.32 tpy of non-Hg HAP metals would be reduced from existing sources.

Two new OSB facilities with direct wood-fired rotary stand dryer systems are projected to be constructed within the next 5 years. The PM MACT floor for new rotary strand dryer systems is achievable with a very well-performing WESP/RTO system. An estimated 0.073 tpy non-Hg HAP metals would be reduced from new sources.

Green rotary dryers. There are 7 direct wood-fired green rotary dryer systems in the PCWP source category. Emissions data for PM are available for 5 direct wood-fired green rotary dryer systems. Because there are fewer than 30 direct wood-fired green rotary dryer systems, the UPL MACT floor calculations for existing sources were based on all 5 systems. The UPL MACT floor calculation for new sources was based on the best performing system. The PM MACT floor for existing direct wood-fired green rotary dryer systems is 2.2E–01 lb/ODT or 1.2E–02 gr/dscf and the PM MACT floor for new sources is 2.5E–02 lb/ODT or 1.2E–03 gr/dscf. The wood-fired green rotary dryer systems in the PCWP source category already operate with PM and HAP control technology (*e.g.,* WESP/RTO or equivalent). No options more stringent than the MACT floor for existing or new sources were identified. Zero HAP reduction is estimated because all existing and new direct wood-fired green rotary dryers are expected to meet their floors with baseline control.

Dry rotary dryers. There are 9 direct wood-fired dry rotary dryer systems in the PCWP source category. Emissions data for PM are available for 7 dry rotary dryer systems. Because there are fewer than 30 direct wood-fired dry rotary dryer systems, the UPL MACT floor calculations for existing sources were based on the 5 best performing systems. The UPL MACT floor calculation for new sources was based on the best performing system. The PM MACT floor for existing direct wood-fired dry rotary dryer systems is 5.8E–01 lb/ODT or 3.4E–02 gr/dscf and the PM MACT floor for new sources is 2.9E–01 lb/ODT or 2.2E–02 gr/dscf. The MACT floor is based on the current level of PM control (*i.e.,* mechanical collection) in use for existing wood-fired dry rotary dryer systems. All of the existing wood-fired dry rotary dryer systems are expected to meet the PM MACT floor. Therefore, the HAP reduction for the existing PM MACT floor is zero. No new direct wood-fired dry rotary dryers are projected in the next 5 years.

We considered a beyond-the-floor option to achieve further PM reduction from existing or new direct wood-fired dry rotary dryers through the use of a WESP. A WESP could be used alone or as part of a WESP/RTO system (as discussed in section IV.A.5 of this preamble as a beyond-the-floor measure for PAH emissions) to enable the dry rotary dryers to meet the same PM limits as required for green rotary dryers. In considering this beyond-the-floor option, we also considered costs, non-air quality health and environmental impacts, and energy requirements of potentially imposing it as a MACT requirement. Nationwide costs of the beyond-the-floor option for existing direct wood-fired dry rotary dryers are estimated to be a one-time capital cost of $42 million, and annual costs of $10 million per year to install and operate a WESP. Nationwide emission reductions are estimated to be 56 tpy of PM and 0.17 tpy of non-Hg HAP metals, for a cost effectiveness of $181,000 per ton of PM reduced and $61 million/ton of non-Hg HAP metals reduced. Nationwide use of a WESP to control wood-fired dry rotary dryer non-Hg metals would consume an estimated 23,000 megawatt-hours per year (MWhr/yr) of electricity (with associated secondary air emissions), generate 21 million gallons of wastewater per year, and produce 4,000 tons of solid waste of per year. After considering the costs, environmental, and energy impacts of the beyond-the-floor option, the EPA is proposing that the MACT floor represents MACT for PM (non-Hg metals) from direct wood-fired dry rotary dryers due to the high costs and unfavorable cost effectiveness of the more stringent option.

Tube dryers. There are 11 direct wood-fired primary tube dryer systems in the PCWP source category. Emissions data for PM are available for 6 direct wood-fired primary tube dryer systems, 2 of which have emissions from a secondary tube dryer venting into the primary tube dryer. Because there are fewer than 30 direct wood-fired tube dryer systems, the UPL MACT floor calculations for existing sources were based on the 5 best performing systems. The UPL MACT floor calculation for new sources was based on the best performing system. The PM MACT floor for existing direct wood-fired tube dryer systems is 3.1E–01 lb/ODT or 3.1E–03 gr/dscf and the PM MACT floor for new sources is 2.0E–02 lb/ODT or 1.3E–03 gr/dscf. No options more stringent than the MACT floor for existing or new sources were identified because the primary tube dryer systems in the U.S. already operate with PM controls (WESP, baghouse, scrubber, *etc.*) and HAP control technology (RTO or biofilter). Zero HAP reduction is estimated because all existing and new direct wood-fired tube dryers are expected to meet their respective PM MACT floors with baseline control.

Softwood veneer dryer heated zones. There are 3 softwood veneer dryer systems with direct wood-fired heated zones in the PCWP source category. Emissions data for PM are available for one direct wood-fired softwood veneer dryer system. Since the UPL calculation for existing and new sources was based on data from one system, the UPL results for existing and new sources are the same. The PM MACT floor for existing and new direct wood-fired softwood veneer dryer systems is 7.2E–02 lb/MSF 3/8'' or 1.5E–02 gr/dscf. We did not identify any options more stringent than the MACT floor for existing or new softwood veneer dryer systems. All existing direct wood-fired softwood veneer dryers are expected to meet the existing floor using the control technology already installed; therefore, the HAP reduction for the existing floor is zero. Nationwide HAP reductions of the proposed PM MACT floor for new sources were not estimated because no new direct wood-fired dry softwood veneer dryers are projected in the next 5 years.

3. Mercury (Hg)

Emissions testing for Hg from wood-fired PCWP dryers was conducted using EPA Method 29 as part of the 2022 CAA section 114 survey. The data from this testing was used to develop the MACT floors described in this section of the preamble. Method 29 collects multiple sample fractions that are combined to determine Hg emissions. All of the Hg test runs for PCWP dryers were detection level limited (DLL), meaning 1 or more sample fractions from each run contained no detectable Hg. For the purpose of setting MACT standards, the EPA considers DLL test runs to contain detectable emissions. The EPA is proposing Hg emission limits for direct wood-fired PCWP dryers because all of the Method 29 test runs had at least 1 sample fraction in which Hg was detected.

The baseline level of Hg control for PCWP rotary strand, green rotary, tube, and softwood veneer dryers is typically a PM and HAP control device in series (*e.g.,* WESP/RTO or similar). For dry rotary dryers, the baseline level of control is a mechanical collector (*e.g.,* multiclone). Due to the low levels of Hg emissions from PCWP dryers, which were usually below 3xRDL of the measurement method, the minimum level at which emissions can reliably be measured, all PCWP dryers are expected to meet the Hg MACT floors for existing and new sources with the baseline level of control. No regulatory options more stringent than the Hg MACT floors for existing or new wood-fired PCWP dryers were identified.

Rotary strand dryers. Emissions data for Hg are available for 6 direct wood-fired rotary strand dryer systems. Because there are fewer than 30 direct wood-fired rotary strand dryer systems, the UPL MACT floor calculations for existing sources were based on the 5 best performing systems. The UPL MACT floor calculation for new sources was based on the best performing system. After comparing the UPL calculations to the corresponding 3xRDL limits, the Hg MACT floor for existing direct wood-fired rotary strand dryer systems is 1.6E–05 lb/ODT or 8.4E–04 mg/dscm, and the Hg MACT floor for new sources is 1.6E–05 lb/ODT or 8.4E–04 mg/dscm. The 3xRDL values were substituted for both UPLs in the existing and new source MACT floors to ensure the standards are established at the minimum level at which emissions can be measured reliably. No additional Hg reductions are estimated.

Green rotary dryers. Emissions data for Hg are available for 4 direct wood-fired green rotary dryer systems. Because there are fewer than 30 direct wood-fired green rotary dryer systems, the UPL MACT floor calculations for existing sources were based on all 4 systems. The UPL MACT floor calculation for new sources was based on the best performing system. After comparing the UPL calculations to the corresponding 3xRDL limits, the Hg MACT floor for existing direct wood-fired green rotary dryer systems, based on the UPL, is 1.3E–05 lb/ODT or 1.1E–03 mg/dscm, and the Hg MACT floor for new sources, based on 3xRDL, is 1.1E–05 lb/ODT or 8.4E–04 mg/dscm. The 3xRDL value was substituted for the UPL in the new source MACT floor to ensure that the standards are established at the minimum level at which emissions can be measured reliably. No additional Hg reductions are estimated.

Dry rotary dryers. Emissions data for Hg are available for 3 direct wood-fired dry rotary dryer systems. Because there are fewer than 30 direct wood-fired dry rotary dryer systems, the UPL MACT floor calculations for existing sources were based on all 3 systems. The UPL MACT floor calculation for new sources was based on the best performing system. After comparing the UPL calculations to the corresponding 3xRDL limits, the Hg MACT floor for existing and new direct wood-fired dry rotary dryer systems, based on 3xRDL, is 9.9E–06 lb/ODT or 8.4E–04 mg/dscm. The 3xRDL values were substituted for both UPLs in the existing and new source MACT floors to ensure that the standards are established at the minimum level at which emissions can be measured reliably. No additional Hg reductions are estimated.

Tube dryers. Emissions data for Hg are available for 5 direct wood-fired primary tube dryer systems, 1 of which has emissions from a secondary tube dryer venting into the primary tube dryer. Because there are fewer than 30 direct wood-fired tube dryer systems, the UPL MACT floor calculations for existing sources were based on all 5 systems. The UPL MACT floor calculation for new sources was based on the best performing system. After comparing the UPL calculations to the corresponding 3xRDL limits, the Hg MACT floor for existing direct wood-fired tube dryer systems is 2.7E–05 lb/ODT or 1.6E–03 mg/dscm, and the Hg MACT floor for new sources is 2.7E–05 lb/ODT or 8.4E–04 mg/dscm. The 3xRDL values were substituted for the lb/ODT UPLs in the existing and new source MACT floors and for the concentration UPL in the new source floor to ensure that the standards are established at the minimum level at which emissions can be measured reliably. No additional Hg reductions are estimated.

Softwood veneer dryers. Emissions data for Hg are available for 1 direct wood-fired softwood veneer dryer system. Because the UPL calculation for existing and new sources was based on data from one system, the UPL results for existing and new sources are the same. The Hg MACT floor for existing and new direct wood-fired softwood veneer dryer systems is 5.8E–05 lb/MSF 3/8'' or 4.1E–02 mg/dscm. No additional Hg reductions are estimated.

4. Acid Gases

Emissions testing for HCl, HF, and Cl_2 from wood-fired PCWP dryers was conducted using EPA Method 26A as part of the 2022 CAA section 114 survey. Emissions of HF were below detection limit (BDL) in 99 percent of the EPA Method 26A test runs. Chlorine emissions were BDL in 65 percent of the test runs. Emissions of HCl were detected in 71 percent of the EPA Method 26A test runs. No acid gas emissions were detected from the wood-fired softwood veneer dryer tested, and we are, therefore, not proposing acid gas standards for this subcategory. Based on the available data, we are proposing acid gas emission limits in terms of HCl emissions from direct wood-fired rotary strand dryers, green rotary dryers, dry rotary dryers, and tube dryers. The data from the 2022 emissions testing were used to develop the MACT floors discussed in this section of the preamble.

Rotary strand dryers. Emissions data for HCl are available for 6 direct wood-fired rotary strand dryer systems. Because there are fewer than 30 direct wood-fired rotary strand dryer systems, the UPL MACT floor calculations for existing sources were based on the 5 best performing systems. The UPL MACT floor calculation for new sources was based on the best performing system. After comparing the UPL calculations to the corresponding 3xRDL limits, the HCl MACT floor for existing direct wood-fired rotary strand dryer systems is 5.8E–03 lb/ODT or 1.5E–02 mg/dscm and the HCl MACT floor for new sources is 1.7E–03 lb/ODT or 1.0E–01 mg/dscm. The 3xRDL values were substituted for the UPLs in the new source MACT floor to ensure that the standards are established at the minimum level at which emissions can be measured reliably. No options more stringent than the MACT floor were identified for existing or new rotary strand dryers. Zero emissions reduction is estimated because all existing direct wood-fired dry rotary dryers are expected to meet the HCl MACT floor with current controls.

The HCl MACT floor for new wood-fired rotary strand dryers is about 10 percent lower than the average HCl emissions from rotary strand dryer systems included in the CAA section 114 tests. Although below the average performance level of dryers tested, the HCl MACT floor emission level (based on the UPL) has been achieved by 3 rotary strand dryers with WESP control and a rotary strand dryer with a multiclone. Thus, the new source MACT floor for rotary strand dryers is expected to be met with a well-performing WESP system. An example of a well-performing WESP is one that incorporates caustic addition (*e.g.,* 1 percent) into the WESP recirculation water and has increased blowdown. The incremental HCl emission reduction estimated for new wood-fired rotary strand dryers using an upgraded WESP is 0.072 tpy.

Green rotary dryers. Emissions data for HCl are available for 4 direct wood-fired green rotary dryer systems. Because there are fewer than 30 direct wood-fired green rotary dryer systems, the UPL MACT floor calculations for existing sources were based on all 4 systems. The UPL MACT floor calculation for new sources was based on the best performing system. After comparing the UPL calculations to the corresponding 3xRDL limits, the HCl MACT floor for existing direct wood-fired green rotary dryer systems is 6.5E–03 lb/ODT or 9.7E–01 mg/dscm, and the HCl MACT floor for new sources is 2.9E–03 lb/ODT or 1.0E–01 mg/dscm. The 3xRDL value was substituted for the concentration UPL in the new source MACT floor to ensure that the standards are established at the minimum level at which emissions can be measured reliably. No options more stringent than the MACT floor were identified for existing or new green rotary dryers, which are already well-controlled. Zero emissions reduction is estimated because all existing and new direct wood-fired green rotary dryers are expected to meet their respective HCl MACT floors with baseline controls.

Dry rotary dryers. Emissions data for HCl are available for 3 direct wood-fired dry rotary dryer systems. Because there are fewer than 30 direct wood-fired dry rotary dryer systems, the UPL MACT floor calculations for existing sources were based on all 3 systems. The UPL MACT floor calculation for new sources was based on the best performing system. After comparing the UPL calculations to the corresponding 3xRDL limits, the HCl MACT floor for existing and new direct wood-fired dry rotary dryer systems is 1.10E–03 lb/ODT or 1.0E–01 mg/dscm. The 3xRDL values were substituted for both UPLs in the existing and new source MACT floors to ensure that the standards are established at the minimum level at which emissions can be measured reliably. No options more stringent than the MACT floor were identified for existing or new dry rotary dryers because the MACT floors are based on 3xRDL (*i.e.,* the minimum level at which emissions can reliably be measured). Zero emissions reduction is estimated because all existing direct wood-fired dry rotary dryers are expected to meet the existing HCl MACT floor. No new units are projected in the next 5 years.

Tube dryers. Emissions data for HCl are available for 5 direct wood-fired primary tube dryer systems, one of which has emissions from a secondary tube dryer venting into the primary tube dryer. Because there are fewer than 30 direct wood-fired tube dryer systems, the UPL MACT floor calculations for existing sources were based on all 5 systems. The UPL MACT floor calculation for new sources was based on the best performing system. After comparing the UPL calculations to the corresponding 3xRDL limits, the HCl MACT floor for existing direct wood-fired tube dryer systems is 6.4E–03 lb/ODT or 7.4E–01 mg/dscm, and the HCl MACT floor for new sources is 2.3E–03 lb/ODT or 1.0E–01 mg/dscm. The 3xRDL values were substituted for the UPLs in the new source MACT floor to ensure that the standards are established at the minimum level at which emissions can be measured reliably.

Existing and new wood-fired tube dryer systems are expected to meet the HCl MACT floors with the baseline controls, which typically incorporate a WESP or scrubber. No options more stringent than the existing and new source MACT floors were identified for primary tube dryers. All existing and new direct wood-fired tube dryers are expected to meet their HCl MACT floors; therefore, the HAP reduction for both floors is zero.

5. PAH

The EPA is proposing emission limits for PAH emissions that were detected in the exhaust from wood-fired rotary strand dryers, green rotary dryers, dry rotary dryers, and tube dryers. Emissions testing for PAH from wood-fired PCWP dryers was conducted using EPA Other Test Method 46 (OTM–46) as part of the 2022 CAA section 114 survey. EPA OTM–46 is nearly identical to the updated EPA Method 23, for which revisions were promulgated on March 20, 2023 (88 FR 16732). The data from the 2022 testing was used to develop the MACT floors discussed in this section of the preamble. The PAH MACT floors discussed here for wood-fired rotary strand dryers, green rotary dryers, dry rotary dryers, and tube dryers are greater than the corresponding 3xRDL values for PAH. For softwood veneer dryers, the 3xRDL value for PAH is proposed as MACT.

Rotary strand dryers. Emissions data for PAH are available for 6 direct wood-fired rotary strand dryer systems. Because there are fewer than 30 direct wood-fired rotary strand dryer systems, the UPL MACT floor calculations for existing sources were based on the 5 best performing systems. The UPL MACT floor calculation for new sources was based on the best performing system. The PAH MACT floor for existing direct wood-fired rotary strand dryer systems is 3.1E–04 lb/ODT or 2.7E–02 mg/dscm, and the PAH MACT floor for new sources is 3.9E–05 lb/ODT or 1.4E–03 mg/dscm. The PAH MACT floors are based on dryers that already have PM and HAP controls in series. Therefore, no options more stringent than the MACT floors were identified for existing or new sources.

Most existing wood-fired rotary strand dryer systems are expected to meet the PAH MACT floor with baseline PM and HAP controls in series. One rotary strand dryer system with an ESP but no additional HAP control device was assumed to need to add a WESP to meet the PM MACT floor and an RTO to achieve the PAH MACT floor. Nationwide emission reductions of the proposed MACT floor for PAH for existing direct wood-fired rotary strand dryers are estimated to be 0.043 tpy of PAH reduced and 130 tpy of VOC reduced.

New wood-fired rotary strand dryer systems are expected to be challenged to meet the stringent new source PAH MACT floor in spite of coming online with a WESP/RTO control system. While the new source MACT floor emission level based on the UPL has been achieved by rotary strand dryers with multiclone/RTO and WESP/RTO controls, the new source PAH MACT floor is 90 percent lower than the average PAH performance level achieved by the well-controlled rotary strand dryers in the CAA section 114 emission tests. The burner tune-up requirements required for all direct-fired PCWP dryers are expected to help with meeting the PAH MACT floor. Nationwide, 0.15 tpy of PAH reductions are estimated to be associated with the proposed PAH MACT floor.

Green rotary dryers. Emissions data for PAH are available for 4 direct wood-fired green rotary dryer systems. Because there are fewer than 30 direct wood-fired green rotary dryer systems, the UPL MACT floor calculations for existing sources were based on all 4 systems. The UPL MACT floor calculation for new sources was based on the best performing system. The PAH MACT floor for existing direct wood-fired green rotary dryer systems is 9.0E–03 lb/ODT or 4.1E–01 mg/dscm, and the PAH MACT floor for new sources is 2.6E–05 lb/ODT or 4.4E–03 mg/dscm. The PAH MACT floors are based on dryers that already have PM and organic HAP controls in series. Therefore, no options more stringent than the MACT floors were identified for existing or new sources. No reductions in PAH were estimated because existing wood-fired green rotary dryer systems are expected to meet the PAH MACT floor with baseline HAP controls. The burner tune-up requirements required for all direct-fired PCWP dryers are expected to help with meeting the PAH MACT floor. No options more stringent than the MACT floor were identified for new sources. No reductions in PAH are estimated because new direct wood-fired green rotary dryers are expected to meet the MACT floor with proper tuning.

Dry rotary dryers. Emissions data for PAH are available for 3 direct wood-fired dry rotary dryer systems. Because there are fewer than 30 direct wood-fired dry rotary dryer systems, the UPL MACT floor calculations for existing sources were based on all 3 systems. The UPL MACT floor calculation for new sources was based on the best performing system. The PAH MACT floor for existing direct wood-fired dry rotary dryer systems is 4.3E–04 lb/ODT or 3.9E–02 mg/dscm, and the PAH MACT floor for new sources is 2.5E–05 lb/ODT or 2.2E–03 mg/dscm.

All existing direct wood-fired dry rotary dryers are expected to meet the existing PAH MACT floor with the baseline controls (mechanical collection); therefore, the HAP reduction for the existing floor is zero. No new direct wood-fired dry rotary dryers are projected in the next 5 years. If a new wood-fired dry rotary dryer were to be installed, it is estimated that some facilities may need an RTO to meet the new source PAH MACT floor.

We considered a beyond-the-floor option for existing and new wood-fired dry rotary dryers to use a HAP control system that meets the limits in table 1B to subpart DDDD of 40 CFR part 63, which we anticipate would be based on use of a WESP/RTO system. The WESP would protect the RTO from particulate build up and is a beyond-the-floor option for PM for dry rotary dryers. The costs and other impacts of using a WESP on wood-fired dry rotary dryers were discussed in section IV.A.2 of this preamble. Nationwide costs of the beyond-the-floor option to reduce PAH from existing direct wood-fired dry rotary dryers using an RTO are estimated to be a one-time capital cost of $16 million and annual cost of $6.8 million per year. Nationwide HAP and VOC reductions for existing sources are estimated to be 18 tpy of organic HAP (including 0.016 tpy of PAH) and 282 tpy of VOC for a cost effectiveness of $383,000/ton of organic HAP reduced, $431 million/ton of PAH reduced, and $24,000/ton of VOC reduced. Nationwide energy impacts are estimated to be consumption of 23,000 MWhr/yr of electricity, with associated secondary air emissions, and 371,000 MMBtu/yr of natural gas. Nationwide wastewater (*e.g.,* for RTO washouts) and solid waste impacts are estimated to be 273,000 gallons of wastewater per year and 84 tons of solid waste of per year. Nationwide costs and impacts of the beyond-the-floor option for PAH for new direct wood-fired dry rotary dryers were not estimated as no new direct wood-fired dry rotary dryers are projected in the next 5 years.

After considering the costs, non-air quality environmental, and energy impacts of the beyond-the-floor option for PAH, we are proposing that MACT is represented by the PAH MACT floor. We rejected the more stringent beyond-the-floor option based on use of a WESP/RTO system because of its high costs, unfavorable cost effectiveness, energy usage, and non-air-quality environmental impacts.

Tube dryers. Emissions data for PAH are available for 5 direct wood-fired primary tube dryer systems, one of which has emissions from a secondary tube dryer venting into the primary tube dryer. Because there are fewer than 30 direct wood-fired tube dryer systems, the UPL MACT floor calculations for existing sources were based on all 5 systems. The UPL MACT floor calculation for new sources was based on the best performing system. The PAH MACT floor for existing direct wood-fired tube dryer systems is 3.0E–04 lb/ODT or 3.3E–03 mg/dscm, and the PAH MACT floor for new sources is 1.2E–05 lb/ODT or 6.3E–04 mg/dscm. The PAH MACT floors are based on tube dryer systems that already have PM and HAP controls in series. Therefore, no options more stringent than the MACT floors were identified for existing or new primary tube dryers. Because all existing and new direct wood-fired tube dryers are expected to meet their MACT floors for PAH with baseline HAP controls, zero HAP reduction is estimated.

Softwood veneer dryers. There are 3 softwood veneer dryer systems with direct wood-fired heated zones in the PCWP source category. Detectable PAH emissions are not expected from these dryers. Direct-wood fired softwood veneer dryers were not included in the CAA section 114 testing using EPA OTM–46 because veneer dryers operate at lower temperature with less mixing than rotary and tube dryers and, therefore, are not expected to have the same potential for formation of detectable PAH emissions as direct wood-fired rotary and tube dryers, which operate at higher temperatures under more turbulent conditions. However, given that PAH emissions were measured in the exhaust from other wood-fired PCWP dryers, absent PAH test data, we are proposing a PAH limit of 3.3E–05 mg/dscm based on 3xRDL for existing and new direct wood-fired softwood veneer dryers. We anticipate that this limit would be met through the same burner tune-up standards proposed to be required for all wood-fired dryers as well as using the incineration-based controls already in place on the softwood veneer dryers. Thus, no emission reductions are estimated, and no options more stringent than the 3xRDL value were identified for existing or new wood-fired softwood veneer dryers. The EPA requests submittal of available PAH emissions information for wood-fired softwood veneer dryers to help inform the final rule.

6. Burner Tune-Up Standards

The EPA is proposing burner tune-up standards to address dioxin/furan (D/F) from wood and other fuel fired dryers, any combustion-related HAP that may be emitted from natural-gas fired PCWP dryers, and any HAP from combustion unit bypass stacks. As discussed in section IV.B of this preamble, burner tune-ups are also being proposed as a standard for direct-fired lumber kilns to address combustion-related HAP from direct fuel firing and kiln combustion unit bypass stacks.

a. D/F From Wood-Fired PCWP Dryers

Emissions testing for D/F from wood-fired PCWP dryers was conducted using EPA OTM–46 as part of the 2022 CAA section 114 survey. The EPA conducted a detection limit evaluation on the D/F emissions test runs gathered from the 2022 CAA section 114 requests for wood-fired PCWP dryers. Over 70 percent of the D/F congener test runs were BDL. When considered on a toxic equivalency (TEQ) basis, 89 percent of test runs were below the 3xRDL value for TEQ. The EPA considers a work practice to be justified if a significant majority of emissions data available indicate that emissions are so low that they cannot be reliably measured (*e.g.,* more than 55 percent of test runs are non-detect).[7] Therefore, a work practice standard is being proposed for D/F from wood-fired PCWP dryers. The proposed work practice for existing and new PCWP dryers is an annual tune-up of the burners that provide direct heat to PCWP wood-fired dryers in order to ensure good combustion and, therefore, minimize emissions of organic HAP.

Nationwide HAP reductions of the proposed work practice for D/F for existing direct wood-fired PCWP dryers are estimated to be 5.9 tpy of all HAP reduced (including 2.43E–06 tpy of D/F). Nationwide HAP reductions of the proposed work practice for D/F for new and reconstructed direct wood-fired PCWP dryers are estimated to be 0.20 tpy of HAP reduced (including 1.34E–07 tpy of D/F).

b. Natural-Gas Fired PCWP Dryers

Combustion-related HAP emissions from combustion units burning natural gas to directly fire PCWP dryers are similar to emissions from boilers and process heaters that burn natural gas. Under the Boiler MACT, ''units designed to burn gas 1 fuels'' (*i.e.,* units burning natural gas) were required to conduct periodic tune-ups as part of a work practice for non-Hg HAP metals, Hg, acid gases, D/F, and organic HAP. As explained at 76 FR 15637–38 (March 21, 2011), measured emissions of these pollutants from natural gas-fired boilers and process heaters were routinely found to be below the detection limits of EPA test methods, and, as such, the EPA found it technically and economically impracticable to reliably measure emissions from these units. The combustion unit tune-up work practice was identified as an effective HAP emissions standard for natural gas-fired PCWP dryers that combust the cleanest fuels available. Based on that conclusion, we are proposing a burner tune-up work practice standard for combustion-related HAP, including non-Hg metals, Hg, acid gases, D/F, and PAH, from existing and new direct natural gas-fired PCWP dryers. In addition to the proposed burner tune-up work practice standard for combustion-related HAP from direct gas-fired PCWP dryers, the current emission standards for PCWP dryers (40 CFR 63.2240(b)) already limit organic HAP emissions, including organic HAP emitted from natural gas combustion and organic HAP from the drying process. Nationwide combustion HAP reductions of the proposed tune-up work practice standard are estimated to be 0.10 tpy for existing sources and 0.0073 tpy for new sources.

c. Combustion Unit Bypass Stacks

Combustion-related HAP emissions can be emitted for brief periods of time from bypass stacks located between a combustion unit and PCWP dryer (or lumber kiln) direct-fired by the combustion unit when the dryer (or kiln) is unable to accept the hot exhaust from the direct-firing combustion unit. It is not feasible to prescribe numeric emission standards for combustion-related HAP emissions briefly emitted from bypass stacks between the combustion unit and dryer (or lumber kiln). Emissions measurement methodologies, including stack tests

[7] See the June 5, 2014, memorandum, *Determination of 'non-detect' from EPA Method 29 (multi-metals) and EPA Method 23 (dioxin/furan) test data when evaluating the setting of MACT floors versus establishing work practice standards,* in the docket for this action.

which require hours to complete, are not feasible for PCWP combustion unit bypasses that last minutes at a time. Use of a continuous emission monitoring system (CEMS) to capture these events is not feasible due to calibration issues and the need to perform relative accuracy test audits (RATA), which involve stack tests. Establishing parameter limits correlated with emissions also is not feasible because this would be done through stack testing. Therefore, we are proposing a work practice standard for existing and new combustion bypass stacks associated with direct-fired PCWP dryers or direct-fired lumber kilns regardless of fuel type. The work practice standard would require an annual tune-up of the burner associated with the bypass stack, along with monitoring and reporting bypass stack usage. Bypass stack usage time would be monitored using an indicator such as bypass damper position or temperature in the bypass stack. No feasible options more stringent than burner tune-ups coupled with bypass stack usage monitoring were identified for existing or new combustion bypass stacks. No HAP reductions were estimated in conjunction with bypass stack monitoring.

B. What MACT standards are we proposing for lumber kilns?

The EPA is proposing standards to limit emissions of all HAP from lumber kilns. All HAP emissions would be limited by the work practices the EPA is proposing that would limit over-drying of lumber. Combustion-related HAP emissions from direct-fired kilns would be further limited by the proposed burner tune-up standards. Additional information on our review of information pertaining to lumber kilns is available in the memorandum, *Development of National Emission Standards for Hazardous Air Pollutant Emission Standards for Lumber Drying Kilns,* in the docket for this action.

1. Lumber Kiln Overview

Lumber kilns can be characterized by wood type (softwood or hardwood), design (batch or continuous), and heating method (indirect- or direct-fired). Although few hardwood lumber kilns are located at major sources, we are proposing to include both hardwood and softwood lumber kilns in the PCWP NESHAP so HAP standards would apply to any lumber kiln located at a PCWP or lumber facility that is a major source of HAP emissions.

In batch kilns, lumber is loaded into the kiln where it remains stationary during the entire drying cycle. When drying is complete, the batch kiln is shut down to remove the lumber. The kiln is restarted again after it is loaded with a new batch of lumber. Batch kilns can be either track-loaded, where multiple packages [8] of lumber are pushed into the kiln on tracks at once, or smaller package loaded kilns, where lumber packages are loaded in the batch kiln with a forklift. The track loaded kilns tend to have higher annual throughput and are the type of batch kilns most commonly used at major source PCWP facilities.

Batch kilns typically have numerous roof vents positioned in rows down each side of the kiln's roof. The vents open and close throughout the drying cycle as the temperature and humidity in the kiln change. Internal fans under the kiln roof circulate air around the packages of lumber. The fans change direction every 2 to 3 hours to provide even drying of the lumber. Consequently, one bank of roof vents is normally exhausting hot, moist air while the other row of vents is allowing ambient air into the kiln. The direction of flow cycles between air intake and exhaust throughout the drying cycle. Batch kilns release fugitive air emissions from doors or cracks in the kiln exterior due to pressure differences between the interior of the kiln and ambient conditions outside the kiln.

Over the past decade, continuous dry kilns (CDKs) have become popular for drying southern pine lumber in the U.S. Southeast. Unlike batch kilns, CDKs do not have to be shut down for loading and unloading. In CDKs, lumber travels continuously through the kiln on tracks. Most CDKs in the U.S. have a ''counter-flow'' design where 2 sets of lumber travel in opposite directions to one another such that on one end of the kiln green lumber enters the kiln parallel to dry lumber exiting the kiln. This design allows heat from the dried lumber coming out of the kiln to preheat the incoming green lumber to conserve energy. There are no doors on CDKs, allowing the constant flow of lumber into and out of each end of the kiln. Thus, CDKs release exhaust containing steam and fugitive emissions from their open ends. Some CDKs have powered or unpowered hoods or stacks over their openings to direct a portion (*e.g.,* 40 to 80 percent of the volume) of exhaust upward while the remaining exhaust exits through the kiln ends.

In addition to batch or continuous design, another key design feature of lumber kilns is their heating method. Indirect-fired kilns are heated with steam from a boiler. The steam circulates through coils in the path of air circulation within the kiln. Direct-fired kilns use hot gases from fuel combustion to heat the kiln such that the kiln exhaust contains emissions from wood drying and fuel combustion. Combustion units used to direct-fire kilns may be a dedicated burner for each kiln or a combustion unit that direct-fires multiple kilns. Fuels used to direct-fire kilns include natural gas, wood, or wood-derived syngas generated in a gasifier. Wood is often used for direct-fired lumber kilns because it is a readily available byproduct of lumber manufacturing and is typically generated onsite. Gasifiers typically use green sawdust generated from cutting logs into boards. The green sawdust is first gasified under sub-stoichiometric conditions to produce a syngas that is then burned in a secondary combustion chamber to directly fire the kiln. Regardless of fuel, combustion gases are usually too hot for direct introduction into the kiln, so they are diluted with recirculated kiln exhaust and ambient air in a blend box prior to introduction to the kiln.

The EPA has identified 680 lumber kilns at major source PCWP facilities subject to 40 CFR part 63, subpart DDDD, including:

- 11 batch, indirect-fired, hardwood kilns.
- 203 batch, indirect-fired, southern yellow pine (SYP) kilns.
- 241 batch, indirect-fired, other (*e.g.,* western) softwood kilns.
- 103 batch, direct-fired, SYP kilns.
- 98 continuous, direct-fired, SYP kilns.
- 24 continuous, indirect-fired, SYP kilns.

None of the lumber kilns identified operate with any add-on air pollution controls. Emission factors that have been adopted by regulatory agencies and lumber producers for emission estimation purposes were mostly derived from small-scale kiln tests and a few (often research-level) tests of full-scale kilns. This information is useful for estimating emissions for inventory reporting purposes but is not suitable for developing or enforcing national emission standards due to the impracticality of capturing and measuring lumber kiln emissions (discussed in more detail later in this preamble). A significant challenge to measuring batch and continuous lumber kiln emissions is accurate determination of the total lumber kiln gas flow rate and the need to extrapolate concentrations from 1 or 2 sampling locations to

[8] Packages are stacks of boards layered with small strips of wood called ''stickers'' to allow for air to circulate around the boards while the boards are drying in the kiln.

estimate total kiln emissions from several emission points (including fugitives).

Because of the infeasibility of lumber kiln emissions collection and control, and because of measurement challenges, many facilities and permit authorities have established work practices for limiting organic emissions from lumber kilns. Good design and operating practices were determined to be the best available control technology (BACT) for several lumber kilns. A review of BACT determinations for new and modified kilns is relevant because a work practice can be found as BACT only after a permitting authority finds that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make use of a numerical emission standard infeasible.[9] This finding is similar to the requirements under CAA section 112(h) for concluding that MACT is represented by a work practice or operational standard.

2. Rationale for Work Practices

Given the impracticability of capturing and measuring emissions from lumber kilns, we have concluded that the criteria in CAA section 112(h) for establishing a design, equipment, work practice, or operational standard apply for lumber kilns. CAA section 112(h) states that if it is not feasible in the judgment of the Administrator to prescribe or enforce an emission standard for control of a HAP, the Administrator may, in lieu thereof, promulgate a design, equipment, work practice, or operational standard, or combination thereof, which in the Administrator's judgment is consistent with the provisions of CAA section 112(d). The phrase ''not feasible to prescribe or enforce an emission standard'' is further defined in CAA section 112(h)(2)(A) and (B) as any situation in which the Administrator determines that: (A) a hazardous air pollutant or pollutants cannot be emitted through a conveyance designed and constructed to emit or capture such pollutant, or (B) the application of measurement methodology to a particular class of sources is not practicable due to technological and economic limitations.

Relative to CAA section 112(h)(2)(A), the total volume of lumber kiln emissions cannot be emitted through a conveyance that is designed and constructed to emit or capture HAP emissions. For example, batch kilns have numerous vents that cycle between air intake and exhaust in addition to some fugitive emissions that can be emitted from the kiln doors or walls. Batch kilns do not and cannot have conveyances to capture emissions from the exhaust vents or eliminate the air intake, as such conveyances would disrupt the drying process by limiting air flow into the kiln. If constructed, flow exiting a conveyance would be intermittent (cyclical) just as it is from each kiln vent, meaning a conveyance would not help with measuring emissions as needed to prescribe or enforce a numeric emission standard. Similarly, CDKs have considerable amounts of fugitive emissions from their openings that cannot be eliminated while allowing for lumber to enter and exit the kiln. While some CDKs have passive hoods or stacks (which may be powered or unpowered) at their ends to direct a fraction of the kiln exhaust upward to improve dispersion, these devices do not and cannot eliminate the fugitive emissions from the CDK openings. If powered stacks were added to draw more air out of the CDK in an attempt to eliminate the fugitives to obtain a reliable emissions measurement, the energy-transfer function of the CDK, in which heat and steam from the exiting lumber are used to precondition incoming lumber, would be lost. Thus, it is not possible to capture emissions from the openings at each end or directly measure the total gas flow rate from a CDK as needed to prescribe or enforce an emission limit.

Relative to CAA section 112(h)(2)(B), there are technological and economic limitations to applying a measurement methodology for lumber kilns as needed to prescribe or enforce a numeric emission standard. For batch kilns, with numerous vents cycling between air intake and exhaust, and temperature and humidity changes throughout the batch cycle, there is not a consistent flow rate or concentration to measure using conventional stack test methods or continuous emission monitors. Direct measurement of flow rate from batch kilns is not technically feasible because of the numerous vents and changing flow direction. In addition to the need to test multiple vents, an economic limitation to testing batch kilns is the expense associated with testing over the long batch kiln cycle (*e.g.,* often 20 or more hours) in which the emission concentration and kiln parameters change throughout the cycle. For CDKs, direct measurement of total kiln exhaust flow is not technically feasible due to the significant volume of fugitive emissions from the kiln openings. In addition to being unable to measure total flow, many CDKs have no specific emission point (or conduit) in which to measure emissions concentration (*e.g.,* no outlet stack or hood, or in an indirect-fired kiln no kiln air return duct to a burner). This lack of a specific emission point for measurement of total kiln air flow and concentration is also an economic limitation, because even if outlet vents suitable for testing were present for a portion of exhaust, all such vents would need to be tested to ensure uniformity of concentration or to establish vent-specific concentrations, which would greatly increase source testing costs (while total flow would continue to remain uncertain, limiting usefulness of the data for prescribing or enforcing an emission standard).

3. Lumber Kiln Work Practice Standard

Work practices to reduce emissions from lumber kilns are often based on measures to minimize the amount of over-dried lumber produced. Lumber over-drying is of concern because HAP emissions have been shown to increase after the free water from the lumber is removed. As the free water evaporates, water bound within the cellular structure of the wood begins to be removed. Once the evaporative cooling of moisture on the surface of lumber ceases, the temperature of the lumber in the kiln increases and organic HAP emissions begin to increase. A work practice that minimizes over-drying limits organic HAP emissions from all types of kilns as well as combustion-related HAP emissions from direct-fired kilns since minimizing over-drying reduces fuel consumption, which results in less combustion-related HAP.

To develop a work practice standard for lumber kilns, we reviewed various permits and other information, including information received from ICR respondents regarding design, operation, and monitoring methods to minimize over-drying and limit HAP emissions. Several permits included ''good operating practices'' and kiln inspection and maintenance requirements to minimize over-drying. We also found that lumber manufacturers use a variety of practices to ensure that lumber is properly dried while balancing energy usage. For many manufacturers, the focus is on ensuring

[9] The regulatory definition of BACT in 40 CFR 52.21(b)(12) states, ''If the Administrator determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible, a design, equipment, work practice, operational standard, or combination thereof, may be prescribed instead to satisfy the requirement for the application of best available control technology. Such standard shall, to the degree possible, set forth the emissions reduction achievable by implementation of such design, equipment, work practice or operation, and shall provide for compliance by means which achieve equivalent results.''

that the lumber meets grade classification, which can be accomplished using a variety of techniques. For example, to meet the moisture content grade ''KD19'' for southern pine lumber, manufacturers must dry lumber to a maximum of 19 percent moisture. There are moisture grades other than KD19, such as KD15 or lower, for lumber to be exported. Lumber or wooden poles that will later undergo treatment may be dried to higher moisture levels than KD19. To ensure that the maximum grade moisture is met by most boards in the kiln load, kiln operators need to dry to a target moisture a few percent below the maximum moisture grade. Methods used to determine dryness of lumber vary. Temperature parameters monitored in the kiln during drying (*e.g.,* wet or dry bulb temperature or temperature drop across the load) are used by kiln operators to determine when the drying cycle is complete. Temperature monitoring may be paired with hot checks in which sample boards are pulled from the kiln and checked for dryness near the end of the kiln cycle. In-kiln lumber moisture measurement during drying may be used, or lumber moisture may be checked with hand-held moisture meters after the drying cycle concludes. It is also common for lumber moisture measurement to be conducted downstream of the kiln (*e.g.,* hand-held moisture meter checks or in-line moisture monitoring at the planer before lumber is packaged for shipment). Of the methods available for determining lumber moisture, the in-line moisture meter at the planer typically produces the largest number of lumber moisture readings. Given different kiln designs and the wide variety of techniques used to determine lumber dryness, the work practice to limit over-drying in the kiln requires some flexibility for site-specific considerations.

Based on our review of methods for limiting lumber over-drying, in 40 CFR 63.2241(d) we are proposing a work practice standard with 4 elements: (1) operation and maintenance for all kilns, (2) burner tune-up for direct-fired kilns, (3) a work practice option in which all kilns limit over-drying by operating below a temperature set point, conducting in-kiln moisture monitoring, or following a site-specific plan (for temperature and lumber moisture monitoring), and (4) minimum kiln-dried lumber moisture content limits below which lumber is considered to be over-dried lumber for all kilns for purposes of the PCWP NESHAP.

Operation and maintenance (O&M) plan. For the first element of the work practice, we are proposing that facilities develop an O&M plan for all the lumber kilns located at the facility. Documentation of the O&M plan would be required to be retained onsite and to include procedures for maintaining the integrity of lumber kiln internal air flow and heat distribution components (*e.g.,* baffles, fans, vents, heating coils, and temperature sensors) to provide as uniform a temperature and air flow as reasonably possible. Maintaining the heat distribution components prevents hot spots that could lead to increased HAP emissions and also prevents cold spots in the kiln that could lengthen the drying cycle for the entire load, thereby avoiding higher HAP emissions. The O&M plan would be required to include charge optimization practices to promote uniformity in lumber charged into the kiln (*e.g.,* sizing, sorting, stickering, conditioning). Proper sorting results in less variation per kiln load that could lengthen the drying cycle and increase HAP emissions, and proper stickering ensures that air can flow through the lumber packages.[10] To demonstrate compliance with the O&M plan, the facility would be required to conduct an annual inspection of lumber kiln integrity and review the charge optimization practices used. Facilities would be required to implement corrective actions (as needed) and maintain records of inspections and corrective actions taken under the O&M plan. State authorities delegated responsibility for implementing 40 CFR part 63, subpart DDDD, (or ''delegated authorities'') may require modification of the O&M plan, as needed, upon review.

Kiln burner tune-up. For the second element of the work practice, we are proposing that facilities with batch and continuous direct-fired kilns conduct an annual burner tune-up to reduce the potential for combustion-related HAP emissions beyond the reduction in these emissions that results from minimizing lumber over-drying. Properly operating burners would reduce the potential for combustion-related HAP emissions from the kiln during routine operation and from any bypass stacks used temporarily during startup or shutdown of the kiln burner. We are proposing annual tune-ups for lumber kilns following the same procedures proposed for PCWP dryers.

Temperature, moisture, or site-specific plan limits. For the third element, we are proposing that facilities select from 1 of 3 work practice options for minimizing lumber over-drying for each kiln at the facility: (1) temperature set point, (2) in-kiln moisture monitoring, or (3) a site-specific plan (for temperature and lumber moisture monitoring). While the EPA could require a site-specific plan for all lumber kilns, we acknowledge that lumber kilns operating at moderate temperatures compared to kilns of similar design, or kilns equipped with in-kiln moisture monitoring, are already operating in a manner that minimizes rapid over-drying. Thus, we are proposing to provide two streamlined options (in lieu of requiring a site-specific plan) for lumber kilns operating at moderate temperatures or using in-kiln lumber moisture monitoring techniques that reduce the potential for over-drying. These options consider that over-drying can occur more rapidly in kilns operating at higher temperatures and/or without a direct in-kiln lumber moisture content measurement system that provides automatic feedback to the kiln operator. These options encompass kiln features likely to be included in a site-specific plan to minimize over-drying (if a plan were to be developed for the kiln). These compliance demonstration alternatives to a site-specific plan streamline compliance for kilns that have less potential for over-drying and reduce burden for the delegated authority reviewing the site-specific plan.

Under the temperature option, the lumber kiln would be operated with a maximum dry bulb temperature set point of no more than 210 °F for batch indirect-fired (IF) kilns, 235 degrees Fahrenheit (°F) for batch direct-fired kilns, or 245 °F for continuous indirect-fired or continuous direct-fired kilns. The proposed temperatures of 210 °F, 235 °F, and 245 °F represent both average and median dry bulb temperature used in lumber kilns in the source category that were within 5 °F of the proposed temperature. These temperatures are proposed because they represent temperatures below which approximately half of kilns operate while the remaining half of kilns operate at higher temperatures that could accelerate over-drying. Facilities would be required to continuously measure the dry bulb temperature during the kiln drying cycle, record the dry bulb temperature at least every 15 minutes, calculate the 3-hour block average temperature, and maintain the 3-hour block average below the temperature limit. See proposed 40 CFR 63.2269(a)–(b) and (m) and 40 CFR 63.2270(h) for more details on

[10] Additional information on lumber kiln O&M can be found in Simpson, William T., ed. 1991. *Dry Kiln Operator's Manual.* Agricultural Handbook AH–188. Madison, WI: U.S. Department of Agriculture, Forest Service, Forest Products Laboratory.

temperature monitoring under the PCWP NESHAP.

Under the in-kiln moisture measurement option, the lumber kiln would operate using a direct, in-kiln continuous lumber moisture monitoring technique that provides automated feedback from within the kiln to the kiln operator control panel during the drying cycle. Kiln owners and operators would be required to operate the kiln to dry to a semiannual average lumber moisture content above the minimum limit of moisture content proposed in paragraph 40 CFR 63.2241(e)(3)(ii) and table 11 to subpart DDDD of 40 CFR part 63, as discussed later in this preamble. We are proposing the in-kiln lumber moisture measurement option to promote direct measurement and use of lumber moisture content monitoring as a kiln control parameter during high-temperature drying (*i.e.,* in kilns operating above the dry bulb temperature set points under the work practice temperature option). An example of an in-kiln direct lumber moisture measurement technique is use of 2 steel plates inserted into packages of lumber spatially distributed throughout the kiln. The electrical resistance between the plates is measured and relayed to a moisture meter which supplies moisture measurements to the kiln control software. We are proposing that at least 1 lumber moisture reading per 20,000 board feet (BF) of lumber in the kiln load be taken and that the batch average lumber moisture content be determined at the end of the batch cycle (when the lumber has reached its lowest kiln-dried moisture content). The requirement for 1 lumber moisture reading per 20,000 BF (which is the same as 20 thousand board feet (20 MBF)) is proposed to ensure that there are multiple moisture measurements in different areas of the kiln, with the number of lumber moisture monitors being scaled to kiln capacity. For example, a lumber kiln drying 160 MBF per batch would require at least 8 lumber moisture monitors to be distributed throughout the kiln load. For CDKs, we are proposing that facilities measure the lumber moisture content at the completion of drying for each package of lumber (when the lumber has reached its lowest kiln-dried moisture content). Because different lumber grades can be produced in a given lumber kiln at different times, we are proposing that a ratio of measured lumber moisture divided by the minimum kiln-dried lumber moisture limit be developed for each batch kiln load and for each package of lumber dried in a CDK. If the semiannual average of all the ratios is greater than or equal to 1 for the kiln, then compliance would be demonstrated. The semiannual average ratio of measured moisture divided by the minimum kiln-dried lumber moisture limit would be reported in the semiannual report. A semiannual averaging time is proposed to correspond with the semiannual reporting frequency already required for reporting under the PCWP NESHAP, and because a semiannual average provides flexibility for the variability associated with drying lumber of different dimensions cut from logs with naturally occurring initial moisture variations (*e.g.,* seasonal or tree stand variations). See proposed 40 CFR 63.2241(e)(3)(ii) and 40 CFR 63.2270(i) for more details on the proposed methodology for calculating the semiannual average from kiln-dried lumber moisture measurements.

Under the site-specific plan option, facilities would develop and operate according to a site-specific plan to minimize lumber over-drying through temperature and lumber moisture monitoring. The site-specific plan would be required to be submitted to the delegated authority for approval. The site-specific limits from the plan would then have to be incorporated into the facility's operating permit when it is next reopened or renewed, as applicable.

The site-specific plan would be required to: identify one temperature parameter (such as wet or dry bulb temperature, wet bulb depression, or temperature drop across the load) to be continuously monitored during the kiln drying cycle; include a description of how the temperature parameter is measured and used to minimize over-drying of lumber; and include a site-specific limit for the temperature parameter that minimizes over-drying. Facilities would be required to continuously monitor the temperature parameter no less often than every 15 minutes and calculate the 3-hour block average for comparison to the site-specific temperature limit. See proposed 40 CFR 63.2269(a)–(b) and 40 CFR 63.2270(h) for more details on temperature monitoring under the PCWP NESHAP.

In addition, the site-specific plan would be required to: include a site-specific method for monitoring kiln-dried lumber moisture content (weight percent, dry basis); specify the location of such monitoring within the lumber manufacturing process (for example, at the kiln unloading track, in lumber storage, or at the planer); specify the minimum kiln-dried lumber moisture content limit based on the lumber moisture grades produced at the facility based on 40 CFR 63.2241(e)(3)(iii) and table 11 to subpart DDDD of 40 CFR part 63; and adhere to a minimum data requirement of one moisture measurement per 20,000 BF. Facilities would be required to calculate and record the monthly average kiln-dried lumber moisture content, compare the monthly average to the minimum kiln-dried lumber moisture content limit, and take corrective action if the monthly average lumber moisture content is below the minimum limit. Facilities would be required to maintain records of corrective actions taken and report corrective actions in the semiannual report. In addition, facilities would be required to calculate the semiannual average of batch or continuous kiln lumber moisture measurements and compare the semiannual average to the minimum kiln-dried lumber moisture content limit to determine compliance. The monthly averages with records of corrective action (when needed) are proposed to provide interim indications of compliance before the semiannual average is determined because facilities using a site-specific plan are likely to be measuring the moisture of kiln-dried lumber downstream of the kiln (*e.g.,* at the planer).

The site-specific plan containing limits for temperature and lumber moisture content would have to be developed and submitted to the delegated authority within 180 days after the effective date of the final rule. The written site-specific plan would have to be maintained onsite at the facility and would be enforceable upon the compliance date specified in the rule. Facilities would be required to report deviations from the site-specific plan following the compliance date. Once the site-specific plan is approved by the delegated authority, the plan requirements would be incorporated into the facility's title V operating permit when the permit is next reopened or renewed, as applicable.

Kiln-dried moisture minimum limit. In the fourth and final element of the work practice to minimize lumber over-drying, we are proposing minimum limits of kiln-dried lumber moisture content (weight percent on a dry basis) that are considered to be over-dried lumber for purposes of the PCWP NESHAP. In proposed 40 CFR 63.6241(e)(4) and proposed table 11 to subpart DDDD of 40 CFR part 63, the ''maximum lumber moisture grade'' means the upper limit of lumber moisture content (weight percent on a dry basis) that meets the relevant lumber grade standard for a lumber product. The proposed minimum limit of kiln-dried lumber moisture content varies according to the maximum lumber moisture grade as shown in proposed table 11 to subpart DDDD of 40 CFR part 63. The minimum limits of kiln-dried lumber moisture content proposed acknowledge the fact that different lumber moisture grades are produced and that enough margin is needed to encompass the target lumber moisture (which is a few percent below the grade moisture to ensure the lumber meets grade) and allow for variability that occurs around the target moisture. The minimum limits of lumber moisture proposed in table 11 to subpart DDDD of 40 CFR part 63 reflect the following moistures (all on a weight percent, dry basis):

• For lumber with maximum lumber moisture grade above 22 percent, the proposed minimum limit below which lumber is considered over-dried is 15 percent moisture. A minimum limit of 15 percent moisture was selected because a limit of 15 percent lumber moisture is included in at least 1 air permit for a lumber facility producing moisture grades higher than KD–19.

• For lumber with a maximum lumber moisture grade of 19 to 21 percent, the proposed minimum limit below which lumber is considered over-dried is 12 percent moisture. A minimum limit of 12 percent was selected because this limit is consistent with the limit indicated in several air permits for facilities producing KD–19, which is a grade produced in high volume.

• Consistent with the 7 percent difference between KD–19 and a 12 percent minimum limit, we are proposing the maximum grade moisture minus 7 percent as the minimum kiln-dried lumber moisture limit for grades with 18 down to 12 percent maximum moisture content (*e.g.,* 12 percent grade − 7 percent = 5 percent minimum kiln-dried lumber moisture limit).

• For lumber with maximum lumber moisture grade less than or equal to 10 percent, as required for some products to be exported, the proposed minimum limit below which lumber is considered over-dried is half the maximum lumber moisture grade. A 5 percent minimum kiln-dried lumber moisture limit is proposed for lumber with a maximum moisture grade of 11 percent, consistent with the minimum limit of 5 percent for grades of 10 and 12 percent moisture.

We estimate the HAP emission reduction achieved by the work practice to be 488 tpy for existing sources. We estimate that the work practice would also reduce 6,700 tpy of VOC emissions (as WPP1 [11]) from existing sources. For new sources, we estimate that the work practice would result in emission reductions of 77 tpy HAP and 1,000 tpy VOC (as WPP1).

4. Consideration of Add-On Controls

The EPA has not identified any lumber kilns with add-on air pollution controls. The EPA, as well as state permitting authorities, have evaluated the possibility of capturing and controlling emissions from lumber kilns and in each case concluded that capture and control of lumber kiln emissions is not technically feasible or cost effective for VOC emissions from batch or continuous kilns. The technologies considered and rejected as technically infeasible in BACT determinations include oxidizers (RTO and RCO), carbon adsorption, condensation, biofilters, and wet scrubbers (also known as absorbers). In some BACT determinations, it was noted that if an RTO were to be attempted for use on a lumber kiln, duct heaters and a WESP would likely also be needed to prevent resin buildup in the ductwork (for safety) as well as to protect the thermal media in an RTO or catalytic media in an RCO. Technologies rejected based on technical infeasibility for control of VOC are also infeasible for control of HAP in the same exhaust stream. Therefore, we do not consider add-on controls for lumber kilns to be a viable option for reducing HAP emissions. No emission reduction measures more stringent than the proposed work practice were identified.

C. What MACT standards are we proposing for process units with organic HAP emissions?

The EPA is proposing MACT standards to resolve unregulated HAP emissions from process units that had ''no control'' MACT determinations in the 2004 NESHAP that were remanded and vacated. In addition to MACT standards for lumber kilns, the EPA is proposing MACT standards for various process units in the PCWP source category, including various RMH process units, atmospheric refiners, stand-alone digesters, fiber washers, fiberboard mat dryers at existing sources, hardboard press predryers at existing sources, and log vats. Some of these process units are already subject to new source HAP standards in the 2004 PCWP NESHAP, including fiberboard mat dryers, hardboard press predryers, and reconstituted wood products board coolers (which are a type of RMH unit) at new and reconstructed sources. Mixed PCWP process streams routed to HAP control devices subject to the current HAP emission limits in table 1B to subpart DDDD of 40 CFR part 63 are also already subject to the 2004 PCWP NESHAP. This section of the preamble describes the MACT standards we are proposing for emissions streams with unregulated HAP emissions. A detailed description of the process units being regulated and supporting information for the proposed standards are provided in the memorandum, *Development of Emission Standards for Remanded Process Units Under the Plywood and Composite Wood Products NESHAP,* in the docket for this action.

1. Resinated Material Handling (RMH) Process Units

The PCWP affected source is the collection of process units used to produce PCWP at a PCWP manufacturing facility, including various dryers and reconstituted wood products presses which are already subject to emission standards under the PCWP NESHAP and other process units for which prior ''no control'' MACT determinations were vacated and remanded to EPA. Many of the process units with the prior ''no control'' MACT determinations are RMH process units within the PCWP affected source, including resin tanks, softwood and hardwood plywood presses, engineered wood products presses and curing chambers, blenders, formers, finishing saws, finishing sanders, panel trim chippers, reconstituted wood products board coolers (at existing affected sources), hardboard humidifiers, and wastewater operations. These process units handle resin or resinated wood material downstream of the point in the PCWP process where resin is applied.

The RMH process units are not designed and constructed in a way that allows for HAP emissions capture or measurement. It is not feasible to prescribe or enforce an emission standard for control of HAP from RMH process units. The RMH process units are equipment within the PCWP production building (or outdoor wastewater operations) without any enclosure, conveyance, or distinct HAP emissions stream that can feasibly be emitted though a conveyance. For example, dry formers, saws, and sanders have pick-up points for removal of wood material as it is trimmed, but the

[11] VOC as WPP1 is based on the wood products protocol in which VOC emissions as propane are corrected for oxygenated compounds that have a low response to the flame ionization detector used to measure hydrocarbons, by adding formaldehyde and 35 percent of methanol emitted. WPP1 VOC was used in the assessment of lumber kiln emissions consistent with the approach used by permitting authorities.

entire process unit is not enclosed or isolated; engineered wood products presses are too large to enclose; plywood presses cannot be enclosed for operator safety reasons; and board coolers at existing sources cannot be enclosed for equipment functionality reasons. Emissions from RMH process units are fugitive in nature such that application of emissions measurement methodology is not technically feasible. Further, emissions capture and measurement from hundreds of individual RMH process units would not be economically feasible (*e.g.,* with testing costs estimated to exceed $20 million nationwide assuming that facilities could capture emissions). For these reasons, it is not feasible to prescribe or enforce an emission standard for RMH process units. Therefore, the EPA is proposing work practice standards under CAA section 112(h).

To develop work practice standards under CAA section 112(h), consistent with CAA section 112(d), measures used by the best performing sources to reduce or eliminate emissions of HAP through process changes or substitution of materials were considered. This approach is consistent with CAA section 112(d)(2)(A). The potential for HAP emissions from RMH process units relates to the material being processed (*i.e.,* resin and wood). Standards for RMH units pertaining to resin-related and wood-related emissions are discussed in the following subsections.

a. Resin-Related Emissions From RMH Process Units

Most PCWP resins are amino/phenolic resins such as phenol formaldehyde (PF), melamine urea formaldehyde (MUF), urea formaldehyde (UF) with urea scavenger, melamine formaldehyde (MF), or phenol resorcinol formaldehyde (PRF). Isocyanates such as MDI are also used. The HAP associated with use of amino/phenolic resins at PCWP facilities include formaldehyde (CAS 50–00–0), phenol (CAS 108–95–2) and methanol (CAS 67–56–1). The HAP associated with MDI resin is 4,4′-Methylenediphenyl Diisocyanate (CAS 101–68–8). Some PCWP products can only be made with specific types or formulations of resins. Other products are made with 1 or more types of resins (*e.g.,* OSB can be made with PF, MDI, or PF and MDI in the same board). The PCWP resins typically are a liquid with high solids content (*e.g.,* up to 70 percent solids) as received or may be delivered and applied in powdered form.

The potential for resin-related HAP emissions from RMH process units relates to the free HAP content and volatility of the resin system used. The PCWP resin systems used typically have very low free HAP content (weight percent) or low vapor pressure depending on the resin type and application. For example, most types of amino/phenolic resins are non-HAP resins which can be defined as a resin with HAP contents below 0.1 percent by mass for Occupational Safety and Health Administration-defined carcinogens as specified in section A.6.4 of appendix A to 29 CFR 1910.1200, and below 1.0 percent by mass for other HAP compounds.

However, some amino/phenolic resin formulations essential to manufacturing dry-process hardboard or I-joists have slightly higher weight percentages of some HAP than non-HAP resins but have low vapor pressure which reduces the potential for HAP emissions from RMH process units at facilities used to make those products. Similarly, MDI resins would not be considered non-HAP resins due to their percentage by weight MDI content, but MDI resins have very low vapor pressure as received and used in RMH process units. In developing work practice standards for RMH units, it is necessary to limit resin-related HAP emissions without precluding the types of PCWP products covered under the PCWP NESHAP from being produced. A work practice standard with enforceable options to use a non-HAP resin system or meet a vapor pressure limit adheres to the CAA while allowing the different types of PCWP products covered under the PCWP NESHAP to be produced.

Information on resin HAP content (HAP percent, by weight) and resin vapor pressure (in kilopascals [kPa] or pounds per square inch absolute [psia]) is often available in safety data sheets (SDS) or other technical documentation accompanying the resin when it is received from the resin supplier. Some PCWP manufacturers may dilute amino/phenolic resins when preparing them for use, which would reduce the mass fraction of free HAP content or corresponding vapor pressure of the free HAP in the resin. Therefore, resin supplier information for the ‘‘as received’’ resin, before the resin is diluted or mixed with wood, is the most consistently available source of information to use as the basis of the work practice standards pertaining to resin-related HAP.

When received, PCWP resins are stored in fixed roof resin tanks at the PCWP facility at ambient temperature. Resin tanks are the first type of RMH process units in which resins are used in the PCWP process. The average-size resin tank in the PCWP industry is 12,500 gallons while the maximum is 47,000 gallons. Limited vapor pressure data are currently available to the EPA for resins used at PCWP facilities. Therefore, vapor pressure criteria in the Amino/Phenolic Resin NESHAP (40 CFR part 63, subpart OOO) were reviewed in addition to information available from PCWP facilities. The maximum true vapor pressure limits for applying controls for storage vessels storing liquids containing HAP under the Amino/Phenolic Resin NESHAP are 13.1 kPa (1.9 psia) for tanks with 20,000 to 40,000 gallon capacity and 5.2 kPa (0.75 psia) for storage vessels with 40,000 to 90,000 gallon capacity. A maximum true vapor pressure limit of 5.2 kPa (0.75 psia) corresponding with the largest PCWP resin tanks is proposed as the vapor pressure work practice option for PCWP resin-related HAP emissions. This vapor pressure limit would apply for amino/phenolic resins that are not non-HAP resins as well as for MDI resins. For the PCWP NESHAP, the maximum true vapor pressure of the resin as received would be defined in 40 CFR 63.2292 as the equilibrium partial pressure exerted by HAP in the stored liquid at the temperature equal to the highest calendar-month average of the liquid storage temperature for liquids stored above or below the ambient temperature, or at the local maximum monthly average temperature as reported by the National Weather Service for liquids stored at the ambient temperature, as determined: (1) from safety data sheets or other technical information provided by the PCWP resin supplier; or (2) standard reference texts; or (3) by the ASTM Method D2879–18 (which is proposed to be incorporated by reference in § 63.14); or (4) any other method approved by the Administrator.

b. Wood-Related Emissions From RMH Process Units

The potential for wood-related organic HAP emissions from RMH process units is reduced when the wood is purchased pre-dried or is dried in a dryer upstream from the RMH process units. Organic HAP in wood is released during the drying process (*i.e.,* prior to the RMH process units) and dryers are controlled to meet the emission limits established in the 2004 PCWP NESHAP. Most RMH process units after the drying process are not heated, which further limits the potential for wood-related organic HAP emissions. Even if the RMH process unit is heated (such as plywood or engineered wood product presses), if the wood processed has been previously dried then the potential for wood-related HAP emissions is reduced because dryers operate at higher temperatures than presses. A standard that requires processing of dried wood will minimize wood-related organic HAP emissions from RMH process units in the affected source.

c. RMH Process Unit Proposed Standards

We are proposing work practice standards to require new and existing facilities with RMH process units to (i) use only a non-HAP resin (defined in 40 CFR 63.2292), or (ii) use a resin with a maximum true vapor pressure of less than or equal to 5.2 kPa (0.75 psia) as defined in 40 CFR 63.2292, or (iii) use a combination of resins meeting either (i) or (ii). Facilities with RMH process units would also be required to process wood material that was purchased pre-dried to a moisture content of no more than 30 percent (weight percent, dry basis) or that has been dried in a dryer located at the PCWP facility. This requirement to process dried wood would not apply for wet formers and wastewater operations.

No options more stringent than the RMH process unit work practices were identified for resin tanks, softwood and hardwood plywood presses, engineered wood products presses and curing chambers, blenders, formers, finishing saws, finishing sanders, panel trim chippers, or hardboard humidifiers at new or existing affected sources, or for reconstituted wood products board coolers at existing affected sources. Reconstituted wood products board coolers at new affected sources are already subject to standards under the PCWP NESHAP. For wastewater operations, the EPA is proposing a work practice in addition to the RMH process unit standards to further limit the potential for HAP emissions. Facilities with wastewater operations would be required to implement one of the following measures:

- Follow the plan required in 40 CFR 63.2268 for wet control devices used as the sole means of reducing HAP emissions from PCWP process units; or
- Reduce the volume of wastewater to be processed by reusing or recirculating wastewater in the PCWP process or air pollution control system; or
- Store wastewater in a closed system; or
- Treat the wastewater by using an onsite biological treatment system, or by routing the wastewater to an offsite POTW or industrial wastewater treatment facility.

The applicability of these work practices for wastewater operations depends on the type of PCWP produced and specific equipment generating wastewater. Requiring one of the above work practices in addition to the RMH standards was identified as a more stringent option.

The emissions reductions associated with the work practices for RMH units are estimated to be 6.7 tpy of HAP from existing sources. No HAP reduction is estimated for new sources projected in the next 5 years because all facilities are expected meet the standards upon startup. No quantifiable HAP reductions are expected from the additional work practice for wastewater operations.

2. Atmospheric Refiners

Atmospheric refiners operate with continuous infeed and outfeed of wood material and under atmospheric pressure for refining (rubbing, grinding, or milling) wood material into fibers or particles used in particleboard or dry formed hardboard production. Atmospheric refiners are further characterized based on their placement before or after dryers in the PCWP production process. We are proposing the following definitions for inclusion in the PCWP NESHAP to distinguish between the 2 types of atmospheric refiners.

Dried wood atmospheric refiner means an atmospheric refiner used to process wood that has been dried onsite in a dryer at the PCWP affected facility for use in PCWP in which no more than 10 percent (by weight) of the atmospheric refiner annual throughput has not been previously dried onsite.

Green wood atmospheric refiner means an atmospheric refiner used to process wood for use in PCWP before it has been dried onsite in a dryer at the PCWP affected facility. Green wood atmospheric refiners include atmospheric refiners that process mixtures of wood not previously dried onsite (*e.g.,* green wood) and wood previously dried onsite (*e.g.,* board trim) in which wood not previously dried onsite comprises more than 10 percent (by weight) of the atmospheric refiner annual throughput.

The above definitions include a 10 percent (by weight) criteria to provide clarity for atmospheric refiners that process material recycled from various points in the PCWP process. An atmospheric refiner ''system'' may comprise 1 or more atmospheric refiners with the same emission point (*e.g.,* 2 particleboard refiners venting to the same baghouse).

a. Dried Wood Atmospheric Refiners

Based on available information from the 2017 ICR and more recent updates, there are 6 dried wood atmospheric refiner systems following PCWP dryers. Each of the 6 dried wood atmospheric refiner systems is controlled by a baghouse for dust collection. Emissions data for total HAP are available from the 2022 CAA section 114 survey testing for 2 of the dried wood atmospheric refiner systems. Because there are fewer than 30 systems, the MACT floor for existing sources is based on the average of the top 5 systems, or in this case the 2 systems with available total HAP emissions data. The MACT floor for new sources is based on the single best performing system. The MACT floor UPLs for existing and new systems were calculated according to the methodology referenced in section III.B of this preamble. Based on these calculations, the total HAP MACT floor for existing dried wood atmospheric refiners following dryers is 4.1E–03 lb/ODT. The total HAP MACT floor for new sources is 3.3E–03 lb/ODT.

Based on the average performance level for dried wood atmospheric refiners, we anticipate that the existing and new source total HAP MACT floors could be met without the use of add-on HAP controls. No HAP reduction is estimated for existing sources. No new dried wood atmospheric refiners are projected to be constructed or reconstructed in the next 5 years.

The EPA considered an option more stringent than the MACT floor to require dried wood atmospheric refiners to meet the emission limits in table 1B to subpart DDDD of 40 CFR part 63 based on add-on HAP control. With this beyond-the-floor option, nationwide emissions reductions for existing sources were estimated to be 0.9 tpy of HAP reduced and 28 tpy of VOC reduced. The nationwide capital and annual costs of this beyond-the-floor option are $19 million and $7.8 million per year, with a cost effectiveness of $8.4 million per ton of HAP reduced and $284,000 per ton of VOC reduced. Energy impacts associated with the beyond-the-floor option for existing sources include 24,000 MW-hr/year electricity use (with associated secondary air emission impacts) and 475,000 MMBtu/yr in natural gas usage. In addition, an estimated 192,000 gal/year of wastewater (for RTO washouts) and 113 tons/year of solid waste are estimated to be generated.

After considering the regulatory options for dried wood atmospheric refiners, the EPA is proposing MACT standards based on the MACT floor for existing and new dried wood atmospheric refiners. The more stringent beyond-the-floor option was rejected due to the high costs relative to the emission reductions that would be achieved, energy usage, and other non-air quality environmental impacts. Although the more stringent beyond-the-floor option is not being proposed, we are proposing to include a provision in 40 CFR 63.2240(d)(6) to give facilities the option of complying with the more stringent limits in table 1B to subpart DDDD of 40 CFR part 63 in place of the proposed limits in table 1C to subpart DDDD of 40 CFR part 63 if they choose to meet the more stringent option.

b. Green Wood Atmospheric Refiners

Existing sources. Based on available information, there are 28 green wood atmospheric refiner systems that precede dryers in the PCWP process. Controls used on green wood atmospheric refiners include cyclones, baghouses, and oxidizers used to control or co-control dryers. Total HAP emissions data are available from the 2022 CAA section 114 survey testing for 5 green wood atmospheric refiner systems, including 3 systems with oxidizers[12] and 2 systems with baghouses. The 3 systems with oxidizers are co-controlled with other PCWP process units (*e.g.,* dryers, presses) but had measurable emission streams at the inlet to the HAP control device containing only emissions from the green wood atmospheric refiners. Because the green wood atmospheric refiner emissions could be determined at the control device inlet, the green wood atmospheric refiner emissions at the control device outlet could be estimated. (Estimation of the outlet HAP emission rate attributable to the green wood atmospheric refiners was necessary because the measured HAP emission rate at the control device outlet exceeded the atmospheric refiner inlet emissions, due to the greater contribution to the total emissions from co-controlled dryers and/or presses.) Based on the emission reduction required for green rotary dryers in table 1B to subpart DDDD of 40 CFR part 63, we estimated that the green wood atmospheric refiner emissions at the HAP control outlet would be 90 percent below the inlet for each run for purposes of obtaining run values for use in the MACT floor UPL calculation. Using the outlet test run data for the 5 systems, the total HAP MACT floor UPL for existing source green wood atmospheric refiners is 1.2E–01 lb/ODT.

Based on the average performance level for green wood atmospheric refiners, we expect that existing sources would meet the total HAP MACT floor. An option more stringent than the MACT floor would be to require existing green wood atmospheric refiners to meet the emission limits in table 1B to subpart DDDD of 40 CFR part 63. This alternative could be considered as a beyond-the-floor regulatory option for all green wood atmospheric refiners and allowed as an option for those units already co-controlled with dryers meeting the table 1B limits.

Nationwide costs of the more stringent beyond-the-floor option for existing green wood atmospheric refiners (*e.g.,* RTO control) were estimated to be $56 million capital and $23 million per year, with nationwide reductions of 59 tpy HAP and 834 tpy VOC, and cost effectiveness of $388,000/ton HAP reduction and $27,000/ton VOC reduced. Energy impacts associated with the beyond-the-floor option for existing sources include 64,000 MW-hr/year electricity use (with associated secondary air emission impacts) and 1,100 billion Btu/yr in natural gas usage. In addition, an estimated 768,000 gal/year of wastewater and 300 tons/year of solid waste are estimated be generated.

The EPA is proposing that MACT for existing source green wood atmospheric refiners be based on the MACT floor. The EPA is proposing to reject the more stringent beyond-the-floor option (table 1B limits) due to high costs compared to the emissions reductions that could be achieved, energy usage, and other non-air quality environmental impacts. Although the more-stringent beyond the floor option is not being proposed, we are proposing to include a provision in 40 CFR 63.2240(d)(6) to give facilities the option of complying with the more stringent limits in table 1B to subpart DDDD of 40 CFR part 63 in place of the proposed limits in table 1C to subpart DDDD of 40 CFR part 63 if they choose to meet the more-stringent option.

New sources. The total HAP MACT floor for green wood atmospheric refiners at new sources, based on the UPL of the data set for the single best performing system, is 2.4E–03 lb/ODT. We note that this UPL calculation is based on a limited data set.[13] Comparing the MACT floor to the average performance level achieved by all of the green wood atmospheric refiners suggests that add-on HAP control (*e.g.,* oxidizer) would be needed by most systems to meet the MACT floor for new sources. The same level of HAP control (*e.g.,* oxidizer) would be achieved by new source green wood atmospheric refiners that are co-controlled with process units required to meet the emission limits in table 1B to subpart DDDD of 40 CFR part 63. Therefore, we are proposing to provide the option in 40 CFR 63.2240(d)(6) that would allow green wood atmospheric refiners to meet either the new source MACT floor UPL specific to green wood atmospheric refiners or the current table 1B limits, because either limit would result in the same level of HAP control (*e.g.,* that achieved by use of an oxidizer). Emission reductions were estimated to be 4.9 tpy organic HAP and 77 tpy VOC. No options more stringent than the MACT floor were identified. Therefore, we are proposing standards for new source green wood atmospheric refiners based on the MACT floor.

3. Stand-Alone Digesters and Fiber Washers

One wet/dry process hardboard facility operates a batch stand-alone digester and a fiber washer that have unregulated HAP emissions. Stand-alone digesters are used to steam or water soak wood chips so that they may be easily rubbed apart or ground into fibers in atmospheric refiners that follow the digesters. Stand-alone digesters have batch operating cycles that differ from pressurized refiner pre-steaming vessels (sometimes called ''digesters'') used to preheat wood chips prior to refining. Pressurized refiner pre-steaming vessels have continuous infeed and outfeed without pressure release between the pre-steamer and pressurized refiner. We are proposing to add the following definition of ''stand-alone digester'' to the PCWP NESHAP to clearly distinguish this type of unit from pressurized refiners, which are already subject to the PCWP NESHAP.

Stand-alone digester means a pressure vessel used to heat and soften wood chips (usually by steaming) before the chips are sent to a separate process unit for refining into fiber. Stand-alone digesters operate in batch cycles that include filling with wood chips, pressurization, cooking of wood chips under pressure, pressure release (purge) venting, and chip discharge (blow) from the pressure vessel. Venting of emissions from stand-alone digesters is separate from any downstream refining process. A stand-alone digester is a process unit.

Pressurized refiners are already subject to emission standards from the 2004 PCWP NESHAP. We are proposing to

[12] A fourth green wood refiner system with RCO does not have isolatable inlet or outlet emissions because it vents straight into dryer(s) controlled by the RCO.

[13] See the memorandum, *Approach for Applying the Upper Prediction Limit to Limited Datasets,* in the docket for this action for details on our review of the data sets and conclusions regarding appropriateness of the proposed MACT floors.

amend the current definition of pressurized refiner in the PCWP NESHAP to state that: ''Pressurized refiners include pre-steaming vessels that operate under pressure to continuously feed and vent through the pressurized refiner.'' The amended definition would distinguish between pre-steaming vessels that are part of pressurized refiner systems and stand-alone digesters.

One batch stand-alone digester system at a wet/dry hardboard process was identified. Measuring emissions from the stand-alone digester vents is not feasible because the flow rate from the vents is inconsistent and varies widely with the intermittent ''purge'' and ''blow'' cycles. In addition, entrained water droplets in the high moisture stream (composed primarily of steam) can interfere with emissions samples. Considering the inability to accurately measure emissions and the over 60-year age of the 1 remaining stand-alone digester in the PCWP industry where hardboard production has severely declined due to economic constraints,[14] we have concluded that application of emissions measurement methodology is not practicable due to technological and economic limitations and that a work practice is the appropriate format of standard according to CAA section 112(h)(2)(B). The potential for HAP emissions from stand-alone digesters is reduced when: (1) clean steam from the boiler is used for the digestion process (as opposed to steam potentially contaminated with HAP being reused from another process); and (2) HAP-containing or wood pulping chemicals [15] are not added to the digestion process. Thus, we are proposing a work practice requiring clean steam to be used in the digesters and prohibiting addition of HAP-containing or wood pulping chemicals to the digestion process. Initial and continuous compliance with the stand-alone digester work practice is proposed to be demonstrated through recordkeeping. No regulatory options more stringent than the work practice were identified for further consideration for existing or new stand-alone digesters. No new fiberboard or hardboard mills are projected; therefore, no new PCWP affected sources are expected to use stand-alone digesters.

Fiber washers are units in which water-soluble components of wood (hemicellulose and sugars) that have been produced during digesting and refining are removed from the wood fiber before the fiber is used in fiberboard or hardboard production. In a fiber washer, wet fiber leaving a refiner is further diluted with water and then passed over a filter, leaving the cleaned fiber on the surface. With the decline in the number of wet process fiberboard and hardboard facilities since the 2004 NESHAP was promulgated, only 1 fiber washer remains in operation in the PCWP industry. This vacuum drum-type washer is over 60 years old (due to economic constraints), is uncontrolled, and is not configured with an enclosure to capture emissions for measurement. Because there are technological and economic limitations to measuring emissions from this washer, this unit meets the criteria under CAA section 112(h)(2)(B) for establishing a work practice standard. The potential for HAP emissions from the fiber washer is already reduced because the facility uses fresh water to perform washing (as opposed to reusing process water) and does not use any wood pulping chemicals to dissolve lignin or HAP-containing chemicals (such as resins) in the manufacturing process. The lignin that remains in the fiber helps bind the wood fibers together to form the hardboard product. We are proposing a work practice for PCWP fiber washers to use fresh water for washing and processing fiber without addition of wood pulping or HAP-containing chemicals. Initial and continuous compliance with the fiber washer work practice is proposed to be demonstrated through recordkeeping. No regulatory options more stringent than the work practice were identified for further consideration for existing or new fiber washers. No new fiberboard or hardboard mills are projected; therefore, no new PCWP affected sources are expected to use fiber washers. No HAP emission reductions are expected to result from the work practices standards because they are already in use.

4. Fiberboard Mat Dryers and Press Predryers at Existing Sources

Fiberboard mat dryers are conveyor-type dryers used to dry wet-formed fiber mats. Press predryers are used in the wet/dry hardboard process to remove additional moisture from the hardboard mat after it exits the fiberboard mat dryer before the mat enters the hardboard press.

The PCWP NESHAP contains HAP emission standards for fiberboard mat dryers (heated zones) and hardboard press predryers at new sources (*i.e.,* the add-on control device compliance options in table 1B to subpart DDDD of 40 CFR part 63 or the production-based compliance option in table 1A to subpart DDDD of 40 CFR part 63). In this action, the EPA is proposing standards for the heated zones of an existing fiberboard mat dryer and hardboard press predryer that are unregulated for HAP at a wet/dry process hardboard facility. Both of these existing dryers are uncontrolled.

According to CAA section 112(d)(3)(B), because there are fewer than 30 sources, the MACT floor for existing sources must be based on the ''average emission limitation achieved by the best performing 5 sources'' or in this case the one fiberboard mat dryer and one predryer with unregulated HAP emissions. The average emission limitation achieved for purposes of setting the MACT floor emission level is based on the upper limit (UL) of the test data when there is only 1 source (where prediction is not required). The UL for each dryer was calculated using HAP test data collected in 2022 through a CAA section 114 survey.

For the fiberboard mat dryer (heated zones), the MACT floor based on the UL of the test data is 4.9E–02 lb total HAP per MSF on a ⅛″ thickness basis. The MACT floor based on the UL of the test data for the press predryer is 8.0E–02 lb total HAP per MSF on a ⅛″ thickness basis. We note that the MACT floor calculations were based on limited data sets.[16] No organic HAP emission reductions are associated with the MACT floor options.

We considered beyond-the-floor regulatory options for the existing fiberboard mat dryer and press predryer, which would be to route the dryers to incineration-based control, such as an RTO, in order to meet the emission limits of table 1B to subpart DDDD of 40 CFR part 63 as required in the NESHAP for new sources. Both dryers were considered together because using 1 RTO to treat emission streams from both dryers would be more cost-effective than 2 separate HAP control devices. In addition to RTO installation and operating costs, compliance costs would include emissions testing, RTO temperature monitoring, reporting, and recordkeeping. Total capital and annual costs associated with the beyond-the-

[14] Eighteen facilities manufacturing hardboard were in operation when the PCWP NESHAP was promulgated in 2004. Four hardboard manufacturing facilities remain in operation today.

[15] Wood pulping chemicals added to dissolve lignin in wood include sodium sulfide (Na_2S) in combination with sodium hydroxide (NaOH), sulfurous acid (H_2SO_3) compounds, or sodium sulfite (Na_2SO_3) in combination with sodium carbonate (Na_2CO_3). Lignin removal is not necessary in the hardboard industry where natural lignin helps bind wood fibers in processes where synthetic resins are not used.

[16] See the memorandum, *Approach for Applying the Upper Prediction Limit to Limited Datasets,* in the docket for this action for details on our review of the data sets and conclusions regarding appropriateness of the proposed MACT floors.

floor option are estimated to be $2.2 million and 1.0 million per year, respectively. Reductions in HAP and VOC associated with the beyond-the-floor option for both dryers are estimated to be 8.1 tpy organic HAP and 16 tpy VOC, for a cost effectiveness of $117,000/ton of organic HAP reduced and $61,000/ton of VOC reduced. Energy impacts associated with the beyond-the-floor option for existing sources include 3,000 MW-hr/year electricity use (with associated secondary air emission impacts) and 50,000 MMBtu/yr in natural gas usage. In addition, an estimated 21,000 gal/year of wastewater and 8.2 tons/year of solid waste are estimated to be generated from oxidizer media washouts and replacements, respectively.

After reviewing the regulatory options for the existing fiberboard mat dyer heated zones and press predryer, the EPA is proposing to set the HAP emission standards at the MACT floor. The more stringent beyond-the-floor options for each dryer were rejected because of the high costs relative to the HAP emission reduction that could be achieved, energy usage, and other non-air quality environmental impacts. Although the more stringent beyond-the-floor options are not being proposed, we are proposing to include a provision in 40 CFR 63.2240(d)(6) to allow for compliance with the more stringent limits in table 1B to subpart DDDD of 40 CFR part 63 in place of the proposed limits in table 1C to subpart DDDD of 40 CFR part 63.

5. Log Vats

Log vats are used to condition logs before they are cut into veneer or wood strands. Hot water vats in which logs are immersed are often open to the atmosphere. In log steaming or ''chest'' vats, logs are placed in the vat in batches, the door is closed, and steam (which condenses in the vat) along with hot water sprays are used to condition the logs for a specified time before the logs are removed for veneer production. Both types of vats heat logs to within the same temperature range (up to 230 °F based on ICR responses).

The recent ICR identified 81 log vats used at PCWP facilities, including 51 hot water vats and 30 chest vats. None of the log vats are controlled for HAP, have a conveyance for collection of emissions, or have a stack for emissions measurement. Because the log vats have neither the proper emissions capture and conveyance ductwork nor stacks where emissions testing could be conducted, based on CAA section 112(h)(2)(A) and (B), we are proposing a work practice standard for log vats at existing or new sources. Although the HAP emissions data are not available to correlate with log temperature, it is reasonable to expect that overheating logs could increase the potential for HAP emissions from log vats. The proposed work practice standard would require facilities to: (a) operate each vat using a site-specific target log temperature that does not exceed 212 °F, measured in the water used to soak the logs or in the wood cut at the lathe or standers; and (b) operate each vat to reduce the potential for fugitive emissions by either: (1) covering at least 80 percent of the vat hot water surface area for soaking vats in which logs are submerged; or (2) keeping doors closed while steam or hot water showers are being applied inside log steaming vats.

Initial and continuous compliance with the log vat work practice could be demonstrated through monitoring, recordkeeping, and reporting that reflects adherence to the work practice conditions. No regulatory options more stringent than the work practice were identified for further consideration for log vats. Nationwide organic HAP reductions are estimated to be 0.7 tpy for existing sources and 0.17 tpy for new sources.

6. Mixed PCWP Process Streams Regulated at Existing Sources

Some PCWP facilities route emission streams from multiple process units of the same or different types into 1 shared HAP control system such as an RTO, RCO, biofilter, or process incineration system to meet the compliance options in table 1B to subpart DDDD of 40 CFR part 63. In a few mixed process arrangements, an emissions stream from a remanded unit is mixed at the inlet to a HAP control device and co-controlled with other process units listed in table 1B such that the combined emission stream became subject to the table 1B limits when the control system was initially installed to meet the 2004 NESHAP or as part of the PCWP plant design. Due to commingling, emissions from each individual type of process unit contributing to a mixed PCWP process stream cannot be distinguished at the inlet or outlet of the control device. For this reason, we are proposing that mixed PCWP process streams from remanded units meeting the compliance options in table 1B be considered a separate type of emission stream that remains subject to the table 1B limits. Mixed PCWP process streams are proposed to be defined in 40 CFR 63.2292 as an emission stream from a process unit subject to the final amendments that was commingled with emissions stream(s) from process unit(s) subject to the compliance options in table 1B to subpart DDDD of 40 CFR part 63 before the effective date of the final amendments at an affected source that commenced construction (or reconstruction) on or before the date of this proposal. The recommended definition of ''mixed PCWP process stream'' refers specifically to a ''stream'' as opposed to a whole process unit because there can be uncaptured or uncontrolled emissions from a remanded process unit in addition to the captured emission stream from the remanded unit that is routed to the HAP control device as part of a mixed PCWP process stream.

D. What MACT standards are we proposing for process units with MDI emissions?

The EPA is proposing standards to regulate MDI emissions from reconstituted wood products presses, tube dryers that blow-line blend MDI resin, and miscellaneous coating operations. The proposed standards for tube dryers that blow-line blend MDI resin would apply for commingled MDI emissions from tube dryers and reconstituted wood products presses using MDI. Supporting information for the proposed standards is provided in the memorandum, *Regulatory Options for MDI Emissions from Plywood and Composite Wood Products Reconstituted Wood Products Presses, Tube Dryers, and Miscellaneous Coating Operations,* in the docket for this action.

1. Reconstituted Wood Products Presses

The EPA is proposing standards for MDI emissions from reconstituted wood products presses that use MDI resin at any time during the year in any portion of the board (*e.g.,* whole board, core, or face). Emissions data for MDI are available from EPA Method 326 testing conducted in 2022 (in response to a CAA section 114 request) on presses using MDI throughout the whole board.

The EPA is proposing to distinguish reconstituted wood products presses that produce OSB from those producing particleboard or MDF (PB/MDF) for purposes of establishing MDI standards because product differences appear to affect MDI emissions. With the HAP control level being the same, product differences are expected to be the reason for the difference in MDI emissions. Particleboard and MDF are similar to one another in that they are used for the same interior product markets (*e.g.,* cabinets, shelving, furniture) while OSB is used for exterior applications (*e.g.,* siding, roofing). OSB furnish is made of flat wood strands (*e.g.,* several inches in length) as opposed to the small wood fibers used to manufacture MDF. The smaller wood fibers (or particles) used in MDF/PB presses have greater overall surface area than the much larger OSB wood strands per volume of board produced. The difference in wood furnish surface area that is coated with MDI resin can result in different potential for MDI emissions from PB/MDF presses compared to OSB presses. Different pressing temperatures are also used. Therefore, we are proposing to group the presses by product type to adequately address the variability in MDI emissions associated with different products.

There are 26 OSB presses that use MDI resin. The EPA has MDI emissions data for 2 of these presses using the type of control system considered to be best performing for reducing organic HAP emissions, including MDI. As noted previously, when there are fewer than 30 sources, the MACT floor is based on the best performing 5 sources. However, in this case emissions data are only available for 2 sources for determining the MACT floor. Using the MDI emissions data from 2 OSB presses, the MACT floor for existing sources was calculated and compared to the 3xRDL MDI concentration and OSB press emission rate values of 27 micrograms per dry standard cubic meter (ug/dscm) of air or 2.5E–04 lb/MSF ¾″ (1.3E–04 lb/MSF ⅜″). The 3xRDL values exceeded the MACT floor concentration and emission rate for existing sources and are therefore being proposed in place of the existing source MACT floor for OSB presses using MDI to ensure that the standards are established at the minimum level at which emissions can be measured reliably. The MDI MACT floor for new source OSB presses was calculated using the MDI emissions data for the best performing OSB press and compared to the 3xRDL MDI concentration. The 3xRDL values exceeded the MACT floor concentration and emission rate for new sources and are therefore being proposed in place of the new source MACT floor for OSB presses using MDI.

There are 10 PB/MDF presses that use MDI resin. The EPA has MDI emissions data for 2 of the PB/MDF presses with the type of control system considered to be best performing for reducing organic HAP emissions, including MDI. Using the MDI emissions data from the 2 PB/MDF presses, the MACT floor for existing sources was determined to be 8.4E–04 lb/MSF ¾″ or 200 ug/dscm, which is higher than the corresponding 3xRDL value. The MACT floor for new source PB/MDF presses was calculated based on the single best performing press and compared to the 3xRDL MDI concentration and PB/MDF press emission rate values of 27 ug/dscm and 2.3E–04 lb/MSF ¾″, respectively. The 3xRDL values exceeded the MACT floor concentration and emission rate and are therefore being proposed in place of the MACT floor for new source PB/MDF presses using MDI to ensure that the standards are established at the minimum level at which emissions can be measured reliably.

Estimated annual emissions of MDI from the reconstituted wood products presses tested were less than 0.1 ton/year. This low level of emissions is likely because MDI polymerizes into a solid rapidly and irreversibly in the reconstituted wood products press, and the presses tested are equipped with the types of organic HAP controls found on the best performing sources in the PCWP industry. Also, less than one hundredth of a percent (<0.01%) of the MDI applied was measured at the inlet or outlet of the control device. Considering the low levels of MDI emitted and that reconstituted wood products presses already meet HAP limits from the 2004 PCWP NESHAP using robust HAP controls, no regulatory options more stringent than the existing or new source MACT floors for MDI were identified for OSB or PB/MDF reconstituted wood products presses. Accordingly, we are proposing that the MDI MACT floors for existing and new OSB and PB/MDF reconstituted wood products presses is MACT for these process units.

Reconstituted wood products presses operating HAP controls are expected to meet the MACT floor for existing and new sources. However, it is currently unknown whether presses at 2 particleboard facilities that meet the PCWP production-based compliance option (PBCO)[17] using pollution prevention measures would meet the MDI MACT floor. An MDI emission reduction of 0.077 tpy with corresponding VOC reduction of up to 63 tpy is estimated for existing sources. For new sources, no MDI or VOC emission reductions are estimated because new presses are expected to meet the new source limit.

2. Tube Dryers

Primary tube dryers often incorporate blow-line blending in which resin is added to wood fibers as they enter the primary tube dryer. The resin and wood fibers mix with the turbulent conditions in the primary tube dryer as the wood fiber is dried. Within the PCWP industry, 5 primary tube dryer systems incorporate blow-line blending using MDI resin to produce MDF. In addition, 3 secondary tube dryer systems follow primary tube dryers that blow-line blend MDI resin. All of the primary and secondary tube dryer systems have air pollution controls to reduce organic HAP emissions to comply with the 2004 PCWP NESHAP standards.

Primary and secondary tube dryers are often co-controlled. In some systems, air flow from the secondary tube dryers vents through the primary tube dryers (for energy conservation), while in other systems the secondary tube dryers vent directly to the same air pollution control system as the primary tube dryers. All of the secondary tube dryers that follow primary tube dryers in which MDI is injected with a blow-line have emissions that exit from the same emission point as primary tube dryers. Therefore, the MDI emission limits developed for the primary tube dryers apply for secondary tube dryers as well.

Primary tube dryers may also be co-controlled with a reconstituted wood products press. Emissions data for MDI are available from the 2022 CAA section 114 survey testing for 1 MDI primary tube dryer system that blow-line blends MDI and is co-controlled with a press. Emissions from the dryer (including press emissions routed through the dryer) are controlled by an RTO. The inlet and outlet of the RTO were tested for MDI, in which an average MDI reduction of 87 percent was achieved. The inlet MDI concentration for the blow-line blend tube dryer (with press) system was higher than MDI emissions from reconstituted wood products presses alone, which suggests that most of the MDI emissions in a combined system are associated with the blow-line blend tube dryer. Therefore, we are proposing that the same MDI standard (in terms of lb/ODT) established for blow-line blend tube dryers alone would also apply for blow-line blend tube dryer and press combinations.

Because there are fewer than 30 primary tube dryers that blow-line blend MDI, according to CAA section 112(d), the MACT floor for existing sources is based on the best performing 5 systems for which the Administrator has emissions information and the MACT floor for new sources is based on the single best performing system. In this case, because emissions data are available for only 1 system, data for this 1 system was used to establish the MACT floor for both existing and new sources. Using the emission test run data for the tested dryer system (7 runs), the MACT floor for new and existing sources is 1.7E–02 lb/ODT or 0.68 mg/

[17] Table 1A to subpart DDDD of 40 CFR part 63 contains the PBCO total HAP limits.

dscm. No regulatory options more stringent than the MACT floor were identified for tube dryers that blow-line blend MDI.

Because all of the tube dryer systems that blow-line blend MDI resin have HAP emission controls, we anticipate that they would all meet the MDI MACT floor based on the average MDI emissions from the comparable unit tested. No MDI emission reductions are estimated as all existing and new sources are expected to meet the MACT floor.

3. Miscellaneous Coatings Operations

The EPA is proposing to regulate MDI emissions from miscellaneous coating operations in which MDI moisture sealants are applied to engineered wood products such as parallel strand lumber or LVL. One MDI moisture sealant spray booth at an engineered wood products facility was identified and tested as part of the 2022 CAA section 114 survey. Using the test data from this facility, the proposed MACT floor limit for existing and new sources is 1.9E–03 lb MDI emitted/lb sealant applied, or 1.4E–05 lb MDI/ft^2 surface area coated based on coating HAP content. No reduction in MDI emissions is estimated as a result of the MDI MACT floor. No options more stringent than the MACT floor emission level were identified for further analysis.

E. What performance testing, monitoring, and recordkeeping and reporting are we proposing?

1. Performance Testing

For the new and existing source emission limits being added to the PCWP NESHAP, we are proposing that new sources demonstrate initial compliance within 180 days after the effective date of the final rule or after startup, whichever is later, and that existing sources demonstrate initial compliance within 3 years after promulgation of the final rule. Additionally, we are proposing that subsequent performance testing would be required every 5 years (60 months), using the methods identified in table 4 to subpart DDDD of 40 CFR part 63.

The proposed emissions test methods for total HAP include EPA Method 320 (40 CFR part 63, appendix A), NCASI Method IM/CAN/WP–99.02 (IBR in 40 CFR 63.14), NCASI Method ISS/FP–A105.0 (IBR in 40 CFR 63.14); or ASTM D6348–12e1 (IBR in 40 CFR 63.14) with the conditions discussed in section VIII.I of this preamble. EPA Method 326 (40 CFR part 63, appendix A) is proposed for MDI emissions measurement, in which a minimum sample of 1 dry standard cubic meter (dscm) must be collected. For PM as a surrogate to HAP metals, either EPA Method 5 (40 CFR part 60, appendix A–3) or EPA Method 29 (40 CFR part 60, appendix A–8) is proposed with a minimum sample volume of 2 dscm. For Hg, EPA Method 29 or EPA Method 30B (40 CFR part 60, appendix A–8) are proposed, with a minimum sample volume of 2 dscm. The EPA Method 26A (40 CFR part 60, appendix A–8) is proposed for HCl emissions measurement with a minimum sample volume of 2 dscm. The recently updated EPA Method 23 (40 CFR part 60, appendix A–8) is proposed for PAH emission measurement with a minimum sample volume of 3 dscm. Consistent with the treatment of non-detect data used to establish the emission standards, we are proposing that non-detect data be treated as the MDL in test averages used to demonstrate compliance with the standards proposed in tables 1C, 1D, or 1E to subpart DDDD of 40 CFR part 63.

2. Parameter Monitoring

Under this proposal, continuous compliance with the standards proposed in tables 1C, 1D, or 1E to subpart DDDD of 40 CFR part 63 would be demonstrated through control device parameter monitoring coupled with periodic emissions testing described earlier in this preamble. The parametric monitoring already required in table 2 to subpart DDDD of 40 CFR part 63 for thermal oxidizers, catalytic oxidizers, or biofilters to demonstrate continuous compliance with the compliance options in table 1B to subpart DDDD of 40 CFR part 63 would also be required to demonstrate ongoing compliance with the standards in tables 1C, 1D, or 1E to subpart DDDD of 40 CFR part 63. In addition to the parametric monitoring currently specified for thermal oxidizers, catalytic oxidizers, or biofilters, we are proposing to add to table 2 to subpart DDDD of 40 CFR part 63 the following parameter monitoring requirements for the types of APCDs that we expect would be used to comply with the standards proposed in tables 1D or 1E to subpart DDDD of 40 CFR part 63:

- For WESP, monitor and record the secondary electric power input and liquid flow rate;
- For dry ESP, monitor and record the secondary electric power input or opacity;
- For wet PM scrubbers, monitor and record the liquid flow rate and pressure drop;
- For wet acid gas scrubbers, monitor and record the liquid flow rate and effluent pH;
- For electrified filter beds, monitor and record the ionizer voltage or current and pressure drop; and
- For mechanical collectors (*e.g.,* cyclone or multiclone) or other dry control devices, monitor and record opacity.

The operating limits for these parameters are proposed to be set consistent with the existing provisions of 40 CFR 63.2262, as the average of the 3 test run averages during the performance test. Continuous compliance with the parameters for WESP, dry ESP, wet scrubbers, and EFB would be determined by comparing the 3-hour block average parameter average to the limit established during the performance test.

Consistent with existing provisions in table 2 to subpart DDDD of 40 CFR part 63, a source owner choosing to rely on a control device other than a thermal oxidizer, catalytic oxidizer, or biofilter used to meet a compliance option in table 1C to subpart DDDD of 40 CFR part 63 would be required to petition the Administrator for site-specific operating parameters to be monitored or would have to maintain the 3-hour block average THC concentration within the limits established during the performance test. The source owner of process units that meet a compliance option in table 1C, 1D, or 1E to subpart DDDD of 40 CFR part 63 without using a control device would be required to maintain on a daily basis the process unit controlling operating parameter(s) within the ranges established during the performance test or maintain the 3-hour block average THC concentration within the limits established during the performance test.

For control devices where opacity is used as an operating parameter, we are proposing that a continuous opacity monitoring system (COMS) would be used and that the 24-hour block average opacity must not exceed 10 percent (or the highest hourly average measured during the performance test). We are proposing updates to table 10 to subpart DDDD of 40 CFR part 63 to indicate provisions pertaining to opacity and COMS that apply for subpart DDDD. We are proposing to change the following provisions from ‘‘No’’ or ‘‘NA’’ to ‘‘Yes’’ in table 10: 40 CFR 63.8(c)(5), 63.8(e), 63.9(f), and 63.10(e)(4). We are also proposing to note in table 10 that the requirements for opacity standards in 40 CFR 63.6(h)(2) through (9) do not apply because the opacity is being proposed as an operating limit and not as an emission standard.

Continuous monitoring requirements associated with the work practices proposed in table 3 to subpart DDDD of 40 CFR part 63 include combustion unit bypass stack usage monitoring (*e.g.,* temperature or bypass damper position), lumber kiln dry bulb temperature monitoring (for comparison of the 3-hour block average to the dry bulb set point), in-kiln lumber moisture monitoring (for comparison of the semiannual average kiln-dried lumber moisture content), or monitoring of lumber kiln temperature (with 3-hour block averaging) and lumber moisture (with semiannual averaging) for comparison to limits in an approved site-specific plan.

We are also proposing continuous monitoring and recording of process unit bypass stack usage at all times while the process units are operating, including times when the process unit is undergoing startup or shutdown, and during the operating conditions specified in 40 CFR 63.2250(f)(2) through (4). This requirement is being proposed to ensure that reliable data are available to evaluate continuous compliance with the PCWP NESHAP requirements.

Consistent with NESHAP general provisions, a source owner would be required to operate and maintain the source, its air pollution control equipment, and its monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions, to include operating and maintaining equipment in accordance with the manufacturer's recommendations. Owners would be required to prepare and keep records of calibration and accuracy checks of the continuous monitoring system (CMS) to document proper operation and maintenance of the monitoring system.

3. Recordkeeping and Reporting

Under this proposal, and consistent with existing requirements in the PCWP NESHAP, a source owner would be required to submit semi-annual compliance summary reports which document both compliance with the requirements of the PCWP NESHAP and any deviations from compliance with any of those requirements. Owners and operators would be required to maintain the records specified by 40 CFR 63.10 and, in addition, would be required to maintain records of all monitoring data, in accordance with the PCWP NESHAP (40 CFR 63.2282).

F. What other actions are we proposing, and what is the rationale for those actions?

In addition to proposing the new standards and monitoring, recordkeeping and reporting requirements discussed above, we are proposing to revise the PCWP NESHAP to remove obsolete rule language including the emissions averaging compliance option, dates, and startup/shutdown provisions that are no longer in effect. Removing the outdated language from the PCWP NESHAP would streamline the rule and make it easier to read. We are also proposing updates and clarifications of the electronic reporting requirements. The proposed revisions and rationale are presented below.

1. Emissions Averaging

Emissions averaging was included in the 2004 rule as a compliance option for use at existing affected sources. To date, the EPA is only aware of one facility that used the emissions averaging compliance option, but that facility has ceased PCWP production. We are proposing to remove the emissions averaging compliance option because no existing facilities are using it, and emissions averaging is not an option for new affected facilities. Also, the proposed new emission standards discussed in section IV of this preamble further diminish opportunities for emissions averaging. Our proposal to remove the emissions averaging option would simplify the rule language.

2. Obsolete Dates and Provisions

On August 13, 2020, the EPA published several amendments to the PCWP NESHAP that were effective on August 13, 2020. The amendments included removal of references to the SSM exemption in 40 CFR 63.6(f)(1) and (h)(1) and changes to certain recordkeeping and reporting provisions. The compliance dates for the August 13, 2020, amendments were August 13, 2020, for affected sources that commenced construction or reconstruction after September 19, 2019, or August 31, 2021, for all other affected sources. Those compliance dates have passed.

The amendments now being proposed would become effective on the date of publication of the final rule and would have multiple associated compliance dates as discussed in section IV.G of this preamble. To reduce confusion as we add future compliance dates to the PCWP NESHAP, we are proposing to remove the obsolete dates and provisions that are no longer in effect, including:

- In 40 CFR 63.2233(1) through (3), cross-references to specific paragraphs needed to implement the August 13, 2020, amendments are proposed to be removed and replaced with a reference to the proposed 40 CFR 63.2233(e), which provides compliance dates for the rule requirements proposed in this action.
- Paragraphs 40 CFR 63.2250(a) through (c) are proposed to be removed and reserved because their requirements no longer apply.
- Date language is proposed to be removed in paragraphs 40 CFR 63.2250(f) and (g), which are paragraphs that replaced the obsolete paragraphs 40 CFR 63.2250(a) through (c) in the August 13, 2020, amendments.
- Paragraphs 40 CFR 63.2280(b) and (d) contained dates for when electronic submittal of initial notifications and performance test results became effective. 40 CFR 63.2281(b)(6) contained dates for when electronic submittal of semiannual reports became effective. These dates have passed, and the electronic reporting requirements are in full effect, so we are proposing to remove dates to make the rule easier to read.
- The first part of paragraph 40 CFR 63.2281(c)(4) contains dates for language that was phased out as well as dates for when electronic reporting requirements were phased in. Similarly, 40 CFR 63.2282(a)(2) contains obsolete dates and language intended to phase out some records and phase in other records. Because the dates have now passed, we are proposing to remove the obsolete language to simplify the rule.
- Row 2 in table 9 to subpart DDDD of 40 CFR part 63 is proposed to be removed and reserved because the requirement for an SSM report is no longer in effect.
- The August 13, 2020, final rule added a column to table 10 to subpart DDDD of 40 CFR part 63 to clarify which general provisions in subpart A of 40 CFR part 63 applied before and after August 13, 2021, for existing sources. The now obsolete column pertaining to requirements before August 13, 2021, is proposed to be removed.

Those amendments pertain to SSM provisions that have been removed and to reporting provisions that were added on August 13, 2020. For clarity, we are retaining date language from the August 13, 2020, final rule that specified compliance dates for standards and electronic reporting provisions added with that rulemaking. We have also taken care to insert compliance date language for the new standards proposed in this action (in 40 CFR 63.2240(d) and (e), tables 1C, 1D, 1E to subpart DDDD of 40 CFR part 63, 40 CFR 63.2241(d) through (h), and table 3 to subpart DDDD of 40 CFR part 63) as discussed further in section IV.G of this preamble.

3. Electronic Reporting Updates and Clarifications

On November 19, 2020, the EPA published a final rule incorporating standard electronic reporting language into the general provisions at 40 CFR 63.9(k). In this action, we are proposing to update the electronic reporting language in 40 CFR part 63, subpart DDDD, to refer to the provisions in 40 CFR 63.9(k) in addition to other revisions. The proposed revisions are as follows:

- We are proposing to require that initial notifications and notifications of compliance status be submitted in a user-specified format such as portable document format (PDF) in 40 CFR 63.2280(b) and (d) instead of 40 CFR 63.2281(h).
- General provisions pertaining to submittal of CBI are proposed to be removed from 40 CFR 63.2281(h), (i)(3), and (j)(3).
- In 40 CFR 63.2281(k), we are proposing to replace language pertaining to CEDRI outages (which is now in 40 CFR 63.9(k)) with additional detailed procedures for submitting CBI in electronic format. The update provides an email address that source owners and operators can use to electronically mail CBI to the OAQPS CBI Office when submitting compliance reports.
- In 40 CFR 63.2281(l), we are proposing to remove the provisions related to force majeure claims which are now in 40 CFR 63.9(k).
- We are proposing to remove the provision in 40 CFR 63.2283(d) that states that records submitted to CEDRI may be maintained in electronic format, because 40 CFR 63.10(b)(1) already allows the retention of all records electronically.
- In table 10 to subpart DDDD of 40 CFR part 63, we are proposing to indicate that all of the provisions in 40 CFR 63.9(k) apply to 40 CFR part 63, subpart DDDD.

In addition, we are proposing to amend 40 CFR 63.2281(c)(4) to clarify the compliance reporting requirements for the work practices in table 3 to subpart DDDD of 40 CFR part 63 (rows 6, 7, or 8). We are proposing to clarify that the requirement to report the date, time, and duration of every instance in which one of the work practices is used applies only if that individual work practice is used for more than 100 hours during the reporting period. The EPA's original intent was for the 100-hour reporting threshold to be compared to the semiannual usage of each of the 3 work practices individually, not for the total usage of all 3 work practices combined. As stated in 40 CFR 63.2281(c)(4), when one of the work practices is used for less than 100 hours per semiannual reporting period, a summary of the number of instances and total amount of time that work practice was used is required to be reported. As noted previously, we are also proposing to require continuous monitoring and recording of process unit bypass stack usage at all times including during the operating conditions specified in 40 CFR 63.2250(f)(2) through (4) and table 3 to subpart DDDD of 40 CFR part 63 (rows 6, 7, or 8) to ensure that reliable data are available to evaluate continuous compliance with the PCWP NESHAP requirements.

Finally, we are placing in the docket a revised draft version of the PCWP semiannual reporting template with updates to reflect the proposed changes to 40 CFR part 63, subpart DDDD, described throughout this preamble.

4. Definitions and Other Amendments

We are proposing to add several definitions to the PCWP NESHAP to define process units with new standards being added to the rule. We are also proposing to amend selected existing definitions to ensure that the products and process units covered by the PCWP NESHAP are adequately described.

5. Issues Raised by Petitioners Following the RTR

Following publication of the final RTR (85 FR 49434, August 13, 2020), the EPA received a petition for reconsideration (Petition) from Earthjustice on behalf of Greater Birmingham Alliance to Stop Pollution, Louisiana Environmental Action Network, and Sierra Club (Petitioners). The Petitioners asked the EPA to reconsider certain aspects of the August 13, 2020, final technology review and other amendments under the authority of CAA section 307(d)(7)(B), arguing that the EPA's rationale for four decisions all appeared for the first time in the 2020 final rule and response to comments (RTC) document accompanying the final rule.[18] The EPA is proposing changes to the PCWP NESHAP to address some of the Petitioners' concerns and is inviting public comment on some of the issues raised by the Petitioners in their letter to the EPA, which is available in the docket for this action.[19] The four issues are discussed below.

In the first issue raised, the Petitioners alleged that the EPA failed to set limits for unregulated HAPs. Although we do not agree that the Petitioners have met their burden under CAA section 307(d)(7)(B) to show that it was impracticable to raise this objection during the public comment period for the proposed 2020 technology review, and thereby compel reconsideration of this issue, this action contains proposed standards for unregulated HAP in order to respond to the 2007 partial remand and vacatur of the 2004 NESHAP and to comport with the 2020 *LEAN* ruling, such that the Petitioners' concern regarding this issue will be resolved once this action is finalized.

In the second and third issues raised by the Petitioners, they disagreed with two work practices the EPA finalized on the August 13, 2020, for safety-related shutdowns and pressurized refiner startup and shutdown and objected to what they perceived to be the EPA's changed or new rationale for these work practices, claiming that they did not have an opportunity to raise their objections during the public comment period. The Petitioners disagreed with the EPA's use of CAA section 112(h) to develop work practice standards for safety-related shutdowns and pressurized refiner startup and shutdown events. For safety-related shutdowns, the Petitioners took issue with the EPA's rationale that facilities cannot capture and convey HAP emissions *to a control device* during these periods for safety reasons (RTC at 89, emphasis added), saying that whether emissions can be conveyed *to a control device* is irrelevant under CAA section 112(h)(2)(A). In response to this critique, and to ensure that there is a full opportunity for all stakeholders to comment on the EPA's rationale for these work practices, the EPA requests comment on the relevance of the ability of facilities to capture and convey emissions to a control device to CAA

[18] *National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products (40 CFR part 63, subpart DDDD) Residual Risk and Technology Review, Final Amendments, Responses to Public Comments on September 6, 2019, Proposal.* Document ID No. EPA–HQ–OAR–2016–0243–0244 in the docket for this action.

[19] Letter from J. Pew, Earthjustice, to A. Wheeler, EPA. Petition for reconsideration of the final action taken at 85 FR 49434 (August 13, 2020), titled "*National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products Residual Risk and Technology Review submitted on behalf of Greater Birmingham Alliance to Stop Pollution, Louisiana Environmental Action Network, and Sierra Club.*" October 13, 2020.

section 112(h)(2)(A), given that CAA section 112(h)(2)(A) explicates CAA section 112(h)(1) which explicitly refers to the EPA's judgment as to when it is not feasible to prescribe or enforce an emission standard *for control of* a HAP (emphasis added).

Regarding the EPA's rationale under CAA section 112(h)(2)(B) for the safety-related shutdown and pressurized refiner startup and shutdown work practices, the Petitioners expressed discontent with the EPA's conclusion that stack tests (which typically take 1 to 3 hours) cannot be conducted for events lasting only minutes. The Petitioners asserted that EPA should have considered the practicability of other measurement methodologies including CEMS or continuous parameter monitoring. In response to the Petitioners' concerns, we maintain that stack testing is not feasible for safety-related shutdown events lasting only minutes or for pressurized refiner startup/shutdown events lasting less than 15 minutes. We request comment on how the EPA could feasibly prescribe or enforce a numeric emission limit for such short-term events without the ability to conduct stack testing. Further, continuous operation of CEMS on bypass stacks that are unused for the majority of process operating time is not practicable from an economic standpoint or technically (*e.g.,* because of the calibration drift likely to occur while the CEMS goes unused). The source testing required for conducting a RATA of CEMS would not be possible without requiring the use of the bypass during the RATA. Obtaining emissions data to correlate with parameters to establish continuously monitored parameter limits also necessitates stack testing. Although CEMS or specific continuously monitored parameter limits are not an appropriate measurement methodology for safety-related shutdowns and pressurized refiner startups and shutdowns themselves because of technical and economic limitations, we are proposing additional continuous parameter monitoring of bypass stack usage in addition to the work practices for safety-related shutdowns and pressurized refiner startup/shutdown events to address the Petitioners' concern. As discussed in section IV.A.6 of this preamble, we are proposing to require continuous monitoring of combustion unit bypass stacks in addition to proposing standards for annual tune-ups of combustion units used to direct-fire dryers. As discussed in section IV.E.2 of this preamble, we are also proposing continuous monitoring of process unit bypass stack usage at all times while the process units are operating, including times when the process unit is undergoing startup or shutdown, and during safety-related shutdowns and pressurized refiner startup/shutdown events to ensure that reliable data are available to evaluate continuous compliance with the PCWP NESHAP requirements.

The Petitioners also took issue with inclusion of measures that facilities have developed to protect workers and equipment in the safety-related shutdown work practice. The Petitioners argued that the steps an operator takes to protect workers and equipment are not necessarily the steps needed to prevent excess emissions or to remove raw materials and the heat source from the process as expeditiously as possible. We disagree with the Petitioners that the phrase ''to protect workers and equipment'' detracts from the safety-related shutdown work practice requirements to ensure that the flow of raw materials (such as furnish or resin) and fuel or process heat (as applicable) ceases and that material is removed from the process unit(s) as expeditiously as possible given the system design to reduce air emissions. However, we request comment on inclusion of measures facilities developed to protect workers and equipment from the safety-related shutdown provision. We also request comment on all aspects of the work practice provisions (which appear in table 3 to subpart DDDD of 40 CFR part 63, rows 6 and 7) based on operational experience now that these narrowly defined provisions have been implemented in place of the broader SSM exemptions that were removed from the PCWP NESHAP.

In their fourth issue raised, the Petitioners disagreed with the EPA's statement that use of low-HAP resins is a development under CAA section 112(d)(6), claiming that the EPA must revise standards for any development identified to require the maximum degree of reduction that is achievable through its application. In the 2020 technology review, when noting that low-HAP resins were a development, the EPA also explained that the EPA did not identify information to suggest that the resin system changes have significantly altered the type of process units or HAP pollution control technologies used in the PCWP industry to date or have led to processes or practices that have not been accounted for in the promulgated PCWP NESHAP compliance options. The Petitioners dismissed as irrelevant the EPA's explanation that there are many types of resin systems used in the manufacture of the various PCWP and that the resin-system solution for one facility's product may not be applicable for another product produced at a different facility. The Petitioners also argued that it is irrelevant that the EPA noted in 2020 plans for additional action for the PCWP NESHAP source category with respect to remanded PCWP process units in which the EPA would further consider the effects of resin system changes.

Given the Petitioners' objections, we are rearticulating our conclusion from the August 13, 2020, final technology review. Specifically, we are retracting our characterization of low-HAP resins as a ''development'' under CAA section 112(d)(6) with respect to the standards established for the PCWP source category in 2004. As noted in 2020, the EPA did not identify information suggesting that the resin system changes have significantly altered the type of process units or HAP pollution control technologies used in the PCWP industry or have led to processes or practices that were not accounted for in the 2004 promulgated PCWP NESHAP compliance options. Therefore, we agree with the Petitioners that it may have been inappropriate to describe resin changes as a ''development'' under CAA section 112(d)(6) since the 2004 promulgated standards. Moreover, we disagree with the Petitioners' claim that if resin changes were in fact such a ''development,'' the EPA would be required to establish MACT standards under CAA section 112(d)(2) and (3) as a consequence of that development. CAA section 112(d)(6) does not require the EPA to reconduct MACT determinations, as the D.C. Circuit made clear in *NRDC* v. *EPA*, 529 F.3d 1077 (D.C. Cir. 2008). Instead, CAA section 112(d)(6) provides that the EPA is to exercise its judgment to determine what revisions to preexisting standards are necessary, after considering such developments. In any event, as discussed in section IV.C.1 of this preamble, in this action—in order to address previously unregulated HAP emissions, respond to the 2007 partial remand and vacatur of the 2004 NESHAP, and comport with the *LEAN* ruling—we are under CAA section 112(h) setting standards for RMH process units for which no emission standards are currently in place, based on the use of non-HAP resins or resins with low vapor pressure (and therefore low potential for HAP emissions) including resin types which were available at the time of the 2004 rule.

G. What compliance dates are we proposing, and what is the rationale for the proposed compliance dates?

Amendments to the PCWP NESHAP proposed in this rulemaking for adoption under CAA section 112(d)(2) and (3) are subject to the compliance deadlines outlined in the CAA under CAA section 112(i). For existing sources, CAA section 112(i)(3) provides that there shall be compliance ''as expeditiously as practicable, but in no event later than 3 years after the effective date of such standard'' subject to certain exemptions further detailed in the statute.[20] In determining what compliance period is as ''expeditious as practicable,'' we consider the amount of time needed to plan and construct projects and change operating procedures. As provided in CAA section 112(i), all new affected sources would comply with these provisions by the effective date of the final amendments to the PCWP NESHAP or upon startup, whichever is later.

The EPA projects that many existing sources would need to make changes (*e.g.,* review operations, assemble documentation, install add-on controls and monitoring equipment) to comply with the proposed limits for various process units in their facility. These sources would require time to develop plans, construct, conduct performance testing, and implement monitoring to comply with the revised provisions. Therefore, we are proposing to allow 3 years for existing sources to become compliant with the new emission standards.

All affected facilities would have to continue to meet the current provisions of 40 CFR part 63, subpart DDDD, until the applicable compliance date of the amended rule.

For all affected sources that commence construction or reconstruction on or before May 18, 2023, we are proposing that it is necessary to provide 3 years after the effective date of the final rule for owners and operators to comply with the provisions of this action. For all affected sources that commenced construction or reconstruction after May 18, 2023, we are proposing that owners and operators comply with the provisions by the effective date of the final rule (or upon startup, whichever is later). The effective date is the date of publication of the final amendments in the **Federal Register**.

As noted previously, the affected source is the collection of process units at a PCWP facility. Examples of new affected sources are new greenfield PCWP or lumber facilities, existing facilities constructing new PCWP manufacturing process lines in addition to (or as a replacement for) existing process lines, and existing lumber facilities adding (or replacing) lumber kilns in projects that meet the definition of reconstruction.

We solicit comment on these proposed compliance periods, and we specifically request submission of information from sources in this source category regarding specific actions that would need to be undertaken to comply with the proposed amended provisions and the time needed to make the adjustments for compliance with any of the revised provisions. We note that information provided may result in changes to the proposed compliance dates.

V. Summary of Cost, Environmental, and Economic Impacts

A. What are the affected sources?

There are currently 223 major-source facilities subject to the PCWP NESHAP. We estimate that 6 new PCWP facilities will be constructed and become subject to the NESHAP in the next 5 years.

B. What are the air quality impacts?

This proposed action is expected to reduce HAP and VOC emissions from the PCWP source category. In comparison to baseline emissions of 7,474 tpy HAP and 55,349 tpy VOC,[21] the EPA estimates HAP and VOC emission reductions of approximately 591 tpy and 8,051 tpy, respectively. We also estimate that the proposed action would result in additional reductions of 231 tpy of PM, 164 tpy of $PM_{2.5}$, 132 tpy of NO_X, 718 tpy of CO, 12 tpy of SO_2, 129,741 tpy of CO_2, 11 tpy of methane (CH_4), and 4.7 tpy of nitrous oxide (N_2O). The reduction in CO_2, CH_4, and N_2O combined is also equal to 130,455 carbon dioxide equivalent (CO_2e).

Secondary air impacts associated with the proposed action are estimated to result in emissions increases of 5.4 tpy of PM, 2.0 tpy of $PM_{2.5}$, 22 tpy of CO, 2.7E–04 tpy of Hg, 14 tpy of NO_X, 14 tpy of SO_2, 23,227 tpy CO_2, 1.8 tpy of CH_4, and 0.26 tpy of N_2O. The increase in the CO_2, CH_4, and N_2O is also equal to 23,350 CO_2e. More information about the estimated emission reductions and secondary impacts of this proposed action can be found in the document *Cost, Environmental, and Energy Impacts of Subpart DDDD Regulatory Options* in EPA Docket ID No. EPA–HQ–OAR–2016–0243.

C. What are the cost impacts?

The EPA estimates that this proposed action would cost approximately $126 million in total capital costs (distributed across multiple years) and $51 million per year (in 2021 dollars) in total annualized costs. More information about the estimated cost of this proposed action can be found in the document *Cost, Environmental, and Energy Impacts of Subpart DDDD Regulatory Options* contained in the docket for this action.

D. What are the economic impacts?

For the proposed rule, the EPA estimated the cost of compliance with the proposed emission limits. This includes the capital costs of installation, and subsequent maintenance and operation of the controls as well as other one-time and annual costs. To assess the potential economic impacts, the expected annual cost was compared to the total sales revenue for the ultimate owners of affected facilities. For this rule, the expected annual cost is $228,700 (on average) for each facility, with an estimated nationwide annual cost of $51,000,000. The 223 affected facilities are owned by 65 parent companies, and the total costs associated with the proposed amendments are expected to be on average about 0.2 percent of annual sales revenue per ultimate owner.

Information on our cost and economic impact estimates for the PCWP manufacturing source category is available in the docket for this proposed rule (Docket ID No EPA–HQ–OAR–2016–0243).

E. What are the benefits?

Implementing the proposed amendments is expected to reduce emissions of HAP and non-HAP pollutants, such as VOC. In this section, we provide a qualitative discussion of the benefits of this proposed rule and HAP health effects.

[20] *Association of Battery Recyclers* v. *EPA,* 716 F.3d 667, 672 (D.C. Cir. 2013) (''Section 112(i)(3)'s 3-year maximum compliance period applies generally to any emission standard . . . promulgated under [section 112]'' (brackets in original)).

[21] Baseline emissions are from uncontrolled process units; *i.e.,* they do not include emissions from process units regulated by the NESHAP.

We estimate that the proposed amendments would reduce HAP emissions from the source category by approximately 591 tpy. The amendments would regulate emissions of acetaldehyde, acrolein, formaldehyde, methanol, phenol, propionaldehyde, non-Hg HAP metals, Hg, HCl, PAH, D/F and MDI. Information regarding the health effects of these compounds can be found in *Health Effects Notebook for Hazardous Air Pollutants* (at *https://www.epa.gov/haps/health-effects-notebook-hazardous-air-pollutants*) and in the EPA Integrated Risk Information System (IRIS) database (at *https://iris.epa.gov/AtoZ/?list_type=alpha*).

The proposed amendments would reduce emissions of VOC which, in conjunction with NO_X and in the presence of sunlight, form ground-level ozone (O_3). There are health benefits of reducing VOC emissions in terms of the number and value of avoided ozone-attributable deaths and illnesses. The *Integrated Science Assessment for Ozone* (Ozone ISA) [22] as summarized in the TSD for the Final Revised Cross State Air Pollution Rule Update [23] synthesizes the toxicological, clinical, and epidemiological evidence to determine whether each pollutant is causally related to an array of adverse human health outcomes associated with either acute (*i.e.,* hours or days-long) or chronic (*i.e.,* years-long) exposure. For each outcome, the ISA reports this relationship to be causal, likely to be causal, suggestive of a causal relationship, inadequate to infer a causal relationship, or not likely to be a causal relationship.

In brief, the Ozone ISA found short-term (less than 1 month) exposures to ozone to be causally related to respiratory effects, a ''likely to be causal'' relationship with metabolic effects and a ''suggestive of, but not sufficient to infer, a causal relationship'' for central nervous system effects, cardiovascular effects, and total mortality. The ISA reported that long-term exposures (1 month or longer) to ozone are ''likely to be causal'' for respiratory effects including respiratory mortality, and a ''suggestive of, but not sufficient to infer, a causal relationship'' for cardiovascular effects, reproductive effects, central nervous system effects, metabolic effects, and total mortality.

F. What analysis of environmental justice did we conduct?

Following the directives set forth in multiple Executive orders, the Agency has evaluated the impacts of this action on communities with EJ concerns. Executive Order 12898 directs the EPA to identify the populations of concern who are most likely to experience unequal burdens from environmental harms—specifically, minority populations (*i.e.,* people of color and/or Indigenous peoples) and low-income populations (59 FR 7629; February 16, 1994). Additionally, Executive Order 13985 is intended to advance racial equity and support underserved communities through Federal Government actions (86 FR 7009; January 25, 2021).

The EPA defines EJ as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.[24] The EPA further defines fair treatment to mean that no group of people should bear a disproportionate burden of environmental harms and risks, including those resulting from the negative environmental consequences of industrial, governmental, and commercial operations or programs and policies. In recognizing that people of color and low-income populations often bear an unequal burden of environmental harms and risks, the EPA continues to consider ways of protecting them from adverse public health and environmental effects of air pollution.

To examine the potential for any EJ issues that might be associated with PCWP manufacturing facilities, we performed a demographic analysis, which is an assessment of individual demographic groups of the populations living within 5 kilometers (km) and 50 km of the facilities. The EPA then compared the data from this analysis to the national average for each of the demographic groups.

The results of the demographic analysis (see table 1 of this preamble) indicate that the population percentages for certain demographic groups within 5 km of the 223 facilities are greater than the corresponding nationwide percentages. The demographic percentage for populations residing within 5 km of facility operations is 9 percentage points greater than its corresponding nationwide percentage for the African American population (21 percent within 5 km of the facilities compared to 12 percent nationwide), 7 percentage points greater than its corresponding nationwide percentage for the population living below the poverty level (20 percent within 5 km of the facilities compared to 13 percent nationwide), and 2 percentage points greater than its corresponding nationwide percentage for the population 25 years old and older without a high school diploma (14 percent within 5 km of the facilities compared to 12 percent nationwide). The remaining demographic groups within 5 km of facility operations are less than, or within one percentage point of, the corresponding nationwide percentages. It should be noted that, the average percent of the population that is Native American living within 5 km of the 223 facilities is 1.1 percent, which is over 1.5 times the national average. This is largely driven by populations living within 5 km of 16 facilities where the percent Native American population is over 5 times the national average. These facilities are located in Washington (3 facilities), Oklahoma (4 facilities), Texas, Louisiana, South Dakota, Wisconsin, Minnesota, Oregon, Maine, Florida, and South Carolina.

In addition, the proximity results presented in table 1 of this preamble indicate that the population percentages for certain demographic groups within 50 km of the 223 facilities are greater than the corresponding nationwide percentages. The demographic percentage for populations residing within 50 km of the facility operations is 7 percentage points greater than its corresponding nationwide percentage for the African American population (19 percent within 50 km to the facilities compared to 12 percent nationwide), and 3 percentage points greater than its corresponding nationwide percentage for the population living below the poverty level (16 percent within 50 km of the facilities compared to 13 percent nationwide). The remaining demographic percentages within 50 km of the facilities are less than, or within one percentage point of, the corresponding nationwide percentages.

A summary of the proximity demographic assessment performed for the major source PCWP manufacturing facilities is included as table 1 of this preamble. The methodology and the results of the demographic analysis are presented in a technical report, *Analysis of Demographic Factors for Populations Living Near PCWP Manufacturing Facilities,* available in this docket for

[22] U.S. EPA. 2020. *Integrated Science Assessment for Ozone and Related Photochemical Oxidants.* U.S. Environmental Protection Agency. Washington, DC. Office of Research and Development. EPA/600/R–20/012. Available at: *https://www.epa.gov/isa/integrated-science-assessment-isa-ozone-and-related-photochemical-oxidants.*

[23] U.S. EPA. 2021. *Regulatory Impact Analysis Final Revised Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS.* Available at *https://www.epa.gov/sites/default/files/2021-03/documents/revised_csapr_update_ria_final.pdf.*

[24] *https://www.epa.gov/environmentaljustice.*

this action (Docket ID EPA–HQ–OAR–2016–0243).

TABLE 1—PROXIMITY DEMOGRAPHIC ASSESSMENT RESULTS FOR MAJOR SOURCE PCWP MANUFACTURING FACILITIES

Demographic group	Nationwide	Population within 50 km of 223 facilities	Population within 5 km of 223 facilities
Total Population	328,016,242	34,271,452	1,554,465
	Race and Ethnicity by Percent		
White	60	66	65
African American	12	19	21
Native American	0.7	0.7	1.1
Hispanic or Latino (includes white and nonwhite)	19	8	9
Other and Multiracial	8	6	4
	Income by Percent		
Below Poverty Level	13	16	20
Above Poverty Level	87	84	80
	Education by Percent		
Over 25 and Without a High School Diploma	12	13	14
Over 25 and With a High School Diploma	88	87	86
	Linguistically Isolated by Percent		
Linguistically Isolated	5	2	2

Notes:

- The nationwide population count and all demographic percentages are based on the U.S. Census Bureau's 2015–2019 American Community Survey 5-year block group averages and include Puerto Rico. Demographic percentages based on different averages may differ. The total population counts within 5 km and 50 km of all facilities are based on the 2010 Decennial Census block populations.
- Minority population is the total population minus the white population.
- To avoid double counting, the ''Hispanic or Latino'' category is treated as a distinct demographic category for these analyses. A person is identified as 1 of 5 racial/ethnic categories: White, African American, Native American, Other and Multiracial, or Hispanic/Latino. A person who identifies as Hispanic or Latino is counted as Hispanic/Latino for this analysis, regardless of what race this person may have also identified as in the Census.

The human health risk estimated for this source category for the August 13, 2020, RTR (85 FR 49434) was determined to be acceptable, and the standards were determined to provide an ample margin of safety to protect public health. Specifically, the maximum individual cancer risk was 30-in-1 million for actual and allowable emissions and the noncancer hazard indices for chronic exposure were below 1 (*i.e.,* 0.8 for actual and allowable emissions). The maximum noncancer hazard quotient for acute exposure was 4. These health risk estimates were based on HAP emissions from the source category after addition of air pollution controls used to meet the MACT standards promulgated in 2004, as well as the baseline HAP emissions from process units for which standards are being proposed in this action. While the August 13, 2020, amendments to 40 CFR part 63, subpart DDDD, reduced emissions by an unquantified amount by removing the startup, shutdown, and malfunction exemption and adding repeat testing requirements, the proposed changes to 40 CFR part 63, subpart DDDD, in this action would reduce emissions by an additional 591 tons of HAP per year and therefore would further improve human health exposures for populations in all demographic groups. The proposed changes would have beneficial effects on air quality and public health for populations exposed to emissions from PCWP manufacturing facilities.

VI. Request for Comments

We solicit comments on this proposed action. In addition to general comments on this proposed action, we are also interested in additional data that may improve the analyses. If additional HAP performance test results are submitted, such data should include supporting documentation in sufficient detail to allow characterization of the quality and representativeness of the data or information.

For lumber kilns, we request comment on our proposed conclusions with respect to feasibility of capturing and measuring emissions from lumber kilns and our conclusions with respect to applicability of add-on controls for lumber kilns. We request comments on the proposed standards, including the proposed O&M plan with its requirement for annual inspections in 40 CFR 63.2241(e)(1), proposed requirement for annual lumber kiln burner tune-ups in 40 CFR 63.2241(e)(2), and the proposed minimum kiln-dried lumber moisture content limits below which lumber is considered over-dried lumber for purposes of the PCWP NESHAP in 40 CFR 63.2241(e)(4). With respect to the work practice proposed in 40 CFR 63.2241(e)(3), we request comment on the utility and provisions for each of the 3 options (temperature set point, in-kiln lumber moisture monitoring, or site-specific plan).

For RMH units, we request comments on the work practices proposed for RMH process units, including comments pertaining to the procedures for demonstrating compliance with the requirement to use non-HAP resin or resin meeting the proposed maximum true vapor pressure limit and the requirement to process dried wood. We also request comment on other potential approaches for establishing standards for RMH process units considering that the RMH process units are not designed and constructed in a way that allows for HAP emissions capture or measurement.

VII. Submitting Data Corrections

The site-specific emissions data used in setting MACT standards for PM (non-Hg HAP metals), Hg, acid gases, and PAH, as emitted from the PCWP source category, are provided in the docket (Docket ID No. EPA–HQ–OAR–2016–0243). If you believe that the data are not representative or are inaccurate, please identify the data in question, provide your reason for concern, and provide any ''improved'' data that you have, if available. When you submit data, we request that you provide documentation of the basis for the revised values to support your suggested changes. For information on how to submit comments, including the submittal of data corrections, refer to the instructions provided in the introduction of this preamble.

VIII. Statutory and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at *https://www.epa.gov/laws-regulations/laws-and-executive-orders.*

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is not a significant regulatory action and was therefore not submitted to the Office of Management and Budget (OMB) for review.

B. Paperwork Reduction Act (PRA)

The information collection activities in this proposed rule have been submitted for approval to OMB under the PRA. The ICR document that the EPA prepared has been assigned EPA ICR number 1984.11. You can find a copy of the ICR in the docket for this rule, and it is briefly summarized here.

We are proposing changes to the reporting and recordkeeping requirements for the PCWP NESHAP by incorporating the reporting and recordkeeping requirements associated with the MACT standards being added to the rule for multiple HAP from new and existing process units.

Respondents/affected entities: Owners or operators of PCWP or kiln-dried lumber manufacturing plants that are major sources, or that are located at, or are part of, major sources of HAP emissions.

Respondent's obligation to respond: Mandatory (40 CFR part 63, subpart DDDD).

Estimated number of respondents: On average over the next 3 years, approximately 223 existing major sources would be subject to these standards. It is also estimated that 6 additional respondents would become subject to the emission standards over the 3-year period.

Frequency of response: The frequency of responses varies depending on the burden item (*e.g.,* one-time, semiannual, annual, every 5 years).

Total estimated burden: The average annual burden to industry over the next 3 years from the proposed recordkeeping and reporting requirements is estimated to be 46,900 hours per year. Burden is defined at 5 CFR 1320.3(b).

Total estimated cost: The total annual recordkeeping and reporting cost for all facilities to comply with all of the requirements in the NESHAP, including the requirements in this proposed rule, is estimated to be $9,720,000 per year including $4,020,000 in annualized capital and O&M costs.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for the EPA's regulations in 40 CFR are listed in 40 CFR part 9.

Submit your comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden to the EPA using the docket identified at the beginning of this rule. The EPA will respond to any ICR-related comments in the final rule. You may also send your ICR-related comments to OMB's Office of Information and Regulatory Affairs using the interface at *https://www.reginfo.gov/public/do/PRAMain.* Find this particular information collection by selecting ''Currently under Review—Open for Public Comments'' or by using the search function. OMB must receive comments no later than July 17, 2023.

C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. The small entities subject to the requirements of this action are small businesses, including one small business owned by a tribal government, as defined by the U.S. Small Business Administration (SBA). The EPA prepared a small business screening analysis to determine if any of the identified affected entities are small entities, as defined by the SBA. This analysis is available in the Docket for this action (Docket ID No. EPA–HQ–OAR–2016–0243). The Agency has determined that 21 small ultimate PCWP manufacturing parent companies out of 65 may experience an impact from less than 0.01 percent to 1.94 percent of annual sales, with only 2 out of these 21 ultimate parent companies experiencing an impact of more than 1 percent of annual sales. Because the total annualized costs associated with the proposed amendments are expected to be more than 1 percent of annual sales revenue for only 2 small business ultimate parent owners in the PCWP manufacturing source category, there are, therefore, no significant economic impacts from these proposed amendments on the 27 affected facilities that are owned by 21 affected small ultimate parent entities.

Details of this analysis are presented in *Economic Impact and Small Business Screening Assessments for Proposed Amendments to the National Emission Standards for Hazardous Air Pollutants for Plywood and Composite Wood Products Manufacturing Facilities,* located in the docket for this action (Docket ID No. EPA–HQ–OAR–2016–0243).

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain an unfunded mandate of $100 million or more as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. While this action creates an enforceable duty on the private sector and one facility owned by a tribal government, the cost does not exceed $100 million or more.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the National Government and the states, or on the distribution of power and responsibilities among the various levels of government.

F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

This action does not have tribal implications as specified in Executive Order 13175. Thus, Executive Order 13175 does not apply to this action. However, consistent with the EPA policy on coordination and consultation with Indian tribes, the EPA will offer government-to-government consultation with tribes as requested.

G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

This action is not subject to Executive Order 13045 because the EPA does not believe the environmental health or safety risks addressed by this action present a disproportionate risk to children. This action proposes emission standards for previously unregulated pollutants; therefore, the rule should result in health benefits to children by reducing the level of HAP emissions from the PCWP manufacturing process.

H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

This action is not a ''significant energy action'' because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. In this proposed action, the EPA is setting emission standards for previously unregulated pollutants. This does not impact energy supply, distribution, or use.

I. National Technology Transfer and Advancement Act (NTTAA) and 1 CFR Part 51

This action involves technical standards. Therefore, the EPA conducted searches for the PCWP NESHAP through the Enhanced National Standards Systems Network (NSSN) Database managed by the American National Standards Institute (ANSI). We also conducted a review of voluntary consensus standards (VCS) organizations and accessed and searched their databases. We conducted searches for EPA Methods 1, 1A, 2, 2A, 2C, 2D, 2F, 2G, 3, 3A, 3B, 4, 5, 10, 18, 25A, 26A, 29 of 40 CFR part 60, appendix A; 204, 204A, 204B, 204C, 204D, 204E, 204F, 205 of 40 CFR part 51, appendix M; 308, 316, 320, 326 of 40 CFR part 63; OTM–46, and 0011 (SW–846). During the EPA's VCS search, if the title or abstract (if provided) of the VCS described technical sampling and analytical procedures that are similar to the EPA's referenced method, the EPA ordered a copy of the standard and reviewed it as a potential equivalent method. We reviewed all potential standards to determine the practicality of the VCS for this rule. This review requires significant method validation data that meet the requirements of EPA Method 301 for accepting alternative methods or scientific, engineering, and policy equivalence to procedures in the EPA referenced methods. The EPA may reconsider determinations of impracticality when additional information is available for any particular VCS.

Detailed information on the VCS search and determination can be found in the memorandum, *Voluntary Consensus Standard Results for NEHSAP: Plywood and Composite Wood Products,* which is available in the docket for this action (Docket ID No. EPA–HQ–OAR–2016–0243). Two VCS were identified as acceptable alternatives to the EPA test methods for this proposed rule.

The VCS ANSI/ASME PTC 19.10–1981 Part 10 (2010), ''Flue and Exhaust Gas Analyses,'' is an acceptable alternative to EPA Method 3B manual portions only and not the instrumental portion. This method determines quantitatively the gaseous constituents of exhausts resulting from stationary combustion sources. The manual procedures (but not instrumental procedures) of ASME/ANSI PTC 19.10–1981 Part 10 may be used as an alternative to EPA Method 3B for measuring the oxygen or carbon dioxide content of the exhaust gas. The gases covered in ASME/ANSI PTC 19.10–1981 are oxygen, carbon dioxide, carbon monoxide, nitrogen, sulfur dioxide, sulfur trioxide, nitric oxide, nitrogen dioxide, hydrogen sulfide, and hydrocarbons. However, the use in this rule is only applicable to oxygen and carbon dioxide. This VCS may be obtained from American Society of Mechanical Engineers (ASME), Three Park Avenue, New York, NY 10016–5990, telephone (800) 843–2763, *https://www.asme.org.* The EPA is proposing to incorporate by reference the VCS ANSI/ASME PTC 19.10–1981 Part 10 (2010), ''Flue and Exhaust Gas Analyses,'' as an acceptable alternative to EPA Method 3B manual portions only and not the instrumental portion.

The VCS ASTM D6348–12e1, ''Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform (FTIR) Spectroscopy,'' is an acceptable alternative to EPA Method 320 with certain conditions. The VCS ASTM D6348–12e1 employs an extractive sampling system to direct stationary source effluent to an FTIR spectrometer for the identification and quantification of gaseous compounds. Concentration results are provided. This test method is potentially applicable for the determination of compounds that (1) have sufficient vapor pressure to be transported to the FTIR spectrometer and (2) absorb a sufficient amount of infrared radiation to be detected. The VCS ASTM D6348–12e1 may be obtained from *https://www.astm.org* or from the ASTM Headquarters at 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, Pennsylvania, 19428–2959. The EPA is proposing to incorporate by reference the VCS ASTM D6348–12e1, ''Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform (FTIR) Spectroscopy,'' as an acceptable alternative to EPA Method 320 in place of ASTM D6348–03. ASTM D6348–03(2010) was determined to be equivalent to EPA Method 320 with caveats. ASTM D6348–12e1 is a revised version of ASTM D6348–03(2010) and includes a new section on accepting the results from the direct measurement of a certified spike gas cylinder but lacks the caveats placed on the ASTM D6348–03(2010) version. ASTM D6348–12e1 is an extractive FTIR field test method used to quantify gas phase concentrations of multiple analytes from stationary source effluent and is an acceptable alternative to EPA Method 320 at this time with caveats requiring inclusion of selected annexes to the standard as mandatory. When using ASTM D6348–12e1, the following conditions must be met:

- The test plan preparation and implementation in the Annexes to ASTM D6348–03, sections A1 through A8 are mandatory; and
- In ASTM D6348–03, Annex A5 (Analyte Spiking Technique), the percent (%) R must be determined for each target analyte (Equation A5.5).

In order for the test data to be acceptable for a compound, percent R must be 70 percent $\geq$ R $\leq$ 130 percent. If the percent R value does not meet this criterion for a target compound, the test data is not acceptable for that compound and the test must be repeated for that analyte (*i.e.,* the sampling and/or analytical procedure should be adjusted before a retest). The percent R value for each compound must be reported in the test report, and all field measurements must be corrected with the calculated percent R value for that compound by using the following equation:

Reported Results = ((Measured Concentration in Stack))/(percent R) $\times$ 100.

In addition to the VCS mentioned earlier in this preamble, we are proposing to incorporate by reference ASTM D1835–05, ''Standard Specification for Liquefied Petroleum (LP) Gases,'' for use in the proposed definition of natural gas in 40 CFR 63.2292, and ASTM D2879–18, ''Standard Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope'' for use in the proposed definition of maximum true vapor pressure in 40 CFR 63.2292. The VCS ASTM D–1835–05 covers those products commonly referred to as liquefied petroleum gases, consisting of propane, propene (propylene), butane, and mixtures of these materials. With ASTM D2879–18, the vapor pressure of a substance as determined by isoteniscope reflects a property of the sample as received including most volatile components but excluding dissolved fixed gases such as air. The isoteniscope method is designed to minimize composition changes which may occur during the course of measurement. These VCS ASTM may be obtained from *https://www.astm.org* or from the ASTM Headquarters at 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, Pennsylvania, 19428–2959.

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898 (59 FR 7629, February 16, 1994) directs Federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations (people of color and/or Indigenous peoples) and low-income populations.

The EPA believes that the human health or environmental conditions that exist prior to this action result in or have the potential to result in disproportionate and adverse human health or environmental effects on people of color, low-income populations, and/or Indigenous peoples. The assessment of populations in close proximity of PCWP manufacturing facilities shows that the percentage of African Americans, Native Americans, people below poverty level, and people over 25 without a high school diploma are higher than the national average (see section V.F of the preamble). The higher percentages are driven by 19 of the 223 facilities in the source category.

The EPA believes that this action is likely to reduce existing disproportionate and adverse effects on people of color, low-income populations, and/or Indigenous peoples. The EPA is proposing MACT standards for total HAP, MDI, PM as a surrogate for non-Hg metals, Hg, HCl, PAH, and D/F. The EPA expects all 223 PCWP facilities to implement changes to comply with the MACT standards (*e.g.,* control measures, work practices, emissions testing, monitoring, reporting, and recordkeeping for the process units used) and expects that HAP exposures for the people of color and low-income individuals living near these facilities would decrease.

The information supporting this Executive Order review is contained in section V.F of this preamble.

List of Subjects in 40 CFR Part 63

Environmental protection, Air pollution control, Hazardous substances, Incorporation by reference, Reporting and recordkeeping requirements.

Michael S. Regan,

Administrator.

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