ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[EPA–HQ–OAR–2007–0544; FRL–9609–8]

RIN 2060–AQ41

National Emission Standards for Hazardous Air Pollutants From the Pulp and Paper Industry

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The EPA is proposing amendments to the national emission standards for hazardous air pollutants for the pulp and paper industry to address the results of the residual risk and technology review that the EPA is required to conduct under sections 112(d)(6) and (f)(2) of the Clean Air Act. These proposed amendments include revisions to the kraft pulping process condensates standards; a requirement for 5-year repeat emissions testing for selected process equipment; revisions to provisions addressing periods of startup, shutdown and malfunction; additional test methods for measuring methanol; and technical and editorial changes.

DATES: *Comments.* Comments must be received on or before February 27, 2012. Under the Paperwork Reduction Act, comments on the information collection provisions are best assured of having full effect if the Office of Management and Budget receives a copy of your comments on or before January 26, 2012.

Public Hearing. If anyone contacts the EPA requesting to speak at a public hearing by January 6, 2012, a public hearing will be held on January 11, 2012.

ADDRESSES: Submit your comments, identified by Docket ID Number EPA–HQ–OAR–2007–0544, by one of the following methods:

- *Federal eRulemaking Portal: http://www.regulations.gov.* Follow the online instructions for submitting comments.
- *Agency Web site: http://www.epa.gov/oar/docket.html.* Follow the instructions for submitting comments on the EPA Air and Radiation Docket Web site.
- *Email: a-and-r-docket@epa.gov.* Include EPA–HQ–OAR–2007–0544 in the subject line of the message.
- *Fax:* Fax your comments to: (202) 566–9744, Attention Docket ID Number EPA–HQ–OAR–2007–0544.
- *Mail:* Send your comments to: EPA Docket Center (EPA/DC), Environmental Protection Agency, Mailcode: 2822T, 1200 Pennsylvania Ave. NW., Washington, DC 20460, Attention: Docket ID Number EPA–HQ–OAR–2007–0544. Please include a total of two copies. In addition, please mail a copy of your comments on the information collection provisions to the Office of Information and Regulatory Affairs, Office of Management and Budget (OMB), Attn: Desk Officer for EPA, 725 17th Street NW., Washington, DC 20503.
- *Hand Delivery or Courier:* In person or by courier, deliver comments to the EPA Docket Center, EPA West (Air Docket), Room 3334, 1301 Constitution Ave. NW., Washington, DC 20460, Attention: Docket ID Number EPA–HQ–OAR–2007–0544. Such deliveries are only accepted during the Docket's normal hours of operation (8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays), and special arrangements should be made for deliveries of boxed information. Please include two copies.

Instructions. Direct your comments to Docket ID Number EPA–HQ–OAR–2007–0544. The EPA policy is that all comments received will be included in the public docket without change and may be made available online at *http://www.regulations.gov*, including any personal information provided, unless the comment includes information claimed to be confidential business information or other information whose disclosure is restricted by statute. Do not submit information that you consider to be confidential business information or otherwise protected through *http://www.regulations.gov* or email. The *http://www.regulations.gov* Web site is an ''anonymous access'' system, 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 *http://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 disk or CD–ROM 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 avoid the use of special characters, any form of encryption and be free of any defects or viruses. For additional information about the EPA public docket, visit the EPA Docket Center homepage at *http://www.epa.gov/epahome/dockets.htm.*

Docket. The EPA has established a docket for this rulemaking under Docket ID Number EPA–HQ–OAR–2007–0544. All documents in the docket are listed in the *http://www.regulations.gov* index. Although listed in the index, some information is not publicly available (*e.g.,* confidential business information or other information whose disclosure is restricted by statute). Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically in *http://www.regulations.gov* or in hard copy at the EPA Docket Center, EPA West, Room 3334, 1301 Constitution Ave., NW., Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566–1744, and the telephone number for the EPA Docket Center is (202) 566–1742.

Public Hearing. If a public hearing is held, it will begin at 10 a.m. on January 11, 2012 and will be held at the EPA campus in Research Triangle Park, North Carolina, or at an alternate facility nearby. Persons interested in presenting oral testimony or inquiring as to whether a public hearing is to be held should contact Ms. Joan Rogers, Office of Air Quality Planning and Standards, Sector Policies and Programs Division, Natural Resources Group (E143–03), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541–4487.

FOR FURTHER INFORMATION CONTACT: For questions about this proposed action, contact Mr. John Bradfield, Office of Air Quality Planning and Standards, (E143–03), Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541–3062; fax number: (919) 541–3470; and email address: *bradfield.john@epa.gov.* For specific information regarding the risk modeling methodology, contact Mr. James Hirtz, Health and Environmental Impacts Division (C539–02), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541–0881; fax number: (919) 541–0840; and email address: *hirtz.james@epa.gov.* For information about the applicability of the national emission standards for hazardous air pollutants to a particular entity, contact the appropriate person listed in Table 1 to this preamble.

TABLE 1—LIST OF EPA CONTACTS FOR THE NESHAP ADDRESSED IN THIS PROPOSED ACTION

NESHAP for:	OECA Contact [1]	OAQPS Contacts [2]
Pulp and Paper	Sara Ayres (202) 564–5391 *ayres.sara@epa.gov.*.	John Bradfield (919) 541–3062 *bradfield.john@epa.gov.*

[1] EPA's Office of Enforcement and Compliance Assurance.
[2] EPA's Office of Air Quality Planning and Standards.

SUPPLEMENTARY INFORMATION:

Preamble Acronyms and Abbreviations

Several acronyms and terms used to describe industrial processes, data inventories and risk modeling are included in this preamble. While this may not be an exhaustive list, to ease the reading of this preamble and for reference purposes, the following terms and acronyms are defined here:

ACGIH American Conference of Governmental Industrial Hygienists
ADAF Age-Dependent Adjustment Factors
AEGL Acute Exposure Guideline Levels
AERMOD Air dispersion model used by the HEM–3 model
ASME American Society of Mechanical Engineers
ATSDR Agency for Toxic Substances and Disease Registry
BACT Best Available Control Technology
BBDR Biologically-Based Dose-Response
CAA Clean Air Act
CalEPA California Environmental Protection Agency
CBI Confidential Business Information
CCA Clean Condensate Alternative
CD ROM Compact Disk Read Only Memory
CDX Central Data Exchange
CEEL Community Emergency Exposure Levels
CEMS Continuous Emissions Monitoring System
CFR Code of Federal Regulations
CIIT Chemical Industry Institute of Toxicology
EIA Economic Impact Analysis
EJ Environmental Justice
EPA Environmental Protection Agency
ERPG Emergency Response Planning Guidelines
ERT Electronic Reporting Tool
ft Feet
ft^3 Cubic Feet
FTE Full-Time Equivalents
HAP Hazardous Air Pollutants
HEM–3 Human Exposure Model version 3
HI Hazard Index
HON Hazardous Organic National Emissions Standards for Hazardous Air Pollutants
HQ Hazard Quotient
hr Hour
HVLC High Volume Low Concentration
ICR Information Collection Request
IRIS Integrated Risk Information System
ISIS Industrial Sectors Integrated Solution Model
km Kilometer
LAER Lowest Achievable Emission Rate
lb Pounds
LVHC Low Volume High Concentration
m^3 Cubic Meters
MACT Maximum Achievable Control Technology
MACT Code Code within the NEI used to identify processes included in a source category
MEK Methyl Ethyl Ketone
mg Milligrams
MIR Maximum Individual Risk
MRL Minimal Risk Level
NAC/AEGL National Advisory Committee for Acute Exposure Guideline Levels for Hazardous Substances
NAICS North American Industry Classification System
NAS National Academy of Sciences
NATA National Air Toxics Assessment
NCASI National Council for Air and Stream Improvement
NEI National Emissions Inventory
NESHAP National Emissions Standards for Hazardous Air Pollutants
NIOSH National Institutes for Occupational Safety and Health
NRC National Research Council
NSPS New Source Performance Standard
NTTAA National Technology Transfer and Advancement Act of 1995
O&M Operation and Maintenance
OAQPS EPA's Office of Air Quality Planning and Standards
ODTP Oven-Dried Tons of Pulp
OECA EPA's Office of Enforcement and Compliance Assurance
OMB Office of Management and Budget
PB–HAP Hazardous air pollutants known to be persistent and bio-accumulative in the environment
POM Polycyclic Organic Matter
ppm Parts Per Million
ppmw Parts Per Million by Weight
PRA Paperwork Reduction Act
QA Quality Assurance
QC Quality Control
RACT Reasonably Available Control Technology
RBLC RACT/BACT/LAER Clearinghouse
REL Reference Exposure Level
RFA Regulatory Flexibility Act
RfC Reference Concentration
RfD Reference Dose
RTR Residual Risk and Technology Review
SAB Science Advisory Board
SBA Small Business Administration
SCC Source Classification Code
Sec Second
SISNOSE Significant Impact on a Substantial Number of Small Entities
SOP Standard Operating Procedures
SSM Startup, Shutdown, and Malfunction
TOSHI Target Organ-Specific Hazard Index
TPY Tons Per Year
TRI Toxics Release Inventory
TRIM Total Risk Integrated Modeling System
TRIM.FaTE Fate, Transport and Environmental Exposure module of EPA's Total Risk Integrated Modeling System
TTN Technology Transfer Network
UF Uncertainty Factor
UMRA Unfunded Mandates Reform Act of 1995
URE Unit Risk Estimate
VCS Voluntary Consensus Standards
VOC Volatile Organic Compound
WWW Worldwide Web
µg Micrograms

Organization of This Document

The information in this preamble is organized as follows:

I. General Information

A. What is the statutory authority for this action?

Section 112 of the CAA establishes a two-stage regulatory process to address emissions of HAP from stationary sources. In the first stage, after the EPA has identified categories of sources emitting one or more of the HAP listed in CAA section 112(b), CAA section 112(d) calls for us to promulgate NESHAP for those sources. ''Major sources'' are those that emit or have the potential to emit 10 tpy or more of a single HAP or 25 tpy or more of any combination of HAP. For major sources, these technology-based standards must reflect the maximum degree of emissions reductions of HAP achievable (after considering cost, energy requirements and nonair quality health and environmental impacts) and are commonly referred to as MACT standards.

Maximum achievable control technology standards must require the maximum degree of emissions reduction through the application of measures, processes, methods, systems or techniques, including, but not limited to, measures that: (A) Reduce the volume of or eliminate pollutants through process changes, substitution of materials or other modifications; (B) enclose systems or processes to eliminate emissions; (C) capture or treat pollutants when released from a process, stack, storage or fugitive emissions point; (D) are design, equipment, work practice or operational standards (including requirements for operator training or certification); or (E) are a combination of the above (CAA section 112(d)(2)(A)–(E)). The MACT standards may take the form of design, equipment, work practice or operational standards where the EPA first determines either that: (A) A pollutant cannot be emitted through a conveyance designed and constructed to emit or capture the pollutants, or that any requirement for, or use of, such a conveyance would be inconsistent with law; or (B) the application of measurement methodology to a particular class of sources is not practicable due to technological and economic limitations (CAA sections 112(h)(1)–(2)).

The MACT ''floor'' is the minimum control level allowed for MACT standards promulgated under CAA section 112(d)(3) and may not be based on cost considerations. For new sources, the MACT floor cannot be less stringent than the emission control that is achieved in practice by the best-controlled similar source. The MACT floors for existing sources can be less stringent than floors for new sources, but they cannot be less stringent than the average emissions limitation achieved by the best-performing 12 percent of existing sources in the category or subcategory (or the best-performing five sources for categories or subcategories with fewer than 30 sources). In developing MACT standards, we must also consider control options that are more stringent than the floor. We may establish standards more stringent than the floor based on the consideration of the cost of achieving the emissions reductions, any nonair quality health and environmental impacts and energy requirements.

The EPA is then required to review these technology-based standards and to revise them ''as necessary (taking into account developments in practices, processes, and control technologies)'' no less frequently than every 8 years, under CAA section 112(d)(6). In conducting this review, the EPA is not obliged to completely recalculate the prior MACT determination and, in particular, is not obligated to recalculate the MACT floors. *NRDC* v. *EPA,* 529 F.3d 1077, 1084 (DC Cir., 2008).

The second stage in standard-setting focuses on reducing any remaining ''residual'' risk according to CAA section 112(f). This provision requires, first, that the EPA prepare a *Report to Congress* discussing (among other things) methods of calculating the risks posed (or potentially posed) by sources after implementation of the MACT standards, the public health significance of those risks, and the EPA's recommendations as to legislation regarding such remaining risk. The EPA prepared and submitted this report (*Residual Risk Report to Congress,* EPA–453/R–99–001) in March 1999. Congress did not act in response to the report, thereby triggering the EPA's obligation under CAA section 112(f)(2) to analyze and address residual risk.

Section 112(f)(2) of the CAA requires us to determine, for source categories subject to certain MACT standards, whether those emissions standards provide an ample margin of safety to protect public health. If the MACT standards apply to a source category emitting a HAP that is ''classified as a known, probable, or possible human carcinogen do not reduce lifetime excess cancer risks to the individual most exposed to emissions from a source in the category or subcategory to less than one in one million,'' the EPA must promulgate residual risk standards for the source category (or subcategory) as necessary to provide an ample margin of safety to protect public health (CAA section 112(f)(2)(A)). This requirement is procedural. It mandates that the EPA establish CAA section 112(f) residual risk standards if certain risk thresholds are not satisfied but does not determine the level of those standards. *NRDC* v. *EPA,* 529 F. 3d at 1083. The second sentence of CAA section 112(f)(2) sets out the substantive requirements for residual risk standards: Protection of public health with an ample margin of safety based on the EPA's interpretation of this standard in effect at the time of the CAA amendments. *Id.* This refers to the Benzene NESHAP, described in the next paragraph. The EPA may adopt residual risk standards equal to existing MACT standards (or to standards adopted after the technology review required by CAA section 112(d)(6)) if the EPA determines that the existing standards are sufficiently protective, even if (for example) excess cancer risks to a most exposed individual are not reduced to less than 1 in 1 million. *Id.* at 1083, (''If EPA determines that the existing technology-based standards provide an 'ample margin of safety,' then the Agency is free to readopt those standards during the residual risk rulemaking''). Section 112(f)(2) of the CAA further authorizes the EPA to adopt more stringent standards, if necessary, ''to prevent, taking into consideration costs, energy, safety and other relevant factors, an adverse environmental effect.'' [1]

As just noted, CAA section 112(f)(2) expressly preserves our use of the two-step process for developing standards to address any residual risk and our

[1] ''Adverse environmental effect'' is defined in CAA section 112(a)(7) as any significant and widespread adverse effect, which may be reasonably anticipated to wildlife, aquatic life, or natural resources, including adverse impacts on populations of endangered or threatened species or significant degradation of environmental qualities over broad areas.

interpretation of ''ample margin of safety'' developed in the *National Emission Standards for Hazardous Air Pollutants: Benzene Emissions from Maleic Anhydride Plants, Ethylbenzene/Styrene Plants, Benzene Storage Vessels, Benzene Equipment Leaks, and Coke By-Product Recovery Plants* (Benzene NESHAP) (54 FR 38044, September 14, 1989). The first step in this process is the determination of acceptable risk. The second step provides for an ample margin of safety to protect public health, which is the level at which the standards are set (unless a more stringent standard is required to prevent, taking into consideration costs, energy, safety and other relevant factors, an adverse environmental effect).

The terms ''individual most exposed,'' ''acceptable level,'' and ''ample margin of safety'' are not specifically defined in the CAA. However, CAA section 112(f)(2)(B) preserves the EPA's interpretation set out in the Benzene NESHAP, and the Court in *NRDC* v. *EPA* concluded that the EPA's interpretation of CAA section 112(f)(2) is a reasonable one. See *NRDC* v. *EPA,* 529 F.3d at 1083 (D. C. Cir. 2008), which says ''[S]ubsection 112(f)(2)(B) expressly incorporates EPA's interpretation of the Clean Air Act from the Benzene standard, complete with a citation to the **Federal Register**.'' See also, *A Legislative History of the Clean Air Act Amendments of 1990,* volume 1, p. 877 (Senate debate on Conference Report). We also notified Congress in the *Residual Risk Report to Congress* that we intended to use the Benzene NESHAP approach in making CAA section 112(f) residual risk determinations (EPA–453/R–99–001, p. ES–11).

In the Benzene NESHAP, we stated as an overall objective:

> * * * in protecting public health with an ample margin of safety, we strive to provide maximum feasible protection against risks to health from hazardous air pollutants by: (1) protecting the greatest number of persons possible to an individual lifetime risk level no higher than approximately 1 in 1 million; and (2) limiting to no higher than approximately 1 in 10 thousand [*i.e.,* 100 in 1 million] the estimated risk that a person living near a facility would have if he or she were exposed to the maximum pollutant concentrations for 70 years.

The agency also stated that, ''The EPA also considers incidence (the number of persons estimated to suffer cancer or other serious health effects as a result of exposure to a pollutant) to be an important measure of the health risk to the exposed population. Incidence measures the extent of health risks to the exposed population as a whole, by providing an estimate of the occurrence of cancer or other serious health effects in the exposed population.'' The agency went on to conclude that ''estimated incidence would be weighed along with other health risk information in judging acceptability.'' As explained more fully in our *Residual Risk Report to Congress,* the EPA does not define ''rigid line[s] of acceptability,'' but rather considers broad objectives to be weighed with a series of other health measures and factors (EPA–453/R–99–001, p. ES–11). The determination of what represents an ''acceptable'' risk is based on a judgment of ''what risks are acceptable in the world in which we live'' (*Residual Risk Report to Congress,* p. 178, quoting the D.C. Circuit's en banc *Vinyl Chloride* decision at 824 F.2d 1165) recognizing that our world is not risk-free.

In the Benzene NESHAP, we stated that ''EPA will generally presume that if the risk to [the maximum exposed] individual is no higher than approximately 1 in 10 thousand, that risk level is considered acceptable.'' 54 FR 38045. We discussed the maximum individual lifetime cancer risk as being ''the estimated risk that a person living near a plant would have if he or she were exposed to the maximum pollutant concentrations for 70 years.'' *Id.* We explained that this measure of risk ''is an estimate of the upper bound of risk based on conservative assumptions, such as continuous exposure for 24 hours per day for 70 years.'' *Id.* We acknowledge that maximum individual lifetime cancer risk ''does not necessarily reflect the true risk, but displays a conservative risk level which is an upper-bound that is unlikely to be exceeded.'' *Id.*

Understanding that there are both benefits and limitations to using maximum individual lifetime cancer risk as a metric for determining acceptability, we acknowledged in the 1989 Benzene NESHAP that ''consideration of maximum individual risk * * * must take into account the strengths and weaknesses of this measure of risk.'' *Id.* Consequently, the presumptive risk level of 100 in 1 million (1 in 10 thousand) provides a benchmark for judging the acceptability of maximum individual lifetime cancer risk, but does not constitute a rigid line for making that determination. *Id.* Further, in the Benzene NESHAP, we noted that, ''Particular attention will also be accorded to the weight of evidence presented in the risk assessment of potential carcinogenicity or other health effects of a pollutant. While the same numerical risk may be estimated for an exposure to a pollutant judged to be a known human carcinogen, and to a pollutant considered a possible human carcinogen based on limited animal test data, the same weight cannot be accorded to both estimates. In considering the potential public health effects of the two pollutants, the Agency's judgment on acceptability, including the MIR, will be influenced by the greater weight of evidence for the known human carcinogen.'' *Id.* at 38046.

The agency also explained in the 1989 Benzene NESHAP the following: ''In establishing a presumption for MIR [maximum individual cancer risk], rather than a rigid line for acceptability, the Agency intends to weigh it with a series of other health measures and factors. These include the overall incidence of cancer or other serious health effects within the exposed population, the numbers of persons exposed within each individual lifetime risk range and associated incidence within, typically, a 50 km exposure radius around facilities, the science policy assumptions and estimation uncertainties associated with the risk measures, weight of the scientific evidence for human health effects, other quantified or unquantified health effects, effects due to co-location of facilities, and co-emission of pollutants.'' *Id.*

In some cases, these health measures and factors taken together may provide a more realistic description of the magnitude of risk in the exposed population than that provided by maximum individual lifetime cancer risk alone. As explained in the Benzene NESHAP, ''[e]ven though the risks judged ''acceptable'' by the EPA in the first step of the *Vinyl Chloride* inquiry are already low, the second step of the inquiry, determining an ''ample margin of safety,'' again includes consideration of all of the health factors, and whether to reduce the risks even further.'' Beyond that information, additional factors relating to the appropriate level of control will also be considered, including costs and economic impacts of controls, technological feasibility, uncertainties, and any other relevant factors. Considering all of these factors, the Agency will establish the standard at a level that provides an ample margin of safety to protect the public health as required by section 112.''

In *NRDC* v. *EPA,* 529 F.3d 1077, 1082 (D.C. Cir. 2008), the Court of Appeals held that section 112(f)(2) ''incorporates EPA's 'interpretation' of the Clean Air Act from the Benzene Standard, and the text of this provision draws no distinction between carcinogens and non-carcinogens.'' Additionally, the

Court held there is nothing on the face of the statute that limits the agency's section 112(f) assessment of risk to carcinogens. *Id.* at 1081–82. In the *NRDC* case, the petitioners argued, among other things, that section 112(f)(2)(B) applied only to non-carcinogens. The D.C. Circuit rejected this position, holding that the text of that provision ''draws no distinction between carcinogens and non-carcinogens,'' I*d.,* and that Congress' incorporation of the Benzene standard applies equally to carcinogens and non-carcinogens.

In the ample margin of safety decision process, the agency again considers all of the health risks and other health information considered in the first step. Beyond that information, additional factors relating to the appropriate level of control will also be considered, including costs and economic impacts of controls, technological feasibility, uncertainties and any other relevant factors. Considering all of these factors, the agency will establish the standard at a level that provides an ample margin of safety to protect the public health, as required by CAA section 112(f). 54 FR 38046.

B. Does this action apply to me?

The regulated industrial source category that is the subject of this proposal is listed in Table 2 of this preamble. Table 2 of this preamble is not intended to be exhaustive, but rather provides a guide for readers regarding the entities likely to be affected by this proposed action. This standard, and any changes considered in this rulemaking, would be directly applicable to affected sources. Federal, state, local and tribal government entities are not affected by this proposed action. As defined in the Source Category Listing Report published by the EPA in 1992, the pulp and paper production source category includes any facility engaged in the production of pulp and/or paper. This category includes, but is not limited to, integrated mills (where pulp and paper or paperboard are manufactured on-site), non-integrated mills (where either pulp or paper/paperboard are manufactured on-site, but not both), and secondary fiber mills (where waste paper is used as the primary raw material). Examples of pulping methods include kraft, soda, sulfite, semi-chemical and mechanical.

TABLE 2—NESHAP AND INDUSTRIAL SOURCE CATEGORIES AFFECTED BY THIS PROPOSED ACTION

Source category	NESHAP	NAICS code [1]	MACT code [2]
Pulp and Paper	Pulp and Paper	322	1626–1

[1] North American Industry Classification System.
[2] Maximum Achievable Control Technology.

C. 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 proposal will also be available on the WWW through the EPA's TNN. Following signature by the EPA Administrator, a copy of this proposed action will be posted on the TTN's policy and guidance page for newly proposed or promulgated rules at the following address: *http://www.epa.gov/ttn/atw/rrisk/rtrpg.html.* The TTN provides information and technology exchange in various areas of air pollution control.

Additional information is available on the RTR Web page at *http://www.epa.gov/ttn/atw/rrisk/rtrpg.html.* This information includes source category descriptions and detailed emissions estimates and other data that were used as inputs to the risk assessments.

D. What should I consider as I prepare my comments for the EPA?

Submitting CBI. Do not submit information containing CBI to the EPA through *http://www.regulations.gov* or email. Clearly mark the part or all of the information that you claim to be CBI. For CBI information on a disk or CD ROM that you mail to the EPA, mark the outside of the disk or CD ROM as CBI and then identify electronically within the disk or CD ROM the specific information that is claimed as CBI. In addition to one complete version of the comment that includes information claimed as CBI, a copy of the comment that does not contain the information claimed as CBI must be submitted for inclusion in the public docket. If you submit a CD ROM or disk that does not contain CBI, mark the outside of the disk or CD ROM clearly that it does not contain CBI. 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 CFR part 2. Send or deliver information identified as CBI only to the following address: Roberto Morales, OAQPS Document Control Officer (C404–02), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, Attention Docket ID Number EPA–HQ–OAR–2007–0544.

II. Background

A. What is this source category and how did the MACT standard regulate its HAP emissions?

The pulp and paper production source category includes any facility engaged in the production of pulp and/or paper. This category includes, but is not limited to, integrated mills (where pulp and paper or paperboard are manufactured on-site), non-integrated mills (where paper/paperboard or pulp are manufactured, but not both), and secondary fiber mills (where waste paper is used as the primary raw material). The pulp and paper production process includes operations such as pulping, bleaching, chemical recovery and papermaking. Different pulping processes are used, including chemical processes (kraft, soda, sulfite and semi-chemical) and mechanical, secondary fiber or non-wood processes.

The NESHAP from the pulp and paper Industry (or MACT rule) was promulgated on April 15, 1998 (63 FR 18504) and codified at 40 CFR part 63, subpart S. As promulgated in 1998, the subpart S MACT standard applies to major sources of HAP emissions from the pulp production areas (*e.g.,* pulping system vents, pulping process condensates) at chemical, mechanical, secondary fiber and non-wood pulp mills; bleaching operations; and papermaking systems. A separate NESHAP (40 CFR part 63, subpart MM) applicable to chemical recovery processes at kraft, soda, sulfite and stand-alone semi-chemical pulp mills was promulgated on January 12, 2001 (66 FR 3180). However, only subpart S is undergoing the RTR that is the subject of this proposal.

This is the first in a series of rules being developed for the pulp and paper

industrial sector. This proposal includes both a risk assessment and a technology review of the emission sources in subpart S, as well as a risk assessment of the whole facility. The whole facility risk assessment includes emissions from the other sources in the pulp and paper industrial sector: boilers covered under subpart DDDDD, chemical recovery systems covered under subpart MM, various sources covered under the NSPS for kraft pulp mills (40 CFR part 60, subpart BB), and other applicable MACT emission sources. In the future, we will also conduct a RTR for the subpart MM category, as well as a review of the kraft pulp mills NSPS, subpart BB. When we conduct the RTR for the subpart MM rule, subpart S emission sources will be included in the facilitywide risk assessment.

According to results of the EPA's 2011 pulp and paper ICR, there are a total of 171 major sources in the United States including:

- 111 major sources that carry out chemical wood pulping (kraft, sulfite, soda or semi-chemical);
- 33 major sources that carry out mechanical, groundwood, secondary fiber and non-wood pulping (without chemical wood pulping);
- 94 major sources that perform bleaching; and
- 156 major sources that manufacture paper or paperboard products.

Facilities in the category perform at least one of several pulp and papermaking operations (*e.g.,* chemical pulping, bleaching and papermaking; pulping and unbleached papermaking; *etc.*).

Subpart S includes numerical emission limits for pulping system vents, pulping process condensates and bleaching system vents. The control systems used by most mills to meet the subpart S emission limits are as follows:

- Pulping system vents—thermal oxidizers, power boilers, lime kilns and recovery furnaces.
- Pulping process condensates—steam strippers, biological treatment and recycling to pulping equipment that is controlled by the pulping vent standards.
- Bleaching system vents—caustic scrubbers (for chlorinated HAPs, other than chloroform) and process modifications to eliminate the use of chlorine and hypochlorite.

Facilities that only purchase pre-consumer paper or paperboard stock products and convert them into other products (*i.e.,* converting operations) are not part of the subpart S source category and are not affected by today's action.

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

In February 2011, the EPA issued an ICR, pursuant to CAA section 114, to United States pulp and paper manufacturers to gather information needed to conduct the regulatory reviews required under CAA sections 112(d)(6) and (f)(2). The ICR was divided into three parts, with each part due on a different date. Part I requested available information regarding subpart S process equipment, control devices, pulp and paper production, bleaching and other aspects of facility operations, to support the subpart S technology review and a later review of the kraft pulp mills NSPS under 40 CFR part 60, subpart BB. Part II requested updated inventory data for all pulp and paper emission sources, to support the residual risk assessment for the pulp and paper sector (including subparts S and MM) and to both supplement and update the NEI for the source category. Part III requested available information on subpart MM chemical recovery combustion equipment, control devices, *etc.,* to support a later subpart MM technology review (which will include a source category and a facilitywide risk assessment) and a subpart BB NSPS review. Responses to all three parts of the ICR have been received and data from the first two parts of the ICR have been compiled. The response rate for the subpart S ICR was 100 percent.[2]

III. Analyses Performed

In this section, we describe the analyses performed to support the proposed decisions for the RTR for this source category.

A. How did we estimate risks posed by the source category?

The EPA conducted risk assessments that provided estimates of (1) the MIR posed by the HAP emissions from the 171 pulp and paper mills in the source category, (2) the distribution of cancer and noncancer risks within the exposed populations, (3) the total cancer incidence, (4) estimates of the maximum TOSHI for chronic exposures to HAP with the potential to cause chronic noncancer health effects, (5) worst-case screening estimates of HQ for acute exposures to HAP with the potential to cause noncancer health effects, and (6) an evaluation of the potential for adverse environmental effects. The risk assessments consisted of seven primary steps, as discussed below.[3] The methods used to assess risks (as described in the seven primary steps below) are consistent with those peer-reviewed by a panel of the EPA's SAB in 2009 and described in their peer review report issued in 2010; they are also consistent with the key recommendations contained in that report.

1. Establishing the Nature and Magnitude of Actual Emissions and Identifying the Emissions Release Characteristics

As discussed in section II.B of this preamble, we used data from Part II of the pulp and paper ICR as the basis for the risk assessment. Part II of the ICR, which concluded in June 2011, targeted facilities that are major sources of HAP emissions and involved an update of pre-populated NEI data spreadsheets (or creation of new NEI datasets). The NEI is a database that contains information about sources that emit criteria air pollutants, their precursors and HAP. The NEI database includes estimates of actual annual air pollutant emissions from point and volume sources; emission release characteristic data such as emission release height, temperature, diameter, velocity and flow rate; and location latitude/longitude coordinates.

The actual annual emissions data in the NEI database were based on data from actual emissions tests and estimates of actual emissions (based on emission factors) provided by subpart S sources surveyed in Part II of the ICR. We received a comprehensive set of emissions test data and emissions estimates that enabled us to conduct risk modeling of detectable HAP emissions for all major source facilities in the pulp and paper category.

Two substantial QA efforts were conducted on the Part II data in order to create the modeling files needed for the residual risk assessment, which included: (1) QA of the updated inventory spreadsheets submitted by each mill prior to import into the compiled database; and (2) QA and standardization of the compiled database.

We reviewed the NEI datasets to ensure that the major pulp and paper processes and pollutants were included and properly identified, to ensure that emissions from the various processes were allocated to the correct source category (*e.g.,* MACT code 1626–1), and to identify emissions and other data anomalies that could affect risk

[2] Part II of the ICR will be available for download on the RTR Web page at: *http://www.epa.gov/ttn/atw/rrisk/rtrpg.html.*

[3] The docket for this rulemaking contains the following document which provides more information on the risk assessment inputs and models: *Draft Residual Risk Assessment for Pulp and Paper Source Category.*

estimates. We also standardized the various codes (*e.g.,* SCCs, pollutant codes), eliminated duplicate records and checked geographic coordinates. We reviewed emissions release parameters for data gaps and errors, assigned the proper default parameters where necessary, segregated the emission points into logical emission process groups and ensured that fugitive release dimensions were specified or given default values where necessary. We made changes based on available information, including updated information voluntarily submitted by pulp and paper mills.[4]

We assigned emissions process groups to distinguish between processes with related SCCs. For mills with VOC emissions data but no HAP emissions data, we developed HAP-to-VOC ratios to estimate HAP emissions, using HAP and VOC emission factors provided by NCASI.[5] However, as noted above, most emissions factors were based on actual tests or actual tests conducted at similar sources (see NCASI Technical Bulletin No. 973).[6] Additionally, the largest HAP emission compound in the category, methanol, at approximately 86 percent of the HAP in the category, is required to be quantified in each compliance test referenced in the standard. Consequently, the greatest proportion of HAP emissions at each facility are based on emission factors derived from actual source specific tests.

For purposes of risk modeling, we reviewed emissions data for chromium, mercury, POM and glycol ether in order to properly speciate emissions. Chromium emissions were speciated as hexavalent chromium (chromium VI) and trivalent chromium (chromium III).[7] Mercury emissions were speciated as particulate divalent mercury, gaseous divalent mercury and elemental gaseous mercury.[8] Total POM emissions were speciated differently for each emission unit type (*e.g.,* gas- or oil-fired paper machine dryers) based on the most common POM compounds emitted from that unit (*e.g.,* phenanthrene, fluorene, pyrene, fluoranthene and/or 2-methylnaphthalene). We speciated all total glycol ether records as 1,2-dimethoxyethane, since this pollutant represents 99 percent of all emissions reported under the glycol ether compounds category from pulp and paper emission sources.[9] Acrolein emissions were removed from the subpart S modeling file due to uncertainty in the emissions estimates.[10]

In addition, we reviewed facilitywide data included in the NEI dataset from the EPA's TRI to ensure that combustion-related dioxin/furan emissions were apportioned to the proper MACT code (0107 or 1626–2). As expected, there were no dioxin/furan emissions data for subpart S sources (MACT code 1626–1).[11]

The Part II NEI emissions dataset for the pulp and paper (subpart S) source category shows 45,000 tpy of total HAP emissions from the 171 mills in the dataset. Methanol, acetaldehyde, cresol/cresylic acid (mixed isomers), phenol, chloroform, formaldehyde, hydrochloric acid, biphenyl, hexachloroethane, xylenes, propionaldehyde and 1,2,4-trichlorobenzene account for the majority of the HAP emissions reported for pulp and paper production (approximately 43,900 tpy, or 97 percent). The remaining 3 percent of the HAP, reported in lesser quantities, include acetophenone, benzene, cumene, carbon disulfide, chlorine, methyl isobutyl ketone, methylene chloride (dichloromethane), naphthalene, styrene, tetrachloroethylene (perchloroethylene), toluene, trichloroethylene and 56 others. Methanol, which accounts for about 86 percent of the total HAP mass emissions, is the HAP emitted by the largest number of facilities, with methanol reported for 166 out of 171 mills in the dataset (or 97 percent). Emissions of the following PB–HAP were identified in the emissions inventory for the pulp and paper (subpart S) source category: cadmium compounds, lead compounds, mercury compounds and POM. As a standard practice in conducting risk assessments for source categories, the EPA conducts a two-step process: (1) Are PB–HAPs being emitted; and (2) are they being released above screening thresholds? If these releases are significantly above the screening thresholds and the EPA has detailed information on the releases and the site, a complete multipathway analysis of the site will be conducted to estimate pathway risks for the source category. Further information about the analysis performed for this category follows in section III.B.4 of this preamble.

2. Establishing the Relationship Between Actual Emissions and MACT-Allowable Emissions Levels

The available emissions data in the Part II NEI emissions dataset include estimates of the mass of HAP actually emitted during the 2009 time period covered under the survey. These ''actual'' emissions levels are often lower than the emissions levels that a facility might be allowed to emit and still comply with the MACT standards. The emissions levels allowed to be emitted by the MACT standards are referred to as the ''MACT-allowable'' emissions levels. These represent the highest emissions levels that could be emitted by the facility without violating the MACT standards.

We discussed the use of both MACT-allowable and actual emissions in the final Coke Oven Batteries residual risk rule (70 FR 19998–19999, April 15, 2005) and in the proposed and final HON residual risk rules (71 FR 34428, June 14, 2006, and 71 FR 76609, December 21, 2006, respectively). In those previous actions, we noted that assessing the risks at the MACT-allowable level is inherently reasonable since these risks reflect the maximum level at which sources could emit while still complying with the MACT standards. However, we also explained that it is reasonable to consider actual emissions, where such data are available, in both steps of the risk analysis, in accordance with the Benzene NESHAP (54 FR 38044, September 14, 1989). It is reasonable to consider actual emissions because sources typically seek to perform better than required by emissions standards to provide an operational cushion to accommodate the variability in manufacturing processes and control device performance. Facilities' actual emissions may also be significantly lower than MACT-allowable emissions for other reasons such as state requirements, better performance of control devices than required by the MACT standards or reduced production.

As described earlier in this section, actual emissions were based on the Part II NEI emissions dataset. To estimate emissions at the MACT-allowable level, we developed a ratio of MACT-allowable to actual emissions for each source type for the facilities in the source category. This ratio is based on the level of control required by the subpart S MACT standards compared to the level of reported actual emissions and available information from the Part I survey on the level of control achieved by the emissions controls in use. For example, if survey data indicated that

[4] For more information, see the memorandum in the docket titled, *Inputs to the Pulp and Paper Industry October 2011 Residual Risk Modeling.*

[5] *Ibid.*

[6] A. Someshwar, NCASI. Compilation of ''Air Toxic'' and Total Hydrocarbon Emissions Data for Pulp and Paper Mill Sources—A Second Update. Technical Bulletin No. 973. February 2010.

[7] For more information, see the memorandum in the docket titled, *Inputs to the Pulp and Paper Industry October 2011 Residual Risk Modeling.*

[8] *Ibid.*

[9] *Ibid.*

[10] *Ibid.*

[11] *Ibid.*

an emission point type was being controlled by 92 percent, while the MACT standard required only 87 percent control, we would estimate that MACT-allowable emissions from that emission point type could be as much as 1.6 times higher (13 percent allowable emissions compared with 8 percent actually emitted), and the ratio of MACT-allowable to actual would be 1.6:1 for this emission point type.[12]

After developing these ratios for each emission point type in this source category, we next applied these ratios on an emission process unit basis to the Part II actual emissions data to obtain risk estimates based on MACT-allowable emissions.[13]

3. Conducting Dispersion Modeling, Determining Inhalation Exposures and Estimating Individual and Population Inhalation Risks

Both long-term and short-term inhalation exposure concentrations and health risks from the source category addressed in this proposal were estimated using the HEM–3 human exposure model. The HEM–3 performs three of the primary risk assessment activities listed above: (1) Conducting dispersion modeling to estimate the concentrations of HAP in ambient air, (2) estimating long-term and short-term inhalation exposures to individuals residing within 50 km of the modeled sources, and (3) estimating individual and population-level inhalation risks using the exposure estimates and quantitative dose-response information.

The dispersion model used by HEM–3 is AERMOD, which is one of the EPA's preferred models for assessing pollutant concentrations from industrial facilities.[14] To perform the dispersion modeling and to develop the preliminary risk estimates, HEM–3 draws on three data libraries. The first is a library of meteorological data, which is used for dispersion calculations. This library includes 1 year of hourly surface and upper air observations for 130 meteorological stations, selected to provide coverage of the United States and Puerto Rico. A second library of United States Census Bureau census block[15] internal point locations and populations provides the basis of human exposure calculations based on the year 2000 U.S. Census. In addition, for each census block, the census library includes the elevation and controlling hill height which are also used in dispersion calculations. A third library of pollutant unit risk factors and other health benchmarks is used to estimate health risks. These risk factors and health benchmarks are the latest values recommended by the EPA for HAP and other toxic air pollutants. These values are available at *http://www.epa.gov/ttn/atw/toxsource/summary.html* and are discussed in more detail later in this section.

In developing the risk assessment for chronic exposures, we used the estimated annual average ambient air concentration of each of the HAP emitted by each source for which we have emissions data in the source category. The air concentrations at each nearby census block centroid were primarily used as a surrogate for the chronic inhalation exposure concentration for all the people who reside in that census block. There were two exceptions to this. In those cases where we identified census block centroids which were located on-site, these centroids were re-assigned to a nearby residential location. In those cases where nearby census blocks were abnormally large, additional residential receptors were placed within those census blocks at observable residences to ensure an adequate representation of chronic risks to the nearby residences. We calculated the MIR for each facility as the cancer risk associated with a continuous lifetime (24 hours per day, 7 days per week and 52 weeks per year for a 70-year period) exposure to the maximum concentration at the centroid of an inhabited census block. Individual cancer risks were calculated by multiplying the estimated lifetime exposure to the ambient concentration of each of the HAP (in micrograms per cubic meter) by its URE, which is an upper bound estimate of an individual's probability of contracting cancer over a lifetime of exposure to a concentration of 1 microgram of the pollutant per cubic meter of air. In general, for residual risk assessments, we use URE values from the EPA's IRIS.[16] For carcinogenic pollutants without the EPA IRIS values, we look to other reputable sources of cancer dose-response values, often using CalEPA URE values, where available. In cases where new, scientifically credible dose-response values have been developed in a manner consistent with EPA guidelines and have undergone a peer review process similar to that used by the EPA, we may use such dose-response values in place of, or in addition to, other values, if appropriate.

In 2004, the EPA determined that the CIIT cancer dose-response value for formaldehyde (5.5×10^{-9} per $\mu g/m^3$) was based on better science than the IRIS dose-response value (1.3×10^{-5} per $\mu g/m^3$), and we switched from using the IRIS value to the CIIT value in risk assessments supporting regulatory actions. Based on subsequent published research, however, the EPA changed its determination regarding the CIIT model, and, in 2010, the EPA returned to using the 1991 IRIS value. The NAS completed its review of the EPA's draft assessment in April of 2011 (*http://www.nap.edu/catalog.php?record_id=13142*), and the EPA has been working on revising the formaldehyde assessment. The EPA will follow the NAS Report recommendations and will present results obtained by implementing the BBDR model for formaldehyde. The EPA will compare these estimates with those currently presented in the External Review draft of the assessment and will discuss their strengths and weaknesses. As recommended by the NAS committee, appropriate sensitivity and uncertainty analyses will be an integral component of implementing the BBDR model. The draft IRIS assessment will be revised in response to the NAS peer review and public comments and the final assessment will be posted on the IRIS database. In the interim, we will present findings using the 1991 IRIS value as a primary estimate and may also consider other information as the science evolves.

We note here that POM, a carcinogenic HAP with a mutagenic mode of action, is emitted by some of the facilities in this category.[17] For this compound,[18] the ADAF described in the EPA's *Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens*[19] were applied. This adjustment has the effect of increasing the estimated lifetime risks for this pollutant by a factor of 1.6. In addition, although only a small fraction

[12] *Ibid.*

[13] *Ibid.*

[14] U.S. EPA. *Revision to the Guideline on Air Quality Models: Adoption of a Preferred General Purpose (Flat and Complex Terrain) Dispersion Model and Other Revisions* (70 FR 68218, November 9, 2005).

[15] A census block is generally the smallest geographic area for which census statistics are tabulated.

[16] The IRIS information is available at *http://www.epa.gov/IRIS.*

[17] U.S. EPA, 2006. Performing risk assessments that include carcinogens described in the *Supplemental Guidance* as having a mutagenic mode of action. *Science Policy Council Cancer Guidelines Implementation Work Group Communication II:* Memo from W.H. Farland, dated June 14, 2006.

[18] See the *Risk Assessment for Source Categories* document available in the docket for a list of HAP with a mutagenic mode of action.

[19] U.S. EPA, 2005. *Supplemental Guidance for Assessing Early-Life Exposure to Carcinogens.* EPA/630/R–03/003F. *http://www.epa.gov/ttn/atw/childrens_supplement_final.pdf.*

of the total POM emissions were not reported as individual compounds, the EPA expresses carcinogenic potency for compounds in this group in terms of benzo[a]pyrene equivalence, based on evidence that carcinogenic POM has the same mutagenic mechanism of action as does benzo[a]pyrene. For this reason, the EPA's Science Policy Council [20] recommends applying the *Supplemental Guidance* to all carcinogenic polycyclic aromatic hydrocarbons for which risk estimates are based on relative potency. Accordingly, we have applied the ADAF to the benzo[a]pyrene equivalent portion of all POM mixtures.

Incremental individual lifetime cancer risks associated with emissions from the source category were estimated as the sum of the risks for each of the carcinogenic HAP (including those classified as carcinogenic to humans, likely to be carcinogenic to humans and suggestive evidence of carcinogenic potential [21]) emitted by the modeled source. Cancer incidence and the distribution of individual cancer risks for the population within 50 km of the source were also estimated for the source category as part of these assessments by summing individual risks. A distance of 50 km is consistent with both the analysis supporting the 1989 Benzene NESHAP (54 FR 38044) and the limitations of Gaussian dispersion models, including AERMOD.

To assess risk of noncancer health effects from chronic exposures, we summed the HQ for each of the HAP that affects a common target organ system to obtain the HI for that target organ system (or TOSHI). The HQ is the estimated exposure divided by the chronic reference value, which is either the EPA RfC, defined as ''an estimate (with uncertainty spanning perhaps an order of magnitude) of a continuous inhalation exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime,'' or, in cases where a RfC is not available, the ATSDR chronic MRL or the CalEPA Chronic REL. The REL is defined as ''the concentration level at or below which no adverse health effects are anticipated for a specified exposure duration.'' As noted above, in cases where new, scientifically credible dose-response values have been developed in a manner consistent with EPA guidelines and have undergone a peer review process similar to that used by the EPA, we may use those dose-response values in place of or, in addition to, other values.

Worst-case screening estimates of acute exposures and risks were also evaluated for each of the HAP at the point of highest offsite exposure for each facility (*i.e.,* not just the census block centroids) assuming that a person was located at this spot at a time when both the peak (hourly) emission rate and hourly dispersion conditions occurred. In general, acute HQ values were calculated using best available, short-term dose-response value. These acute dose-response values include REL, AEGL and ERPG for 1-hour exposure durations. As discussed below, we used conservative assumptions for emission rates, meteorology and exposure location for our acute analysis.

As described in the CalEPA's *Air Toxics Hot Spots Program Risk Assessment Guidelines, Part I, The Determination of Acute Reference Exposure Levels for Airborne Toxicants,* an acute REL value (*http://www.oehha.ca.gov/air/pdf/acuterel.pdf*) is defined as ''the concentration level at or below which no adverse health effects are anticipated for a specified exposure duration.'' Reference exposure level values are based on the most sensitive, relevant, adverse health effect reported in the medical and toxicological literature. Reference exposure level values are designed to protect the most sensitive individuals in the population by the inclusion of margins of safety. Since margins of safety are incorporated to address data gaps and uncertainties, exceeding the REL does not automatically indicate an adverse health impact.

Acute Exposure Guideline Levels were derived in response to recommendations from the NRC. As described in *Standing Operating Procedures (SOP) of the National Advisory Committee on Acute Exposure Guideline Levels for Hazardous Substances* (*http://www.epa.gov/opptintr/aegl/pubs/sop.pdf*),[22] ''the NRC's previous name for acute exposure levels—CEEL—was replaced by the term AEGL to reflect the broad application of these values to planning, response, and prevention in the community, the workplace, transportation, the military, and the remediation of Superfund sites.'' This document also states that AEGL values ''represent threshold exposure limits for the general public and are applicable to emergency exposures ranging from 10 minutes to 8 hours.'' The document lays out the purpose and objectives of AEGL by stating (page 21) that ''the primary purpose of the AEGL program and the NAC/AEGL Committee is to develop guideline levels for once-in-a-lifetime, short-term exposures to airborne concentrations of acutely toxic, high-priority chemicals.'' In detailing the intended application of AEGL values, the document states (page 31) that ''[i]t is anticipated that the AEGL values will be used for regulatory and nonregulatory purposes by United States federal and state agencies, and possibly the international community in conjunction with chemical emergency response, planning and prevention programs. More specifically, the AEGL values will be used for conducting various risk assessments to aid in the development of emergency preparedness and prevention plans, as well as real-time emergency response actions, for accidental chemical releases at fixed facilities and from transport carriers.''

The AEGL–1 value is then specifically defined as ''the airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience notable discomfort, irritation, or certain asymptomatic nonsensory effects. However, the effects are not disabling and are transient and reversible upon cessation of exposure.'' The document also notes (page 3) that, ''Airborne concentrations below AEGL–1 represent exposure levels that can produce mild and progressively increasing but transient and nondisabling odor, taste, and sensory irritation or certain asymptomatic, nonsensory effects.'' Similarly, the document defines AEGL–2 values as ''the airborne concentration (expressed as ppm or mg/m^3) of a substance above which it is predicted that the general population, including susceptible individuals, could experience irreversible or other serious, long-lasting adverse health effects or an impaired ability to escape.''

Emergency Response Planning Guidelines values are derived for use in emergency response, as described in the American Industrial Hygiene

[20] U.S. EPA, 2006. *Science Policy Council Cancer Guidelines Implementation Workgroup Communication II:* Memo from W.H. Farland, dated June 14, 2006.

[21] These classifications also coincide with the terms ''known carcinogen, probable carcinogen, and possible carcinogen,'' respectively, which are the terms advocated in the EPA's previous *Guidelines for Carcinogen Risk Assessment,* published in 1986 (51 FR 33992, September 24, 1986). Summing the risks of these individual compounds to obtain the cumulative cancer risks is an approach that was recommended by the EPA's SAB in their 2002 peer review of EPA's NATA titled, *NATA—Evaluating the National-scale Air Toxics Assessment 1996 Data—an SAB Advisory,* available at: *http://yosemite.epa.gov/sab/sabproduct.nsf/214C6E915BB04E14852570CA007A682C/$File/ecadv02001.pdf.*

[22] NAS, 2001. *Standing Operating Procedures for Developing Acute Exposure Levels for Hazardous Chemicals,* page 2.

Association's document titled, *Emergency Response Planning Guidelines (ERPG) Procedures and Responsibilities* (*http://www.aiha.org/1documents/committees/ERPSOPs2006.pdf*) which states that, ''Emergency Response Planning Guidelines were developed for emergency planning and are intended as health-based guideline concentrations for single exposures to chemicals.'' [23] The ERPG–1 value is defined as ''the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to 1 hour without experiencing other than mild transient adverse health effects or without perceiving a clearly defined, objectionable odor.'' Similarly, the ERPG–2 value is defined as ''the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to 1 hour without experiencing or developing irreversible or other serious health effects or symptoms which could impair an individual's ability to take protective action.''

As can be seen from the definitions above, the AEGL and ERPG values include the similarly-defined severity levels 1 and 2. For many chemicals, a severity level 1 value AEGL or ERPG has not been developed; in these instances, higher severity level AEGL–2 or ERPG–2 values are compared to our modeled exposure levels to screen for potential acute concerns.

Acute REL values for 1-hour exposure durations are typically lower than their corresponding AEGL–1 and ERPG–1 values. Even though their definitions are slightly different, AEGL–1 values are often the same as the corresponding ERPG–1 values, and AEGL–2 values are often equal to ERPG–2 values. Maximum HQ values from our acute screening risk assessments typically result when basing them on the acute REL value for a particular pollutant. In cases where our maximum acute HQ value exceeds 1, we also report the HQ value based on the next highest acute threshold (usually the AEGL–1 and/or the ERPG–1 value).

To develop screening estimates of acute exposures, we first developed estimates of maximum hourly emission rates by multiplying the average actual annual hourly emission rates by a factor to cover routinely variable emissions. An acute multiplication factor of 1.6 was used for papermaking equipment (*e.g.,* paper machines, stock preparation, repulping) based on a paper machine peak-to-mean analysis. Similarly, a peak-to-mean multiplier of 2 was used for pulp and paper wastewater treatment units based on analysis of data from pulp and paper primary clarifiers and aerated stabilization basins. Peak-to-mean multipliers ranging from 1 to 3.1 were developed for other types of pulp and paper equipment based on the routine annual emissions data and peak hourly emissions data obtained from Part II survey data.[24]

In cases where all acute HQ values from the screening step were less than or equal to 1, acute impacts were deemed negligible and no further analysis was performed. In the cases where an acute HQ from the screening step was greater than 1, additional site-specific data were considered to develop a more refined estimate of the potential for acute impacts of concern. The data refinements included using site-specific facility layouts, as available, to distinguish facility property from an area where the public could access and be exposed. These refinements are discussed in the draft risk assessment documents, which are available in the docket for this source category. Ideally, we would prefer to have continuous measurements over time to see how the emissions vary by each hour over an entire year. Having a frequency distribution of hourly emission rates over a year would allow us to perform a probabilistic analysis to estimate potential threshold exceedances and their frequency of occurrence. Such an evaluation could include a more complete statistical treatment of the key parameters and elements adopted in this screening analysis. However, we recognize that having this level of data is rare, and hence our use of the multiplier approach.

4. Multipathway Exposure and Risk Screening

The potential for significant human health risks due to exposures via routes other than inhalation (*i.e.,* multipathway exposures) and the potential for adverse environmental impacts were evaluated in a three-step process. In the first step, we determined whether any facilities emitted any HAP known to be persistent and bio-accumulative in the environment (PB–HAP). There are 14 PB–HAP compounds or compound classes identified for this screening in the EPA's *Air Toxics Risk Assessment Library* (available at *http://www.epa.gov/ttn/fera/risk_atra_vol1.html*). They are cadmium compounds, chlordane, chlorinated dibenzodioxins and furans, dichlorodiphenyldichloroethylene, heptachlor, hexachlorobenzene, hexachlorocyclohexane, lead compounds, mercury compounds, methoxychlor, polychlorinated biphenyls, POM, toxaphene and trifluralin. Emissions of four different PB–HAP were identified in the Part II NEI emissions dataset for the pulp and paper (subpart S) source category: cadmium compounds, lead compounds, mercury compounds and POM. These four compounds plus chlorinated dibenzodioxins and furans were identified in the NEI dataset for the entire mill, which includes sources inside and outside the subpart S category (*e.g.,* boilers, chemical recovery combustion sources). In the second step of the screening process, we determined whether the facility-specific emission rates of each of the emitted PB–HAP were large enough to create the potential for significant non-inhalation human health or environmental risks. To facilitate this step, we have developed emission rate thresholds for each PB–HAP using a hypothetical screening exposure scenario developed for use in conjunction with the TRIM.FaTE model. The hypothetical screening scenario was subjected to a sensitivity analysis to ensure that its key design parameters were established such that environmental media concentrations were not underestimated (*i.e.,* to minimize the occurrence of false negatives or results that suggest that risks might be acceptable when, in fact, actual risks are high), and to also minimize the occurrence of false positives for human health endpoints. We call this application of the TRIM.FaTE model TRIM-Screen. The facility specific emission rates of each of the PB–HAP in each source category were compared to the emission threshold values for each of the PB–HAP identified in the source category datasets.

For all of the facilities in the source category addressed in this proposal, all of the PB–HAP emission rates were less than the emission threshold values, except for one facility with POM emissions as benzo(a)pyrene that exceeded the screening emission rate by a factor of 2. For POM, exceeding the screening emission rate relates to a potential for creating a cancer risk in excess of 1 in a million. In performing the screening for potential multipathway exposures and risks of

[23] *ERP Committee Procedures and Responsibilities.* November 1, 2006. American Industrial Hygiene Association.

[24] More information supporting the use of these factors for Pulp and Paper production is presented in the memorandum, *Inputs to the Pulp and Paper Industry October 2011 Residual Risk Modeling,* which is available in the docket for this action.

concern, we determined that emissions of POM were not significant enough to pose multipathway impacts of concern for human health or the environment. If the emission rates of the PB–HAP had been determined to be significant, the source category would have been further evaluated for potential non-inhalation risks and adverse environmental effects in a third step through site-specific refined assessments using the EPA's TRIM.FaTE model.

For further information on the multipathway analysis approach, see the residual risk documentation as referenced in section IV.A of this preamble.

5. Assessing Risks Considering Emissions Control Options

This rulemaking does not require the installation of any new emission controls to reduce risk; therefore, no risk modeling was conducted to estimate risk reductions following installation of emission controls for this proposal.

6. Conducting Facilitywide Risk Assessments

To put the source category risks in context, we also examine the risks from the entire ''facility,'' where the facility includes all HAP-emitting operations within a contiguous area and under common control. In other words, we examine the HAP emissions not only from the source category of interest but also emissions of HAP from all other emissions sources at the facility. Nearly all 171 major sources in the subpart S category include boilers, and 111 of the 171 major sources include chemical recovery combustion sources (*e.g.,* recovery furnace, smelt dissolving tank, lime kiln). Pulp and paper mills also include paper coating, landfills, petroleum storage and transfer and other operations. Therefore, where data were available, we performed a facilitywide risk assessment for these major sources as part of today's action.

We estimated the risks due to the inhalation of HAP that are emitted ''facilitywide'' for the populations residing within 50 km of each facility, consistent with the methods used for the source category analysis described above. For these facilitywide risk analyses, the modeled source category risks were compared to the facilitywide risks to determine the portion of facilitywide risks that could be attributed to the source categories addressed in this proposal. We specifically examined the facilities associated with the highest estimates of risk and determined the percentage of that risk attributable to the source category of interest. The risk documentation available through the docket for this action provides all the facilitywide risks and the percentage of source category contribution for all source categories assessed.

The methodology and the results of the facilitywide analyses for each source category are included in the residual risk documentation as referenced in section IV.A of this preamble, which is available in the docket for this action.

7. Considering Uncertainties in Risk Assessment

Uncertainty and the potential for bias are inherent in all risk assessments, including that performed for the source category addressed in this proposal. Although uncertainty exists, we believe the approach that we took, which used conservative tools and assumptions to bridge data gaps, ensures that our decisions are health-protective. A brief discussion of the uncertainties in the emissions dataset, dispersion modeling, inhalation exposure estimates and dose-response relationships follows below.[25]

a. Uncertainties in the Emissions Dataset

Although the development of the RTR dataset involved QA/QC processes, the accuracy of emissions values will vary depending on: (1) The source of the data, (2) the degree to which data are incomplete or missing, (3) the degree to which assumptions made to complete the datasets are accurate, (4) whether and to what extent errors were made in estimating emissions values, (5) whether the emissions were based on or extrapolated from stack tests or estimates of fugitive emissions, and (6) miscellaneous other factors.

The annual HAP emissions estimates used in the risk assessment are derived from data provided by mills in response to the Part II survey. Many of these emissions estimates are based on emission factors, developed from the most comprehensive dataset available for this industry, provided by NCASI. The uncertainties associated with emission factors include the uncertainties in the measurement of the data, limitations in the size and quality of the dataset, the presence of non-detects and outliers in the dataset, the emission factor calculations used, *etc.* As noted in section III.A.1 of this preamble, acrolein emissions were not modeled due to uncertainties in the emissions estimates.[26]

b. Uncertainties in Dispersion Modeling

Although the analysis employed the EPA's recommended regulatory dispersion model, AERMOD, we recognize that there is uncertainty in ambient concentration estimates associated with any model, including AERMOD. In circumstances where we had to choose between various model options, where possible, we selected model options (*e.g.,* rural/urban, plume depletion, chemistry) that provided an overestimate of ambient concentrations of the HAP rather than an underestimate. However, because of practicality and data limitation reasons, some factors (*e.g.,* building downwash) have the potential in some situations to overestimate or underestimate ambient impacts. Despite these uncertainties, we believe that at offsite locations and census block centroids, the approach considered in the dispersion modeling analysis should generally yield overestimates of ambient HAP concentrations.

c. Uncertainties in Inhalation Exposure

The effects of human mobility on exposures were not included in the assessment. Specifically, short-term mobility and long-term mobility between census blocks in the modeling domain were not considered.[27] The assumption of not considering short- or long-term population mobility does not bias the estimate of the theoretical MIR, nor does it affect the estimate of cancer incidence since the total population number remains the same. It does, however, affect the shape of the distribution of individual risks across the affected population, shifting it toward higher estimated individual risks at the upper end and reducing the number of people estimated to be at lower risks, thereby increasing the estimated number of people at specific risk levels.

In addition, the assessment predicted the chronic exposures at the centroid of each populated census block as surrogates for the exposure concentrations for all people living in that block. Using the census block centroid to predict chronic exposures tends to over-predict exposures for people in the census block who live

[25] A more thorough discussion of these uncertainties is included in the risk assessment documentation (*Draft Residual Risk Assessment for the Pulp and Paper Category*) available in the docket for this action.

[26] For more information, see the memorandum in the docket titled, *Inputs to the Pulp and Paper Industry October 2011 Residual Risk Modeling.*

[27] Short-term mobility is movement from one microenvironment to another over the course of hours or days. Long-term mobility is movement from one residence to another over the course of a lifetime.

farther from the facility and under-predict exposures for people in the census block who live closer to the facility. Thus, using the census block centroid to predict chronic exposures may lead to a potential understatement or overstatement of the true maximum impact for any one individual but is an unbiased estimate of average risk and incidence.

The assessments evaluate the projected cancer inhalation risks associated with pollutant exposures over a 70-year period, which is the assumed lifetime of an individual. In reality, both the length of time that modeled emissions sources at facilities actually operate (*i.e.,* more or less than 70 years), and the domestic growth or decline of the modeled industry (*i.e.,* the increase or decrease in the number or size of United States facilities), will influence the future risks posed by a given source or source category. Depending on the characteristics of the industry, these factors will, in most cases, result in an overestimate both in individual risk levels and in the total estimated number of cancer cases. However, in rare cases, where a facility maintains or increases its emissions levels beyond 70 years, residents live beyond 70 years at the same location and the residents spend most of their days at that location, then the risks could potentially be underestimated. Annual cancer incidence estimates from exposures to emissions from these sources would not be affected by uncertainty in the length of time emissions sources operate.

The exposure estimates used in these analyses assume chronic exposures to ambient levels of pollutants. Because most people spend the majority of their time indoors, actual exposures may not be as high, depending on the characteristics of the pollutants modeled. For many of the HAP, indoor levels are roughly equivalent to ambient levels, but for very reactive pollutants or larger particles, these levels are typically lower. This factor has the potential to result in an overstatement of 25 to 30 percent of exposures for some HAP.[28]

In addition to the uncertainties highlighted above, there are several factors specific to the acute exposure assessment that should be highlighted. The accuracy of an acute inhalation exposure assessment depends on the simultaneous occurrence of independent factors that may vary greatly, such as hourly emissions rates, meteorology and human activity patterns. In this assessment, we assume that individuals remain for 1 hour at the point of maximum ambient concentration as determined by the co-occurrence of peak emissions and worst-case meteorological conditions. These assumptions would tend to be worst-case actual exposures since it is unlikely that a person would be located at the point of maximum exposure during the time of worst-case impact.

d. Uncertainties in Dose-Response Relationships

There are uncertainties inherent in the development of the dose-response values used in our risk assessments for cancer effects from chronic exposures and noncancer effects from both chronic and acute exposures. Some uncertainties may be considered quantitatively, and others generally are expressed in qualitative terms. We note as a preface to this discussion a point on dose-response uncertainty that is brought out in the EPA's *2005 Cancer Guidelines;* namely, that ''the primary goal of EPA actions is protection of human health; accordingly, as an agency policy, risk assessment procedures, including default options that are used in the absence of scientific data to the contrary, should be health protective'' (*EPA 2005 Cancer Guidelines,* pages 1–7). This is the approach followed here as summarized in the next several paragraphs. A complete detailed discussion of uncertainties and variability in dose-response relationships is given in the residual risk documentation which is available in the docket for this action.

Cancer URE values used in our risk assessments are those that have been developed to generally provide an upper bound estimate of risk. That is, they represent a ''plausible upper limit to the true value of a quantity'' (although this is usually not a true statistical confidence limit).[29] In some circumstances, the true risk could be as low as zero; however, in other circumstances the risk could be greater.[30] When developing an upper bound estimate of risk and to provide risk values that do not underestimate risk, health-protective default approaches are generally used. To err on the side of ensuring adequate health protection, the EPA typically uses the upper bound estimates rather than lower bound or central tendency estimates in our risk assessments, an approach that may have limitations for other uses (*e.g.,* priority-setting or expected benefits analysis).

Chronic noncancer reference (RfC and RfD) values represent chronic exposure levels that are intended to be health-protective levels. Specifically, these values provide an estimate (with uncertainty spanning perhaps an order of magnitude) of a continuous inhalation exposure (RfC) or a daily oral exposure (RfD) to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime. To derive values that are intended to be ''without appreciable risk,'' the methodology relies upon an UF approach (EPA 1993, 1994) which considers uncertainty, variability and gaps in the available data. The UF are applied to derive reference values that are intended to protect against appreciable risk of deleterious effects. The UF are commonly default values,[31] *e.g.,* factors of 10 or 3, used in the absence of compound-specific data; where data are available, UF may also be developed using compound-specific information. When data are limited, more assumptions are needed and more UF are used. Thus, there may be a greater tendency to overestimate risk in the sense that further study might support development of reference values that are higher (*i.e.,* less potent) because fewer default assumptions are needed. However, for some pollutants, it is possible that risks may be underestimated. While collectively termed ''UF,'' these factors account for a number of different quantitative considerations when using observed animal (usually rodent) or human toxicity data in the development of the RfC. The UF are intended to account for:

[28] U.S. EPA. *National-Scale Air Toxics Assessment for 1996.* EPA 453/R–01–003; January 2001; page 85.

[29] IRIS glossary (*http://www.epa.gov/NCEA/iris/help_gloss.htm*).

[30] An exception to this is the URE for benzene, which is considered to cover a range of values, each end of which is considered to be equally plausible and which is based on maximum likelihood estimates.

[31] According to the NRC report, *Science and Judgment in Risk Assessment* (NRC, 1994) ''[Default] options are generic approaches, based on general scientific knowledge and policy judgment, that are applied to various elements of the risk assessment process when the correct scientific model is unknown or uncertain.'' The 1983 NRC report, *Risk Assessment in the Federal Government: Managing the Process,* defined default option as ''the option chosen on the basis of risk assessment policy that appears to be the best choice in the absence of data to the contrary'' (NRC, 1983a, p. 63). Therefore, default options are not rules that bind the agency; rather, the agency may depart from them in evaluating the risks posed by a specific substance when it believes this to be appropriate. In keeping with the EPA's goal of protecting public health and the environment, default assumptions are used to ensure that risk to chemicals is not underestimated (although defaults are not intended to overtly overestimate risk). See EPA, 2004, *An Examination of EPA Risk Assessment Principles and Practices,* EPA/100/B–04/001 available at: *http://www.epa.gov/osa/pdfs/ratf-final.pdf.*

(1) Variation in susceptibility among the members of the human population (*i.e.,* inter-individual variability); (2) uncertainty in extrapolating from experimental animal data to humans (*i.e.,* interspecies differences); (3) uncertainty in extrapolating from data obtained in a study with less-than-lifetime exposure (*i.e.,* extrapolating from sub-chronic to chronic exposure); (4) uncertainty in extrapolating the observed data to obtain an estimate of the exposure associated with no adverse effects; and (5) uncertainty when the database is incomplete or there are problems with the applicability of available studies. Many of the UF used to account for variability and uncertainty in the development of acute reference values are quite similar to those developed for chronic durations, but they more often use individual UF values that may be less than 10. Uncertainty factors are applied based on chemical-specific or health effect-specific information (*e.g.,* simple irritation effects do not vary appreciably between human individuals, hence a value of 3 is typically used), or based on the purpose for the reference value (see the following paragraph). The UF applied in acute reference value derivation include: (1) Heterogeneity among humans; (2) uncertainty in extrapolating from animals to humans; (3) uncertainty in lowest observed adverse effect (exposure) level to no observed adverse effect (exposure) level adjustments; and (4) uncertainty in accounting for an incomplete database on toxic effects of potential concern. Additional adjustments are often applied to account for uncertainty in extrapolation from observations at one exposure duration (*e.g.,* 4 hours) to derive an acute reference value at another exposure duration (*e.g.,* 1 hour).

Not all acute reference values are developed for the same purpose, and care must be taken when interpreting the results of an acute assessment of human health effects relative to the reference value or values being exceeded. Where relevant to the estimated exposures, the lack of short-term dose-response values at different levels of severity should be factored into the risk characterization as potential uncertainties.

Although every effort is made to identify peer-reviewed reference values for cancer and noncancer effects for all pollutants emitted by the sources included in this assessment, some HAP continue to have no reference values for cancer or chronic noncancer or acute effects. Since exposures to these pollutants cannot be included in a quantitative risk estimate, an understatement of risk for these pollutants at environmental exposure levels is possible. For a group of compounds that are either unspeciated or do not have reference values for every individual compound (*e.g.,* glycol ethers), we conservatively use the most protective reference value to estimate risk from individual compounds in the group of compounds.

Additionally, chronic reference values for several of the compounds included in this assessment are currently under the EPA IRIS review (*e.g.,* formaldehyde), and revised assessments may determine that these pollutants are more or less potent than the current value. We may re-evaluate residual risks for the final rulemaking if these reviews are completed prior to our taking final action for this source category and if a dose-response metric changes enough to indicate that the risk assessment supporting this notice may significantly understate human health risk.

e. Uncertainties in the Multipathway and Environmental Effects Screening

We generally assume that when exposure levels are not anticipated to adversely affect human health, they also are not anticipated to adversely affect the environment. For each source category, we generally rely on the site-specific levels of PB–HAP emissions to determine whether a full assessment of the multipathway and environmental effects is necessary. Our screening methods use worst-case scenarios to determine whether multipathway impacts might be important. The results of such a process are biased high for the purpose of screening out potential impacts. Thus, when individual pollutants or facilities screen out, we are confident that the potential for multipathway impacts is negligible. On the other hand, when individual pollutants or facilities do not screen out, it does not mean that multipollutant impacts are significant, only that we cannot rule out that possibility. The site-specific PB–HAP emission levels were almost all far below levels which would trigger a refined assessment of multipathway impacts. The only PB–HAP to exceed the screening threshold was POM with emissions exceeding the screening threshold by a factor of 2. Thus, we are confident that these types of impacts are insignificant for the facilities in this source category.

B. How did we consider the risk results in making decisions for this proposal?

As discussed in the previous section of this preamble, we apply a two-step process for determining whether to develop standards to address residual risk. In the first step, the EPA determines whether risks are acceptable. This determination ''considers all health information, including risk estimation uncertainty, and includes a presumptive level on maximum individual lifetime [cancer] risk (MIR) [32] of approximately one in 10 thousand [*i.e.,* 100 in 1 million].'' 54 FR 38045. In the second step of the process, the EPA determines what level of the standard is needed to provide an ample margin of safety ''in consideration of all health information, including the number of persons at risk levels higher than approximately one in one million, as well as other relevant factors, including costs and economic impacts, technological feasibility, and other factors relevant to each particular decision.'' *Id.*

In past residual risk actions, the EPA presented and considered a number of human health risk metrics associated with emissions from the category under review, including: the MIR; the numbers of persons in various risk ranges; cancer incidence; the maximum noncancer HI; and the maximum acute noncancer hazard. See, *e.g.,* 75 FR 65068, 65072–74 (October 21, 2010) and 76 FR 22566, 22575 (April 21, 2011). In estimating risks, the EPA considered sources under review that are located near each other and that affect the same population. The EPA developed risk estimates based on the actual emissions from the source category under review as well as based on the maximum emissions allowed pursuant to the source category MACT standards. The EPA also discussed and considered risk estimation uncertainties. The EPA is providing this same type of information in support of this action.

The agency is considering all available health information to inform our determinations of risk acceptability and ample margin of safety under CAA section 112(f). Specifically, as explained in the Benzene NESHAP, ''the first step judgment on acceptability cannot be reduced to any single factor'' and thus ''[t]he Administrator believes that the acceptability of risk under [previous] section 112 is best judged on the basis of a broad set of health risk measures and information'' (54 FR 38046). Similarly, with regard to making the ample margin of safety determination, as stated in the Benzene NESHAP, ''[in the ample margin decision, the agency again considers all of the health risk and other health information considered in the first step. Beyond that information,

[32] Although defined as ''maximum individual risk,'' MIR refers only to cancer risk. MIR, one metric for assessing cancer risk, is the estimated risk were an individual exposed to the maximum level of a pollutant for a lifetime.

additional factors relating to the appropriate level of control will also be considered, including cost and economic impacts of controls, technological feasibility, uncertainties, and any other relevant factors.'' *Id.*

The agency acknowledges that the Benzene NESHAP provides flexibility regarding what factors the EPA might consider in making determinations and how they might be weighed for each source category. In responding to comment on our policy under the Benzene NESHAP, the EPA explained that: ''The policy chosen by the Administrator permits consideration of multiple measures of health risk. Not only can the MIR figure be considered, but also incidence, the presence of noncancer health effects, and the uncertainties of the risk estimates. In this way, the effect on the most exposed individuals can be reviewed as well as the impact on the general public. These factors can then be weighed in each individual case. This approach complies with the Vinyl Chloride mandate that the Administrator ascertain an acceptable level of risk to the public by employing [her] expertise to assess available data. It also complies with the Congressional intent behind the CAA, which did not exclude the use of any particular measure of public health risk from the EPA's consideration with respect to CAA section 112 regulations, and, thereby, implicitly permits consideration of any and all measures of health risk which the Administrator, in [her] judgment, believes are appropriate to determining what will 'protect the public health.''' (54 FR at 38057).

Thus, the level of the MIR is only one factor to be weighed in determining acceptability of risks. The Benzene NESHAP explained that ''an MIR of approximately 1 in 10 thousand should ordinarily be the upper end of the range of acceptability. As risks increase above this benchmark, they become presumptively less acceptable under CAA section 112, and would be weighed with the other health risk measures and information in making an overall judgment on acceptability. Or, the agency may find, in a particular case, that a risk that includes MIR less than the presumptively acceptable level is unacceptable in the light of other health risk factors'' (*Id.* at 38045). Similarly, with regard to the ample margin of safety analysis, the EPA stated in the Benzene NESHAP that: ''* * * EPA believes the relative weight of the many factors that can be considered in selecting an ample margin of safety can only be determined for each specific source category. This occurs mainly because technological and economic factors (along with the health-related factors) vary from source category to source category'' (*Id.* at 38061).

C. How did we perform the technology review?

Our technology review focused on the identification and evaluation of developments in practices, processes and control technologies that have occurred since the 1998 NESHAP was promulgated. In cases where the technology review identified such developments, we conducted an analysis of the technical feasibility of applying these developments, along with the estimated impacts (costs, emissions reductions, risk reductions, *etc.*) of applying these developments. We then made decisions on whether it is necessary and appropriate to propose amendments to the regulation to require any of the identified developments.

Based on specific knowledge of the source category, we began by identifying known developments in practices, processes and control technologies. For the purpose of this exercise, we considered any of the following to be a ''development'':

- Any add-on control technology or other equipment that was not identified and considered during development of the 1998 NESHAP;
- Any improvements in add-on control technology or other equipment (that were identified and considered during development of the 1998 NESHAP) that could result in significant additional emissions reductions;
- Any work practice or operational procedure that was not identified or considered during development of the 1998 NESHAP; and
- Any process change or pollution prevention alternative that could be broadly applied to the industry and that was not identified or considered during development of the 1998 NESHAP.

In addition to reviewing the practices, processes or control technologies that were not considered at the time we developed the 1998 NESHAP, we reviewed a variety of data sources in our evaluation of whether there were additional practices, processes or controls to consider for the pulp and paper industry. To aid in our evaluation of whether there were additional practices, processes or controls to consider, one of these sources of data was subsequent air toxics rules. Since the promulgation of the MACT standards for the source category addressed in this proposal, the EPA has developed air toxics regulations for a number of additional source categories. In these subsequent air toxic regulatory actions, we consistently evaluated any new practices, processes and control technologies. We reviewed the regulatory requirements and/or technical analyses associated with these subsequent regulatory actions to identify any practices, processes and control technologies considered in these efforts that could possibly be applied to emission sources in the source category under this current RTR review.

We also consulted the EPA's RBLC to identify potential technology advances.[33] Control technologies, classified as RACT, BACT or LAER apply to stationary sources depending on whether the sources are existing or new, and on the size, age and location of the facility. Best available control technology and LAER (and sometimes RACT) are determined on a case-by-case basis, usually by state or local permitting agencies. The EPA established the RBLC to provide a central database of air pollution technology information (including technologies required in source-specific permits) to promote the sharing of information among permitting agencies and to aid in identifying future possible control technology options that might apply broadly to numerous sources within a category or apply only on a source-by-source basis. The RBLC contains over 5,000 air pollution control permit determinations that can help identify appropriate technologies to mitigate many air pollutant emission streams. We searched this database to determine whether it contained any practices, processes or control technologies for the types of processes covered by the pulp and paper source category. We also further analyzed a number of BACT determinations listed in the RBLC to obtain further information.

Additionally, we conducted a general search of the Internet and other sources for information on control technologies applicable to pulp and paper production. Finally, we conducted a search of the database containing the responses received from the Part I survey to obtain information on process and emission controls currently in use in pulp and paper production.

Each of the evaluations listed above considered and reviewed the technologies suitable to demonstrate compliance with the requirements listed in §§ 63.440 through 63.449 (subpart S).[34]

[33] See the memorandum in the docket titled, *Summary of RBLC and Other Findings to Support Section 112(d)(6) Technology Review for Pulp and Paper NESHAP.*

[34] See the memoranda titled, *Section 112(d)(6) Technology Review for Pulping and Papermaking*

Continued

D. What other issues are we addressing in this proposal?

In addition to the analyses described above, we also reviewed other aspects of the MACT standards for possible revision as appropriate and necessary. Based on this review, we have identified aspects of the MACT standards that we believe need revision.

This includes proposing revisions to the SSM provisions of the MACT rule in order to ensure that they are consistent with the court decision in *Sierra Club* v. *EPA,* 551 F. 3d 1019 (DC Cir. 2008). In addition, we are proposing various changes based on our review of the rule for testing and monitoring sufficiency, including a requirement for 5-year repeat air emissions testing for selected equipment and additional test methods for measuring methanol. We are also proposing minor changes with regards to editorial errors. The analyses and proposed decisions for these actions are presented in section IV of this preamble.

IV. Analytical Results and Proposed Decisions

This section of the preamble provides the results of our RTR for the pulp and paper source category and our proposed decisions concerning changes to the 1998 NESHAP.

A. What are the results of the risk assessments?

For the pulp and paper source category, we conducted an inhalation risk assessment based upon actual and allowable emissions for all HAP emitted, as well as a multipathway analysis. This assessment also included a whole-facility analysis to estimate inhalation risks from all source categories for the pulp and paper industry.

1. Inhalation Risk Assessment Results

Table 3 provides an overall summary of the results of the inhalation risk assessment from the 171 modeled mills subject to this source category. We also conducted an assessment of facilitywide risk. Details of the risk assessments and analyses can be found in the residual risk documentation referenced in section IV.A of this preamble, which is available in the docket for this action.

TABLE 3—PULP AND PAPER PRODUCTION INHALATION RISK ASSESSMENT RESULTS [1]

Maximum individual cancer risk (in 1 million) [2]		Estimated population at increased risk of cancer ≥ 1 in 1 Million	Estimated annual cancer incidence (cases per year)	Maximum chronic noncancer TOSHI [3]		Worst-case maximum refined screening acute noncancer HQ [4]
Based on actual emissions level	Based on allowable emissions level			Based on actual emissions level	Based on allowable emissions level	
10	10	76,000	0.01	0.4	0.6	HQ_{REL} = 20 HQ_{ERPG-1} = 0.4 (acetaldehyde) HQ_{REL} = 6. HQ_{ERPG-1} = 0.004 (chloroform). HQ_{REL} = 5. HQ_{AEGL-1} = 0.2 (formaldehyde) HQ_{REL} = 2. HQ_{ERPG-1} = 0.2 (methanol)

[1] As noted in section III.A.1 of this preamble, acrolein emissions were not modeled due to uncertainties in the emissions estimates.
[2] Estimated maximum individual excess lifetime cancer risk due to HAP emissions from the source category.
[3] Maximum TOSHI. The target organ with the highest TOSHI for the pulp and paper source category is the respiratory system.
[4] See section III.B of this preamble for explanation of acute dose-response values.

As shown in Table 3, the results of the inhalation risk assessment performed using actual emissions data indicate the maximum lifetime individual cancer risk could be up to 10 in 1 million, primarily due to hexachloroethane emissions; the maximum chronic noncancer TOSHI value could be up to 0.4, primarily due to acetaldehyde emissions; and the maximum offsite worst-case acute HQ value could be up to 20, based on the REL value for acetaldehyde. The HQ of 20 represents an upper-bound risk estimate and is located in an uninhabited location with limited public access or an offsite area that is owned by the facility. An acute noncancer HQ of 3 reflects the risk where people are living with access to a public road. This would then result in the next highest HQ of 6 for this source category based on the acute REL dose-response value for chloroform. One hundred sixty-two of the 171 facilities in this source category had an estimated worst-case HQ less than or equal to 1; the remaining 9 facilities had an estimated worst-case HQ less than or equal to 6.[35]

To better characterize the potential health risks associated with estimated worst-case acute exposures to HAP, and in response to a key recommendation from the SAB's peer review of EPA's RTR risk assessment methodologies,[36] we examine a wider range of available acute health metrics than we do for our chronic risk assessments. This is in response to the acknowledgement that there are generally more data gaps and inconsistencies in acute reference values than there are in chronic reference values. By definition, the acute CalEPA REL represents a health-protective level of exposure, with no risk anticipated below those levels, even for repeated exposures; however, the health risk from higher-level exposures is unknown. Therefore, when a CalEPA REL is exceeded and an AEGL–1 or ERPG–1 level is available (*i.e.,* levels at which mild effects are anticipated in the general public for a single exposure), we have used them as a second comparative measure. Historically, comparisons of the estimated maximum offsite 1-hour exposure levels have not been typically made to occupational levels for the purpose of characterizing public health risks in RTR assessments. This is because occupational ceiling values are not generally considered protective for the general public since they are

Processes and *Summary of Pulp Bleaching Technology Review,* in the docket for this rulemaking.

[35] The acute refined HQ values for this source category can be found in Appendix 6, Table 1 of the Risk Assessment report. A summary of the refined acute 1-hour HQ values that were greater than 1 for this source category are as follows: 20,6,5,5,4,3,2,2,2,2,2.

[36] The SAB peer review of RTR Risk Assessment Methodologies is available at: *http://yosemite.epa.gov/sab/sabproduct.nsf/4AB3966E263D943A8525771F00668381/$File/EPA-SAB-10-007-unsigned.pdf.*

designed to protect the worker population (presumed healthy adults) for short-duration (less than 15-minute) increases in exposure.[37] As a result, for most chemicals, the 15-minute occupational ceiling values are set at levels higher than a 1-hour AEGL–1, making comparisons to them irrelevant unless the AEGL–1 or ERPG–1 levels are exceeded. Such is not the case when comparing the available acute inhalation health effect reference values for formaldehyde.

The worst-case maximum estimated 1-hour exposure to formaldehyde outside the facility fence line for the pulp and paper source category is 0.25 mg/m^3. This estimated worst-case exposure exceeds the 1-hour REL by a factor of 5 (HQ_{REL}=5) and is below the 1-hour AEGL–1 (HQ_{AEGL-1}=0.2). This exposure estimate is below the AEGL–1, and exceeds the workplace ceiling level guideline for the formaldehyde value developed by NIOSH[38] ''for any 15 minute period in a work day'' (NIOSH REL-ceiling value of 0.12 mg/m^3; HQ_{NIOSH}=2). The estimate is at the value developed by the ACGIH[39] as ''not to be exceeded at any time'' (ACGIH TLV-ceiling value of 0.37 mg/m^3; HQ_{ACGIH}=1). Additionally, the estimated maximum acute exposure exceeds the Air Quality Guideline value that was developed by the World Health Organization[40] for 30-minute exposures (0.1 mg/m^3; HQ_{WHO}=2.5).

All other HAP and facilities modeled had worst-case acute HQ values less than 1, indicating that they carry no potential to pose acute concerns. The maximum HQ based on an ERPG–1 dose-response value is 0.4 for acetaldehyde. In characterizing the potential for acute noncancer impacts of concern, it is important to remember the upward bias of these exposure estimates (*e.g.,* worst-case meteorology coinciding with a person located at the point of maximum concentration during the hour) and to consider the results along with the uncertainties related to the emissions estimates and the screening methodology. However, it is acknowledged that the acute emission multipliers ranged from 1.4 to 3 and approached the annual hourly average emission rate for the facilities within the source category.

The total estimated cancer incidence from these facilities based on actual emissions levels is 0.01 excess cancer cases per year, or 1 case in every 100 years. The cancer incidence is primarily driven by emissions of acetaldehyde and formaldehyde from papermaking and kraft wastewater operations.[41]

There are 68 facilities with maximum individual cancer risks of 1 in 1 million or greater and two facilities with maximum individual cancer risks of 10 in a million that represented the highest cancer risks for the source category. The MIR of 10 in a million for the source category was driven by emissions of hexachloroethane.

As explained above, our analysis of potential differences between actual emissions levels and emissions allowable under the pulp and paper MACT standards indicate that MACT-allowable emission levels are roughly equal to the actual emission levels.[42] The risk results from the inhalation risk assessment indicate the maximum lifetime individual cancer risks are the same at 20 in a million, and the maximum chronic noncancer TOSHI value could be up to 0.6 at the MACT-allowable emissions level.

2. Multipathway Risk Screening Results

The results of a multipathway screening analysis showed that emissions of POM, cadmium and mercury were almost all below their respective screening emission rates, thereby indicating a negligible risk of adverse health effects associated with multipathway exposures. The only PB–HAP to exceed the screening threshold was POM, with emissions exceeding the screening threshold by a factor of 2.

3. Facilitywide Risk Assessment Results

A facilitywide risk analysis was also conducted based on actual emissions levels. Table 4 displays the results of the facilitywide risk assessment.[43]

TABLE 4—PULP AND PAPER FACILITYWIDE RISK ASSESSMENT RESULTS

Number of facilities analyzed	171
Cancer Risk:	
Estimated maximum facilitywide individual cancer risk (in 1 million)	30
Number of facilities with estimated facilitywide individual cancer risk of 10 in 1 million or more	7
Number of pulp and papermaking operations contributing 50 percent or more to facilitywide individual cancer risk of 10 in 1 million or more	2
Number of facilities with facilitywide individual cancer risk of 1 in 1 million or more	99
Number of pulp and papermaking operations contributing 50 percent or more to facilitywide individual cancer risk of 1 in 1 million or more	57
Chronic Noncancer Risk:	
Maximum facilitywide chronic noncancer TOSHI	2
Number of facilities with facilitywide maximum noncancer TOSHI of 1 or more	4
Number of pulp and papermaking operations contributing 50 percent or more to facilitywide maximum noncancer TOSHI of 1 or more	0

[37] U.S. EPA. (2009) Chapter 2.9 Chemical Specific Reference Values for Formaldehyde in Graphical Arrays of Chemical-Specific Health Effect Reference Values for Inhalation Exposures (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R–09/061, and available on-line at *http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=211003.*

[38] National Institutes for Occupational Safety and Health (NIOSH). Occupational Safety and Health Guideline for Formaldehyde; *http://www.cdc.gov/niosh/docs/81-123/pdfs/0293.pdf.*

[39] ACGIH (2001) Formaldehyde. In Documentation of the TLVs® and BEIs® with Other Worldwide Occupational Exposure Values. ACGIH, 1300 Kemper Meadow Drive, Cincinnati, OH 45240 (ISBN: 978–1–882417–74–2) and available on-line at *http://www.acgih.org.*

[40] WHO (2000). Chapter 5.8 Formaldehyde, in Air Quality Guidelines for Europe, second edition. World Health Organization Regional Publications, European Series, No. 91. Copenhagen, Denmark. Available on-line at *http://www.euro.who.int/_data/assets/pdf_file/0005/74732/E71922.pdf.*

[41] We note that the MIR for this source category would not change if the CIIT URE for formaldehyde had been used in the assessment; however, the total cancer incidence would decrease by about 36 percent. There is an ongoing IRIS reassessment for formaldehyde and future RTR risk assessments will use the cancer potency for formaldehyde that results from that reassessment. As a result, the current results many not match those of future assessments.

[42] For more information, see the memorandum in the docket titled Inputs to the Pulp and Paper Industry October 2011 Residual Risk Modeling.

[43] For detailed facilityspecific results, see Appendix 6 of the *Draft Residual Risk Assessment for Pulp and Paper* in the docket for this rulemaking.

The maximum individual cancer whole-facility risk from all HAP emissions at any mill is estimated to be 30 in 1 million based on actual emissions. Of the 171 mills included in this analysis, seven have facilitywide maximum individual cancer risks of 10 in 1 million or greater. At these mills, pulp and papermaking operations account for 30 percent of the total facilitywide risk. There are 99 facilities with facilitywide maximum individual cancer risks of 1 in 1 million or greater. Of these 99 mills, 57 have pulp and papermaking operations that contribute greater than 50 percent to the facilitywide risks. The facilitywide cancer risks at these 57 mills, and at the 7 mills with risks of 10 in a million or more, are primarily driven by emissions of arsenic compounds, chromium compounds and nickel compounds from boiler and lime kiln operations. However, we note that there are uncertainties in the amount and form of chromium emitted from these mills. For many of the mills, the emissions inventory used for the risk assessment included estimates for the two main forms of chromium (*i.e.,* hexavalent and trivalent chromium). However, for other mills, we only had estimates of total chromium emitted. For those mills, we applied a hexavalent chromium speciation factor assigned by SCC for this source category.[44] Although, hexavalent chromium is toxic and is a known human carcinogen, trivalent chromium is less toxic and is currently ''not classified as to its human carcinogenicity.''[45] Therefore, the relative emissions of these two forms can have a significant effect on the cancer risk estimates.

The facilitywide maximum individual chronic noncancer TOSHI is estimated to be 2 based on actual emissions. Of the 171 mills included in this analysis, only four mills have a HI value greater than 1, with all mills having an HI value less than or equal to 2. The chronic noncancer risks at these mills are primarily driven by acrolein emissions from industrial boilers and antimony emissions from smelt dissolving tank kraft process units, which are not regulated under the Pulp and paper source category.

[44] See the memorandum in the docket titled, *Inputs to the Pulp and Paper Industry October 2011 Residual Risk Modeling.*

[45] EPA's IRIS Weight-of-Evidence Characterization for trivalent chromium *http://www.epa.gov/iris/subst/0028.htm#refinhal.*

B. What are our proposed decisions regarding risk acceptability and ample margin of safety?

1. Risk Acceptability

As noted in section III.B of this preamble, we weigh all health risk factors and measures in our risk acceptability determination, including the MIR; the number of persons in various cancer and noncancer risk ranges; cancer incidence; the maximum noncancer HI; the maximum acute noncancer HQ; the extent of noncancer risks; the potential for adverse environmental effects; distribution of cancer and noncancer risks in the exposed population; and risk estimation uncertainty (54 FR 38044, September 14, 1989).

For the pulp and paper source category, the risk analysis we performed indicates that the cancer risks to the individual most exposed could be up to 10 in 1 million due to actual or MACT-allowable emissions. These risks are considerably less than 100 in 1 million, which is the presumptive upper limit of risk acceptability. The risk analysis also shows generally low cancer incidence (1 case every 100 years); no potential for adverse environmental effects or human health multipathway effects; no potential for chronic noncancer impacts; and, while a potential exists for some acute inhalation impacts, they are likely to be minimal.

Additional analysis of facilitywide risks showed that there are five mills with maximum facilitywide risks in between a cancer risk of 10 in 1 million and 30 in a million and four mills with a maximum chronic noncancer TOSHI between 1 and 2; it also showed that the pulp and paper source category did not drive these risks. The number of people exposed to cancer risks of 1 in 1 million or greater due to emissions from the source category is relatively low (76,000). Considering these factors and the uncertainties discussed in section III.B of this preamble, we propose that the risks from the Pulp and paper source category are acceptable.

2. Ample Margin of Safety

Under the ample margin of safety analysis, we evaluate the cost and feasibility of available control technologies and other measures (including the controls, measures and costs reviewed under the technology review) that could be applied in this source category to further reduce the risks due to emissions of HAP identified in our risk assessment.

As noted in our discussion of the technology review below in section IV.C, no technologies (beyond those already in place) were identified for reducing HAP emissions from pulp and paper production processes.[46] We are proposing to amend the kraft condensate standards to reflect increased performance of existing controls observed in the technology review, resulting in an estimated HAP reduction of approximately 4,000 tpy. Incrementally increasing the stringency of the kraft condensate standards is expected to reduce risks from kraft wastewater operations. As a result, we conclude that the current standard, before the amendments proposed here are put in place, protects public health with an ample margin of safety.

Though we did not identify any new technologies to reduce risk from this source category beyond incremental improvements in the performance of existing technology used to meet the kraft condensate standards, we are specifically requesting comment on whether there are additional cost-effective control measures that may be able to reduce risks from the pulp and paper subpart S source category. In particular, we are requesting states to identify any controls they have already required for these facilities, any controls they are currently considering or any other controls of which they may be aware.

C. What are the results and proposed decisions based on our technology review?

We evaluated developments in practices, processes and control technologies applicable to emission sources subject to the pulp and paper MACT. This included a search of the RBLC, the Internet and our database containing the 2011 Part I survey responses. For chemical pulping and bleaching, we have determined that there have been no advances in emission control measures since the subpart S standard was originally promulgated in 1998.[47] For kraft pulping process condensates, we have determined that the technology has sufficiently advanced since the 1998 MACT rule to warrant the development of an updated standard. The 1998 MACT rule required kraft pulp mills to either: (1) Recycle the condensates back to equipment that meet the control standards for pulping system vents

[46] See the docket memoranda titled, *Section 112(d)(6) Technology Review for Pulping and Papermaking Processes* and *Summary of Pulp Bleaching Technology Review.*

[47] Additional details on our technology review are provided in docket memoranda titled, *Section 112(d)(6) Technology Review for Pulping and Papermaking Processes,* and *Summary of Pulp Bleaching Technology Review.*

(LVHC, HVLC), (2) treat the condensates to reduce or destroy the HAP by at least 92 percent by weight, (3) treat the condensates to remove a specified amount of HAPs (at least 10.2 lb/ODTP at mills performing bleaching or 6.6 lb/ODTP at mills without bleaching), or (4) treat the condensates to meet a specified HAP concentration at the control device outlet (330 ppmw at mills performing bleaching or 210 ppmw at mills without bleaching). The three control strategies expected to be used by most mills are recycling the condensates, biological treatment and steam stripping.

Our technology review of kraft condensates did not yield any information about new technologies that could become the basis for regulatory options. We then reviewed the 2011 pulp and paper ICR database. In our review of the database, we found that most kraft pulp mills chose the 92 percent control option for compliance demonstration for kraft condensates rather than recycling. Only five mills use recycling, two mills use both recycling and steam stripping, and four mills use the aforementioned ppmw option to control kraft condensates. Consequently, the focus of our technology review was on the control efficiencies of wastewater treatment systems and steam stripping.

We reviewed the 2011 pulp and paper ICR database to determine if, under the current control technologies, there were mills demonstrating greater than the 92 percent minimum level of control (or any equivalent demonstrations). We found that all kraft pulp mills are performing at a higher level than the 92 percent minimum level of control.

For regulatory options, we developed an incremental scale of improvement over the minimum 92 percent control, set up by percent increments from 93 percent to 98 percent. An estimated four mills would be impacted under the 93 percent option, 15 mills under the 94 percent option, 28 mills under the 95 percent option, 41 mills under the 96 percent option, 54 mills under the 97 percent option and 66 under the 98 percent option.

We did not take the analysis beyond 98 percent because that level was determined to be at the limit of control efficiency for one the major control techniques, steam stripping, and it was equivalent to the control level required for non-condensable gases ducted to controls from LVHC and HVLC sources in 40 CFR 63.443(d)(1). After setting up the percent increments, we established an equivalency between the different percent control options and the lb/ODTP and ppmw options:

Percent control, %	lb/ODTP option		ppmw option		Annual cost, $million	HAP emissions reduction, tpy
	Mills performing bleaching	Mills without bleaching	Mills performing bleaching	Mills without bleaching		
93	11.5	7.4	289	184	$0.99	2.0
94	12.8	8.3	248	158	4.1	4.1
95	14.0	9.1	206	131	9.0	6.1
96	15.3	9.9	165	105	16	8.2
97	16.6	10.7	124	79	25	10
98	17.9	11.6	83	53	34	12

Finally, we estimated the costs and HAP emissions reductions associated with each percent control option. Total annual costs for the options ranged from $1 million to $34 million, and HAP emissions reductions ranged from 2,000 to 12,000 tpy. Taking these costs and emissions reductions into consideration, we are proposing the 94 percent option for controlling kraft condensates emissions, which is estimated to cost $4 million per year, with an emissions reduction of 4,000 tpy and a cost effectiveness of $1,000 per ton of HAP.[48]

D. What other actions are we proposing?

1. Startup, Shutdown and Malfunction

The U.S. Court of Appeals for the District of Columbia Circuit vacated portions of two provisions in the EPA's CAA section 112 regulations governing the emissions of HAP during periods of SSM. *Sierra Club* v. *EPA,* 551 F.3d 1019 (DC Cir. 2008), *cert. denied,* 130 S. Ct. 1735 (U.S. 2010). Specifically, the Court vacated the SSM exemption contained in 40 CFR 63.6(f)(1) and 40 CFR 63.6(h)(1), that are part of a regulation, commonly referred to as the ''General Provisions Rule,'' that the EPA promulgated under CAA section 112(d). When incorporated into CAA section 112(d) regulations for specific source categories, these two provisions exempt sources from the requirement to comply with the otherwise applicable CAA section 112(d) emission standard during periods of SSM. In its decision, the *Sierra Club* court held that CAA section 112 and section 302(k) are properly read together to require continuous CAA section 112-compliant standards. 552 F.3d at 1027–28.

There are several provisions in the current regulations that include an exemption for SSM events, akin to the exemption in 40 CFR 63.6(f)(1) and 40 CFR 63.6(h)(1). The DC Circuit vacated the SSM exemption in 40 CFR 63.6(f)(1) and 40 CFR 63.6(h)(1), and we are proposing to remove similar language in this rule. In addition, we are proposing to remove the parenthetical language excluding periods of startup, shutdown or malfunction from excess emissions calculations contained within 40 CFR 63.443(e) and 40 CFR 63.459(b)(11)(ii) of this rule, because this language is inconsistent with *Sierra Club* v. *EPA.* The EPA is further proposing to eliminate the parenthetical language in 40 CFR 63.446(g) that includes startup, shutdown and malfunction periods in excess emissions calculations because retaining such language may incorrectly suggest that other excess emissions provisions such as 40 CFR 63.443(e) that lack such language allow exclusion of such periods in excess emissions calculations. In sum, retaining the parenthetical concerning startup, shutdown and malfunction periods in 40 CFR 63.443(g) is unnecessary and may create confusion.

We are also proposing several revisions to Table 1 (the General Provisions Applicability table). For example, we are proposing to eliminate the incorporation of the General Provisions' requirement that the source develop a SSM plan. We are further proposing to eliminate or revise certain recordkeeping and reporting that related to the SSM exemption. The EPA has attempted to ensure that we have not included in the proposed regulatory language any provisions that are inappropriate, unnecessary or

[48] Additional details on our kraft condensate technology review and cost analysis are provided in the memoranda, *Summary of Kraft Condensate Control Technology Review,* and *Costs and Environmental and Energy Impacts for Subpart S Risk and Technology Review,* in the docket for this proposed action.

redundant in the absence of the SSM exemption. We are specifically seeking comment on whether there are any such provisions that we have inadvertently incorporated or overlooked.

Finally, we are requesting comment on whether to remove, or modify, the excess emissions provisions for LVHC, HVLC and steam strippers in 40 CFR 63.443(e), 40 CFR 63.446(g), and 40 CFR 63.459(b)(11)(ii). The basis for these provisions is discussed in the preamble to the final rule at 63 FR 18529–18530, April 15, 1998. The basis for these excess emission allowances (discussed in the preamble to the final rule at 63 FR 18529–18530) was to approximate the level of backup control that exists at the best-performing mills and the associated periods of time when no control device is available. For LVHC systems, one percent of the operating hours on a semi-annual basis was determined to represent the best performers; for HVLC systems four percent was established to account for downtime due to flow balancing problems and unpredictable pressure changes inherent in the HVLC system; and for steam stripper systems ten percent was established to account for activities such as stripper tray damage or plugging, efficiency losses in the stripper due to contamination of condensate with fiber or black liquor, steam supply downtime, and combustion control downtime. We request comment on whether these provisions should be removed or modified in the final rule, as the provisions create time periods during which a source does not have to comply with a CAA section 112-compliant standard, which we believe is arguably at odds with Sierra Club.

We specifically solicit comment on a variety of issues and request that commenters provide data and information supporting their views. We first request comment and information on the circumstances under which such provisions have been relied upon in the past to remain in compliance with subpart S, and whether such circumstances meet the definitions of startup, shutdown or malfunction (as defined in 40 CFR 63.2), and if they do not, why not. We also seek information on the frequency with which these provisions are used. The annual emissions rates used in risk modeling for today's proposal incorporated emissions that occur during excess emissions periods and the EPA has already collected information on the use of backup controls through Part I of the ICR. We are thus interested in additional information that distinguishes between routine releases for which a source may be using the excess allowance provisions and malfunction events. We request information on: (1) The typical reasons for the releases, including a description of the nature and cause of the release, (2) the frequency of the releases, (3) the duration of such releases, (4) the estimated amount of emissions that occurs during such periods, (5) any work practices employed during excess emissions periods to reduce emissions, and (6) any procedures currently used to monitor such releases. Further, the EPA is interested in knowing whether the excess emissions periods are necessary for technological reasons (*e.g.,* equipment or operational), and the amount of time needed to switch between routine controls and any available backup controls (and whether venting is necessary during these times for technological reasons).

As an alternative to removing the excess allowance provisions, we request comment on whether such provisions should be revised by, for example, (1) narrowing the provisions (such as limiting the circumstances to which they apply), (2) setting an alternative numerical emission limit during these periods, or (3) setting a work practice standard during such periods consistent with the requirements of CAA section 112(h). Accordingly, we are requesting comments that would provide us information to evaluate these options, including sufficient supporting emissions data or other information. We also request comment on whether the current standard should be applied over a longer averaging period, and whether a longer averaging period would obviate the need for excess emissions periods. To the extent that any person suggests that a work practice is appropriate, they will need to provide support for the conclusion that work practices are permissible under section 112(h) because a numerical standard is ''not feasible'' within the meaning of section 112(h)(2). This should include cost information regarding monitoring, testing and controlling of emissions from the sources during these periods. Finally, to the extent that any person suggests that the excess emissions periods should be retained in some form, they should explain how the revisions that they are suggesting are consistent with the CAA.

In proposing the standards in this rule, the EPA has taken into account startup and shutdown periods and is not proposing a different standard for those periods. Nothing in the record suggests that the operations (and attendant emissions) are significantly different during startup or shutdown than during normal operation.

Periods of startup, normal operations and shutdown are all predictable and routine aspects of a source's operations. However, by contrast, malfunction is defined as a ''sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment or a process to operate in a normal or usual manner * * *'' (40 CFR 63.2). The EPA has determined that CAA section 112 does not require that emissions that occur during periods of malfunction be factored into development of CAA section 112 standards. Under section 112, emissions standards for new sources must be no less stringent than the level ''achieved'' by the best controlled similar source and for existing sources generally must be no less stringent than the average emission limitation ''achieved'' by the best performing 12 percent of sources in the category. There is nothing in section 112 that directs the agency to consider malfunctions in determining the level ''achieved'' by the best performing or best controlled sources when setting emission standards. Moreover, while the EPA accounts for variability in setting emissions standards consistent with the section 112 case law, nothing in that case law requires the agency to consider malfunctions as part of that analysis. Section 112 uses the concept of ''best controlled'' and ''best performing'' unit in defining the level of stringency that section 112 performance standards must meet. Applying the concept of ''best controlled'' or ''best performing'' to a unit that is malfunctioning presents significant difficulties, as malfunctions are sudden and unexpected events.

Further, accounting for malfunctions would be difficult, if not impossible, given the myriad different types of malfunctions that can occur across all sources in the category and given the difficulties associated with predicting or accounting for the frequency, degree and duration of various malfunctions that might occur. As such, the performance of units that are malfunctioning is not ''reasonably'' foreseeable. See, *e.g., Sierra Club* v. *EPA,* 167 F. 3d 658, 662 (DC Cir. 1999) (The EPA typically has wide latitude in determining the extent of data-gathering necessary to solve a problem. We generally defer to an agency's decision to proceed on the basis of imperfect scientific information, rather than to ''invest the resources to conduct the perfect study.''). See also, *Weyerhaeuser* v. *Costle,* 590 F.2d 1011, 1058 (DC Cir. 1978) (''In the nature of things, no general limit, individual permit, or even

any upset provision can anticipate all upset situations. After a certain point, the transgression of regulatory limits caused by 'uncontrollable acts of third parties,' such as strikes, sabotage, operator intoxication or insanity, and a variety of other eventualities, must be a matter for the administrative exercise of case-by-case enforcement discretion, not for specification in advance by regulation.''). In addition, the goal of a best controlled or best performing source is to operate in such a way as to avoid malfunctions of the source, and accounting for malfunctions could lead to standards that are significantly less stringent than levels that are achieved by a well-performing non-malfunctioning source. The EPA's approach to malfunctions is consistent with section 112 and is a reasonable interpretation of the statute.

In the event that a source fails to comply with the applicable CAA section 112(d) standards as a result of a malfunction event, the EPA would determine an appropriate response based on, among other things, the good faith efforts of the source to minimize emissions during malfunction periods, including preventative and corrective actions, as well as root cause analyses to ascertain and rectify excess emissions. The EPA would also consider whether the source's failure to comply with the CAA section 112(d) standard was, in fact, ''sudden, infrequent, not reasonably preventable'' and was not instead ''caused in part by poor maintenance or careless operation.'' 40 CFR 63.2 (definition of malfunction).

Finally, the EPA recognizes that even equipment that is properly designed and maintained can sometimes fail and that such failure can sometimes cause an exceedance of the relevant emission standard. (See, *e.g., State Implementation Plans: Policy Regarding Excessive Emissions During Malfunctions, Startup, and Shutdown* (Sept. 20, 1999); *Policy on Excess Emissions During Startup, Shutdown, Maintenance, and Malfunctions* (Feb. 15, 1983)). The EPA is therefore proposing to add to the rule an affirmative defense to civil penalties for exceedances of emission limits that are caused by malfunctions. See § 63.456 for this proposed addition (and see § 63.441 for a definition of ''affirmative defense'' that means, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.). We also are proposing other regulatory provisions to specify the elements that are necessary to establish this affirmative defense; the source must prove by a preponderance of the evidence that it has met all of the elements set forth in § 63.456. (See 40 CFR 22.24). The criteria ensure that the affirmative defense is available only where the event that causes an exceedance of the emission limit meets the narrow definition of malfunction in 40 CFR 63.2 (sudden, infrequent, not reasonable preventable and not caused by poor maintenance and or careless operation). For example, to successfully assert the affirmative defense, the source must prove by a preponderance of the evidence that excess emissions ''[w]ere caused by a sudden, infrequent, and unavoidable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner * * *.'' The criteria also are designed to ensure that steps are taken to correct the malfunction, to minimize emissions in accordance with § 63.456 and to prevent future malfunctions. For example, the source must prove by a preponderance of the evidence that ''[r]epairs were made as expeditiously as possible when the applicable emission limitations were being exceeded * * *'' and that ''[a]ll possible steps were taken to minimize the impact of the excess emissions on ambient air quality, the environment and human health * * *.'' In any judicial or administrative proceeding, the Administrator may challenge the assertion of the affirmative defense and, if the respondent has not met its burden of proving all of the requirements in the affirmative defense, appropriate penalties may be assessed in accordance with section 113 of the CAA (see also 40 CFR 22.27).

Specifically, we are proposing the following changes to the rule related to SSM:

(1) Revise 40 CFR 63.443(e), 63.446(g), and 63.459(b)(11)(ii) to eliminate reference to periods of SSM;

(2) Revise 40 CFR 63.453(q) to incorporate the general duty from 40 CFR 63.6(e)(1)(i) to minimize emissions;

(3) Add 40 CFR 63.454(g), and 40 CFR 63.455(g) to require reporting and recordkeeping requirements associated with periods of malfunction;

(4) Add 40 CFR 63.456 (formerly reserved) to include an affirmative defense to civil penalties for exceedances of emissions limits caused by malfunctions, as well as criteria for establishing the affirmative defense;

(5) Add 40 CFR 63.457(o) to specify the conditions for performance tests; and

(6) Revise Table 1 to specify that 40 CFR 63.6 (e)(1)(i) and (ii), 63.6(e)(3), 63.6(f)(1); 40 CFR 63.7(e)(1), 40 CFR 63.8(c)(1)(i) and (iii), and the last sentence of 63.8(d)(3); 40 CFR 63.10(b)(2)(i),(ii), (iv), and (v); 40 CFR 63.10(c)(10), (11), and (15); and, 40 CFR 63.10(d)(5) of the General Provisions do not apply.

We have attempted to ensure that we have not included in the proposed regulatory language any provisions that are inappropriate, unnecessary or redundant in the absence of the SSM exemption. We are specifically seeking comment on whether there are any such provisions that we have inadvertently incorporated or overlooked.

2. Repeat Testing

As part of an ongoing effort to improve compliance with various federal air emission regulations, we reviewed the testing and monitoring requirement of subpart S and are proposing the following change.

We are proposing to require repeat air emissions performance testing once every 5 years for facilities complying with the standards for kraft, soda and semi-chemical pulping vent gases (§ 63.443(a)); sulfite processes (§ 63.444); and bleaching systems (§ 63.445). Repeat performance tests are already required by permitting authorities for some facilities.[49] Further, we believe that requiring periodic repeat performance tests will help to ensure that control systems are properly maintained over time, thereby reducing the potential for acute emissions episodes.[50]

With today's proposal, repeat air emissions testing would be required for mills complying with the kraft condensates standards in § 63.446 using a steam stripper (or other equipment serving the same function) since such equipment is, by definition, part of the LVHC system.

Quarterly sampling for four HAPs (acetaldehyde, methanol, MEK and propionaldehyde) is currently required for biological treatment systems to demonstrate compliance with the kraft condensates standards in § 63.446(e)(2). We believe this sampling sufficiently demonstrates compliance with the revised emissions standard we are proposing for kraft condensates. However, we are interested in receiving comment on the sampling and reporting methods used for these quarterly tests. We note that MEK was removed from the HAP list in 2005.[51] However, the subpart S equations were derived considering inclusion of MEK. We

[49] Located in 11 states.

[50] For information on the cost associated with the proposed repeat testing requirement, see the memorandum in the docket titled, *Costs and Environmental and Energy Impacts for Subpart S Risk and Technology Review.*

[51] See 70 FR 75047, December 19, 2005.

request comment on the appropriateness of re-deriving these equations to eliminate MEK for the final rule.

We are not proposing repeat air emissions testing for facilities complying with the CCA standards due to the complexity of this compliance approach (*e.g.,* comparison to baseline emissions calculations) and the fact that it often involves both air and/or liquid sampling depending on the CCA technology being used. Nevertheless, we are requesting comment on whether repeat air emissions testing is appropriate (or overly burdensome) for the CCA.

3. Electronic Reporting

The EPA must have performance test data to conduct effective reviews of CAA sections 112 and 129 standards, as well as for many other purposes including compliance determinations, emissions factor development and annual emissions rate determinations. In conducting these required reviews, the EPA has found it ineffective and time consuming, not only for us, but also for regulatory agencies and source owners and operators, to locate, collect and submit performance test data because of varied locations for data storage and varied data storage methods. In recent years, though, stack testing firms have typically collected performance test data in electronic format, making it possible to move to an electronic data submittal system that would increase the ease and efficiency of data submittal and improve data accessibility.

Through this proposal, the EPA is presenting a step to increase the ease and efficiency of data submittal and improve data accessibility. Specifically, the EPA is proposing that owners and operators of pulp and paper facilities submit electronic copies of required performance test reports to the EPA's WebFIRE database. The WebFIRE database was constructed to store performance test data for use in developing emissions factors. A description of the WebFIRE database is available at *http://cfpub.epa.gov/oarweb/index.cfm?action=fire.main*.

As proposed above, data entry would be through an electronic emissions test report structure called the ERT. The ERT would be able to transmit the electronic report through the EPA's CDX network for storage in the WebFIRE database making submittal of data very straightforward and easy. A description of the ERT can be found at *http://www.epa.gov/ttn/chief/ert/ert_tool.html*.

The proposal to submit performance test data electronically to the EPA would apply only to those performance tests conducted using test methods that will be supported by the ERT. The ERT contains a specific electronic data entry form for most of the commonly used EPA reference methods. A listing of the pollutants and test methods supported by the ERT is available at *http://www.epa.gov/ttn/chief/ert/ert_tool.html*. We believe that industry would benefit from this proposed approach to electronic data submittal. Having these data, the EPA would be able to develop improved emissions factors, make fewer information requests and promulgate better regulations.

One major advantage of the proposed submittal of performance test data through the ERT is a standardized method to compile and store much of the documentation required to be reported by this rule. Another advantage is that the ERT clearly states what testing information would be required. Another important proposed benefit of submitting these data to the EPA at the time the source test is conducted is that it should substantially reduce the effort involved in data collection activities in the future. When the EPA has performance test data in hand, there will likely be fewer or less substantial data collection requests in conjunction with prospective required residual risk assessments or technology reviews. This would result in a reduced burden on both affected facilities (in terms of reduced manpower to respond to data collection requests) and the EPA (in terms of preparing and distributing data collection requests and assessing the results).

State, local and tribal agencies could also benefit from more streamlined and accurate review of electronic data submitted to them. The ERT would allow for an electronic review process rather than a manual data assessment, making review and evaluation of the source provided data and calculations easier and more efficient. Finally, another benefit of the proposed data submittal to WebFIRE electronically is that these data would greatly improve the overall quality of existing and new emissions factors by supplementing the pool of emissions test data for establishing emissions factors and by ensuring that the factors are more representative of current industry operational procedures. A common complaint heard from industry and regulators is that emissions factors are outdated or not representative of a particular source category. With timely receipt and incorporation of data from most performance tests, the EPA would be able to ensure that emissions factors, when updated, represent the most current range of operational practices. In summary, in addition to supporting regulation development, control strategy development and other air pollution control activities, having an electronic database populated with performance test data would save industry, state, local, tribal agencies and the EPA significant time, money and effort while also improving the quality of emissions inventories and, as a result, air quality regulations.

Records must be maintained in a form suitable and readily available for expeditious review, according to § 63.10(b)(1). Electronic recordkeeping and reporting is available for many records, and is the form considered most suitable for expeditious review if available. Electronic recordkeeping and reporting is encouraged in this proposal, and some records and reports are required to be kept in electronic format. Records required to be maintained electronically include the output of continuous monitors and the output of the bag leak detection systems. Additionally, standard operating procedures for the bag leak detection system and fugitive emissions control are required to be submitted to the Administrator for approval in electronic format.

4. Other

The following lists additional minor changes to the subpart S NESHAP and minor changes to the part 63 General Provisions that we are proposing. This list includes proposed rule changes that address editorial and other corrections.

(1) Revise 40 CFR 63.457(b)(1) to specify part 60, appendix A–1 for Method 1 or 1A;

(2) Revise 40 CFR 63.457(b)(3) to specify part 60, appendix A–1 for Method 2, 2A, 2C, or 2D;

(3) Revise 40 CFR 63.457(b)(5)(i) to include four additional test methods—Method 320 of part 63, appendix A; Method 18 of part 60, appendix A–6; ASTM D6420–99; and ASTM D6348–03—for measuring methanol emissions from pulp and paper processes;

(4) Revise 40 CFR 63.457(b)(5)(ii) to specify part 60, appendix A–8 for Method 26A;

(5) Revise 40 CFR 63.457(d) to specify part 60, appendix A–7 for Method 21; and

(6) Revise 40 CFR 63.457(k)(1) to specify part 60, appendix A–2 for Method 3A or 3B, and include ASME PTC 19.10—Part 10 as an alternative to Method 3B;

(7) Revise 40 CFR 63.457(c)(3)(ii) to replace NCASI Method DI/MEOH–94.02 with the more recent version of this method, NCASI Method DI/MEOH–94.03;

(8) Add 40 CFR 63.14(f)(5) to incorporate by reference NCASI Method DI/MEOH–94.03; and

(9) Revise 40 CFR 63.14(i)(1) to incorporate by reference ANSI/ASME PTC 19.10–1981.

(10) Revise 40 CFR 63.14(b)(28) and (54) to incorporate by reference ASTM D6420–99 and ASTM D6348–03, respectively.

E. Compliance Dates

We are proposing that existing facilities must comply with all of the requirements in this action (other than affirmative defense provisions and electronic reporting, which are effective upon promulgation of the final rule) no later than 3 years after the effective date of this rule. All new or reconstructed facilities must comply with all requirements in this rule upon startup.

V. Summary of Cost, Environmental and Economic Impacts

A. What are the affected sources?

The affected source for kraft, soda, sulfite or semi-chemical pulping processes is the total of all HAP emission points in the pulping and bleaching systems. The affected source for mechanical, secondary or non-wood pulping processes is the total of all HAP emission points in the bleaching system.

B. What are the air quality impacts?

Under the proposed amendments, an estimated 15 mills would have to upgrade their steam strippers or biological treatment systems to comply with the more stringent kraft condensates standard. The current proposal is estimated to reduce HAP emissions by approximately 4,000 tpy.

The proposed amendments would require an estimated 114 mills to conduct repeat testing for pulping and bleaching operations and all 171 major sources in the category to operate without the SSM exemption. We were unable to quantify the specific emissions reductions associated with repeat emissions testing or eliminating the SSM exemption and excess emissions allowance. However, repeat testing would provide incentive for facilities to maintain their control systems and make periodic adjustments to ensure peak performance, thereby reducing emissions and the potential for periodic episodes of acute risk. Eliminating the SSM exemption would provide an incentive for facilities to minimize emissions during periods of SSM.

C. What are the cost impacts?

Under the proposed amendments, pulp and paper mills are expected to incur costs to upgrade their steam strippers or biological treatment systems to comply with the more stringent kraft condensates standard. These mills would also incur costs to conduct repeat testing and record malfunctions in support of the new affirmative defense in the rule. The total nationwide annual costs associated with these new requirements is $6.2 million.

D. What are the economic impacts?

The EPA performed an EIA of the proposed rule. The EIA, which documents the data sources and methods used and provides detailed results, can be found in the docket for this proposed action. This section provides an overview of key results.

The EPA performed a series of single-market partial-equilibrium analyses of national pulp and paper product markets to estimate the economic consequences of the proposal. The models predict how the regulatory program might affect prices and quantities for 10 paper and paperboard products that, aggregated, constitute the entire production of the papermaking industry. The EPA also conducted an economic welfare analysis that estimated the consumer and producer surplus changes associated with the regulatory program. The welfare analysis identifies how the regulatory costs are distributed across two broad classes of stakeholders: consumers and producers.

The market analysis found that the proposal is likely to induce minimal changes in the average national price of paper and paperboard products. Paper and paperboard product prices are predicted to increase less than 0.01 percent on average, while production levels decrease less than 0.01 percent on average, as a result of the proposal. The partial equilibrium models predict that consumers will see reductions in economic welfare of about $3.3 million as the result of higher prices and reduced consumption. Although producers' welfare losses are mitigated to some degree by slightly higher prices, market conditions limit their ability to pass on all of the compliance costs. As a result, producers are also predicted to experience a loss in economic welfare of about $2.9 million.

The EPA performed a screening analysis for impacts on small businesses by comparing estimated annualized engineering compliance costs at the company-level to company sales. The screening analysis found that the ratio of compliance cost to company revenue falls below 1 percent for the three small companies that are likely to be affected by the proposal. Based on this analysis, the EPA presumes there is no SISNOSE arising from the proposed NESHAP amendments.

Additionally, the EPA estimated the annual labor required to comply with the requirements of the proposal. To do this, the EPA first estimated the labor required for emission control equipment operation and maintenance, then converted this number to FTEs by dividing by 2,080 (40 hours per week multiplied by 52 weeks). The annual labor requirement to comply with the proposal is estimated at about five full-time-equivalent employees. The EPA notes that this type of FTE estimate cannot be used to make assumptions about the specific number of people involved or whether new jobs are created for new employees.

While a series of partial equilibrium models was used to analyze the economic impacts of this proposal, the EPA notes that it is currently developing the ISIS model for the United States pulp and paper industry. When completed, the ISIS model for the pulp and paper industry will be a dynamic engineering-economic model that facilitates analysis of emissions reduction strategies for multiple pollutants, while taking into account plant-level economic and technical factors, such as the type of mill, associated capacity, location, cost of production, applicable controls and costs. By considering various emissions reduction strategies, the model, when completed, will provide information on optimal industry operation and determine the most cost-effective controls to meet the demand for pulp and paper products and the emissions reduction requirements for a given time period of interest.

E. What are the benefits?

The proposed rule is expected to result in a reduction of approximately 4,000 tpy of HAP. We have not quantified the monetary benefits associated with these reductions.

VI. Request for Comments

We are soliciting comments on all aspects of this proposed action. In addition to general comments on this proposed action, we are also interested in any additional data that may help to reduce the uncertainties inherent in the risk assessments and other analyses. We are specifically interested in receiving corrections to the site-specific emissions profiles used for risk modeling. Such data should include supporting documentation in sufficient detail to allow characterization of the quality and representativeness of the data or information. Section VII of this preamble provides more information on submitting data.

VII. Submitting Data Corrections

The site-specific emissions profiles used in the source category risk analyses are available for download on the RTR web page at: *http://www.epa.gov/ttn/atw/rrisk/rtrpg.html.* The data files include detailed information for each

HAP emissions release point for each facility included in the source category.

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. To submit comments on the data downloaded from the RTR web page, complete the following steps:

1. Within this downloaded file, enter suggested revisions to the data fields appropriate for that information. The data fields that may be revised include the following:

Data element	Definition
Control Measure	Are control measures in place? (yes or no).
Control Measure Comment	Select control measure from list provided, and briefly describe the control measure.
Delete	Indicate here if the facility or record should be deleted.
Delete Comment	Describes the reason for deletion.
Emissions Calculation Method Code For Revised Emissions.	Code description of the method used to derive emissions. For example, CEMS, material balance, stack test, *etc.*
Emissions Process Group	Enter the general type of emissions process associated with the specified emissions point.
Fugitive Angle	Enter release angle (clockwise from true North); orientation of the y-dimension relative to true North, measured positive for clockwise starting at 0 degrees (maximum 89 degrees).
Fugitive Length	Enter dimension of the source in the east-west (x-) direction, commonly referred to as length (ft).
Fugitive Width	Enter dimension of the source in the north-south (y-) direction, commonly referred to as width (ft).
Malfunction Emissions	Enter total annual emissions due to malfunctions (tpy).
North American Datum	Enter datum for latitude/longitude coordinates (NAD27 or NAD83); if left blank, NAD83 is assumed.
Process Comment	Enter general comments about process sources of emissions.
REVISED Address	Enter revised physical street address for MACT facility here.
REVISED City	Enter revised city name here.
REVISED County Name	Enter revised county name here.
REVISED Emissions Release Point Type.	Enter revised Emissions Release Point Type here.
REVISED End Date	Enter revised End Date here.
REVISED Exit Gas Flow Rate.	Enter revised Exit Gas Flowrate here (ft^3/sec).
REVISED Exit Gas Temperature.	Enter revised Exit Gas Temperature here (°F).
REVISED Exit Gas Velocity	Enter revised Exit Gas Velocity here (ft/sec).
REVISED Facility Category Code.	Enter revised Facility Category Code here, which indicates whether facility is a major or area source.
REVISED Facility Name	Enter revised Facility Name here.
REVISED Facility Registry Identifier.	Enter revised Facility Registry Identifier here, which is an ID assigned by the EPA Facility Registry System.
REVISED HAP Emissions Performance Level Code.	Enter revised HAP Emissions Performance Level here.
REVISED Latitude	Enter revised Latitude here (decimal degrees).
REVISED Longitude	Enter revised Longitude here (decimal degrees).
REVISED MACT Code	Enter revised MACT Code here.
REVISED Pollutant Code	Enter revised Pollutant Code here.
REVISED Routine Emissions	Enter revised routine emissions value here (tpy).
REVISED SCC Code	Enter revised SCC Code here.
REVISED Stack Diameter	Enter revised Stack Diameter here (ft).
REVISED Stack Height	Enter revised Stack Height here (ft).
REVISED Start Date	Enter revised Start Date here.
REVISED State	Enter revised State here.
REVISED Tribal Code	Enter revised Tribal Code here.
REVISED Zip Code	Enter revised Zip Code here.
Shutdown Emissions	Enter total annual emissions due to shutdown events (tpy).
Stack Comment	Enter general comments about emissions release points.
Startup Emissions	Enter total annual emissions due to startup events (tpy).
Year Closed	Enter date facility stopped operations.

2. Fill in the commenter information fields for each suggested revision (*i.e.,* commenter name, commenter organization, commenter email address, commenter phone number and revision comments).

3. Gather documentation for any suggested emissions revisions (*e.g.,* performance test reports, material balance calculations).

4. Send the entire downloaded file with suggested revisions in Microsoft® Access format and all accompanying documentation to Docket ID Number EPA–HQ–OAR–2007–0544 (through one of the methods described in the ADDRESSES section of this preamble)..

5. If you are providing comments on a facility, you need only submit one file for that facility, which should contain all suggested changes for all sources at that facility. We request that all data revision comments be submitted in the form of updated Microsoft® Access files, which are provided on the RTR web page at: *http://www.epa.gov/ttn/atw/rrisk/rtrpg.html.* (**Note:** If you wish to compare your Pulp and paper ICR Part II submittal to the dataset available on the RTR web page, then you may find it useful to refer to the memorandum in the docket titled, ''*Inputs to the Pulp and Paper Industry October 2011 Residual Risk Modeling,*'' since this memorandum describes how the Part II

data were standardized for regulatory review.)

VIII. Statutory and Executive Order Reviews

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

Under Executive Order 12866 (58 FR 51735, October 4, 1993), this action is a ''significant regulatory action'' because it raises novel legal and policy issues. Accordingly, the EPA submitted this action to OMB for review under Executive Order 12866 and 13563 (76 FR 3821, January 21, 2011), and any changes made in response to OMB recommendations have been documented in the docket for this action.

B. Paperwork Reduction Act

The information collection requirements in this proposed rule have been submitted for approval to OMB under the PRA, 44 U.S.C. 3501 *et seq.* The ICR document prepared by the EPA has been assigned EPA ICR number 2452.01. The information collection requirements are not enforceable until OMB approves them. The information requirements are based on notification, recordkeeping and reporting requirements in the NESHAP General Provisions (40 CFR part 63, subpart A), which are mandatory for all operators subject to national emissions standards. These recordkeeping and reporting requirements are specifically authorized by CAA section 114 (42 U.S.C. 7414). All information submitted to the EPA pursuant to the recordkeeping and reporting requirements for which a claim of confidentiality is made is safeguarded according to agency policies set forth in 40 CFR part 2, subpart B.

We are proposing new paperwork requirements to the pulp and paper source category in the form of repeat testing for selected process equipment, as described in 40 CFR 63.457(a)(2) and recordkeeping of malfunctions, as described in 40 CFR 63.454(g) (conducted in support of the affirmative defense provisions, as described in 40 CFR 63.456). More specifically, we are proposing the addition of stack testing every 5 years for total HAP for chemical pulping operations and bleaching operations at pulp and paper mills.

For this proposed rule, the EPA is adding affirmative defense to the estimate of burden in the ICR. To provide the public with an estimate of the relative magnitude of the burden associated with an assertion of the affirmative defense position adopted by a source, the EPA has provided administrative adjustments to this ICR to show what the notification, recordkeeping and reporting requirements associated with the assertion of the affirmative defense might entail. The EPA's estimate for the required notification, reports and records for any individual incident, including the root cause analysis, totals $3,258 and is based on the time and effort required of a source to review relevant data, interview plant employees and document the events surrounding a malfunction that has caused an exceedance of an emissions limit. The estimate also includes time to produce and retain the record and reports for submission to the EPA. The EPA provides this illustrative estimate of this burden because these costs are only incurred if there has been a violation and a source chooses to take advantage of the affirmative defense.

Given the variety of circumstances under which malfunctions could occur, as well as differences among sources' operation and maintenance practices, we cannot reliably predict the severity and frequency of malfunction-related excess emissions events for a particular source. It is important to note that the EPA has no basis currently for estimating the number of malfunctions that would qualify for an affirmative defense. Current historical records would be an inappropriate basis, as source owners or operators previously operated their facilities in recognition that they were exempt from the requirement to comply with emissions standards during malfunctions. Of the number of excess emissions events reported by source operators, only a small number would be expected to result from a malfunction (based on the definition above), and only a subset of excess emissions caused by malfunctions would result in the source choosing to assert the affirmative defense. Thus we believe the number of instances in which source operators might be expected to avail themselves of the affirmative defense will be extremely small. For this reason, we estimate no more than 2 or 3 such occurrences for all sources subject to subpart S over the 3-year period covered by this ICR. We expect to gather information on such events in the future and will revise this estimate as better information becomes available.

The estimated recordkeeping and reporting burden associated with subpart S after the effective date of the proposed rule is estimated to be 52,300 labor hours at a cost of $4.94 million per year, and total non-labor capital and O&M costs of $841,000 per year. This estimate includes reporting costs, such as reading and understanding the rule requirements, conducting required activities (*e.g.,* stack testing, inspections), and preparing notifications and compliance reports and recordkeeping costs associated with malfunctions, monitoring and inspections. The total burden for the federal government is estimated to be 6,870 hours per year at a total labor cost of $310,000 per year. Burden is defined at 5 CFR 1320.3(b).

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. When this ICR is approved by OMB, the agency will publish a technical amendment to 40 CFR part 9 in the **Federal Register** to display the OMB control numbers for the approved information collection requirements contained in the final rule.

To comment on the agency's need for this information, the accuracy of the provided burden estimates and any suggested methods for minimizing respondent burden, the EPA has established a public docket for this rule which includes this ICR, under Docket ID Number EPA–HQ–OAR–2007–0544. Submit any comments related to the ICR to the EPA and OMB. See **ADDRESSES** section at the beginning of this notice for where to submit comments to the EPA. Send comments to OMB at the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street NW., Washington, DC 20503, Attention: Desk Office for the EPA. Since OMB is required to make a decision concerning the ICR between 30 and 60 days after December 27, 2011, a comment to OMB is best assured of having its full effect if OMB receives it by January 26, 2012. The final rule will respond to any OMB or public comments on the information collection requirements contained in this proposal.

C. Regulatory Flexibility Act

The RFA generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act, or any other statute, unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations and small governmental jurisdictions.

For purposes of assessing the impacts of this proposed rule on small entities, small entity is defined as: (1) A small business as defined by the SBA's regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field. For this source category, which has the general NAICS code 322 (*i.e.,* Paper Manufacturing), the SBA small business size standard is 500 to 750 employees (depending on the specific NAICS code) according to the SBA small business standards definitions. We have estimated the cost impacts of the proposed rule and have determined that the impacts do not constitute a significant economic impact on a substantial number of small entities.

After considering the economic impacts of this proposed rule on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. (See the EIA in the docket for this proposed rule.) Only three of the companies affected are considered small entities per the definition provided in this section. We estimate that this proposed action will not have a significant economic impact on those three companies. The impact of this proposed action will be an annualized compliance cost of less than 1 percent of each company's revenues.

Although this proposed rule will not have a significant economic impact on a substantial number of small entities, the EPA nonetheless has tried to reduce the impact of this rule on small entities. The proposed repeat testing requirement was established in a way that minimizes the costs for testing and reporting while still providing the agency the necessary information needed to ensure continuous compliance with the proposed standards. The proposed malfunction recordkeeping requirement was designed to provide all pulp and paper companies, including small entities, with a means of supporting an affirmative defense in the event of an exceedance occurring during a malfunction.

We continue to be interested in the potential impacts of the proposed rule on small entities and welcome comments on issues related to such impacts.

D. Unfunded Mandates Reform Act

This proposed rule does not contain a federal mandate that may result in expenditures of $100 million or more for state, local and tribal governments, in the aggregate or the private sector in any 1 year. This proposed rule is not expected to impact state, local or tribal governments. The nationwide annual cost of this proposed rule for affected sources is $6.2 million. Thus, this rule is not subject to the requirements of sections 202 and 205 of the UMRA.

This rule is also not subject to the requirements of section 203 of UMRA because it contains no regulatory requirements that might significantly or uniquely affect small governments. This rule will not apply to such governments and will not impose any obligations upon them.

E. Executive Order 13132: Federalism

This proposed rule 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, as specified in Executive Order 13132. None of the facilities subject to this action are owned or operated by state governments, and, nothing in this proposal will supersede state regulations. The burden to the respondents and the states is less than $6.2 million for the entire source category. Thus, Executive Order 13132 does not apply to this proposed rule.

In the spirit of Executive Order 13132, and consistent with the EPA policy to promote communications between the EPA and state and local governments, the EPA specifically solicits comment on this proposed rule from state and local officials.

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

This proposed rule does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). It will not have substantial direct effect on tribal governments, on the relationship between the federal government and Indian tribes, or on the distribution of power and responsibilities between the federal government and Indian tribes, as specified in Executive Order 13175. Thus, Executive Order 13175 does not apply to this action. However, the EPA did outreach and consultation on this rule. The EPA presented this information to the tribes prior to proposal of this rule via a call with the National Tribal Air Association. In addition, the EPA presented the information on the sources and the industry at the National Tribal Forum in Spokane Washington. The EPA also offered consultation by letters sent to all tribal leaders. We held that consultation with the Nez Perce, Forest County Potowatomi and Leech Lake Band of Ojibewa on October 6, 2011.

The EPA specifically solicits additional comment on this proposed action from tribal officials.

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

This proposed rule is not subject to Executive Order 13045 (62 FR 19885, April 23, 1997) because it is not economically significant as defined in Executive Order 12866, and because the agency does not believe the environmental health risks or safety risks addressed by this action present a disproportionate risk to children. This action's health and risk assessments are contained in sections III and IV of this preamble.

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

This action is not a ''significant energy action'' as defined under Executive Order 13211 (66 FR 28355, May 22, 2001), because it is not likely to have a significant adverse effect on the supply, distribution or use of energy. This action will not create any new requirements for sources in the energy supply, distribution or use sectors.

I. National Technology Transfer and Advancement Act

Section 12(d) of the NTTAA, Public Law No. 104–113, (15 U.S.C. 272 note), directs the EPA to use VCS in its regulatory activities, unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (*e.g.,* materials specifications, test methods, sampling procedures and business practices) that are developed or adopted by VCS bodies. The NTTAA directs the EPA to provide Congress, through OMB, explanations when the agency decides not to use available and applicable VCS.

This proposed rulemaking involves technical standards. The EPA proposes to use three VCS in this proposed rule. One VCS, ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' is cited in this proposed rule for its manual method of measuring the content of the exhaust gas as an acceptable alternative to EPA Method 3B of appendix A–2. This standard is available at *http://*

www.asme.org or by mail at the American Society of Mechanical Engineers (ASME), P.O. Box 2900, Fairfield, NJ 07007–2900; or at Global Engineering Documents, Sales Department, 15 Inverness Way East, Englewood, CO 80112.

The VCS, ASTM D6420–99 (2010), ''Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography/Mass Spectrometry'' is cited as an acceptable alternative to EPA Method 18. Also, ASTM D6348–03 (2010), ''Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform (FTIR) Spectroscopy,'' was determined to be an acceptable alternative to EPA Method 320. The EPA Methods 18 and 320 are proposed to be added as alternatives to EPA Method 308 for measurement of methanol emissions. These methods are available for purchase from ASTM, 100 Barr Harbor Drive, Post Office Box C700, West Conshohocken, PA 19428–2959; or ProQuest, 300 North Zeeb Road, Ann Arbor, MI 48106.

While the EPA has identified another 14 VCS as being potentially applicable to this proposed rule, we have decided not to use these VCS in this rulemaking. The use of these VCS would be impractical because they do not meet the objectives of the standards cited in this rule. See the docket for this proposed rule for the reasons for these determinations.

Under 40 CFR 63.7(e)(2)(ii) and (f) and 63.8(f) of the NESHAP General Provisions, a source may apply to the EPA for permission to use alternative test methods or alternative monitoring requirements in place of any required testing methods, performance specifications, or procedures in the final rule and any amendments.

The EPA welcomes comments on this aspect of the proposed rulemaking and, specifically, invites the public to identify potentially applicable VCS and to explain why such standards should be used in this regulation.

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) establishes federal executive policy on environmental justice. Its main provision 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 and low income populations in the United States.

EPA has determined that this proposed rule will not have disproportionately high and adverse human health or environmental effects on minority, low income, indigenous populations because it increases the level of environmental protection for all affected populations without having any disproportionately high and adverse human health or environmental effects on any population, including any minority, low income, or indigenous populations.

These proposed standards will improve public health and welfare, now and in the future, by reducing HAP emissions contributing to environmental and human health impacts. These reductions in HAP associated with the rule are expected to benefit all populations.

Additionally, the agency has reviewed this rule to determine if there is an overrepresentation of minority, low income, or indigenous populations near the sources such that they may face disproportionate exposure from pollutants that could be mitigated by this rulemaking. Although this analysis gives some indication of populations that may be exposed to levels of pollution that cause concern, it does not identify the demographic characteristics of the most highly affected individuals or communities.

The demographic data show that while most demographic categories are below, or within, 2 percentage points of national averages, the African-American population exceeds the national average by 3 percentage points (15 percent versus 12 percent), or +25 percent. The facility-level demographic analysis results are presented in the November 2011 memorandum titled *Review of Environmental Justice Impacts: Pulp and Paper,* a copy of which is available in the docket for this action (EPA–HQ–OAR–2007–0544).

The analysis of demographic data used proximity-to-a-source as a surrogate for exposure to identify those populations considered to be living near affected sources, such that they have notable exposures to current emissions from these sources. The demographic data for this analysis were extracted from the 2000 census data, which were provided to the EPA by the United States Census Bureau. Distributions by race are based on demographic information at the census block level, and all other demographic groups are based on the extrapolation of census block group level data to the census block level. The socio-demographic parameters used in the analysis included the following categories: Racial (White, African American, Native American, Other or Multiracial, and All Other Races); Ethnicity (Hispanic); and Other (Number of people below the poverty line, Number of people with ages between 0 and 18, Number of people with ages greater than or equal to 65, Number of people with no high school diploma).

In determining the aggregate demographic makeup of the communities near affected sources, the EPA focused on those census blocks within 3 miles of affected sources and determined the demographic composition (*e.g.,* race, income, *etc.*) of these census blocks and compared them to the corresponding compositions nationally. The radius of 3 miles (or approximately 5 km) is consistent with other demographic analyses focused on areas around potential sources.[52] [53] [54] [55] In addition, air quality modeling experience has shown that the area within 3 miles of an individual source of emissions can generally be considered the area with the highest ambient air levels of the primary pollutants being emitted for most sources, both in absolute terms and relative to the contribution of other sources (assuming there are other sources in the area, as is typical in urban areas). While facility processes and fugitive emissions may have more localized impacts, the EPA acknowledges that because of various stack heights, there is the potential for dispersion beyond 3 miles. To the extent that any minority, low income, or indigenous subpopulation is disproportionately impacted by the current emissions as a result of the proximity of their homes to these sources, that subpopulation also stands to see increased environmental and health benefit from the emissions reductions called for by this rule.

List of Subjects in 40 CFR Part 63

Environmental protection, Air pollution control, Hazardous

[52] U.S. GAO (Government Accountability Office). *Demographics of People Living Near Waste Facilities.* Washington, DC: Government Printing Office; 1995.

[53] Mohai P, Saha R. ''Reassessing Racial and Socio-economic Disparities in Environmental Justice Research.'' *Demography.* 2006;43(2): 383–399.

[54] Mennis J. ''Using Geographic Information Systems to Create and Analyze Statistical Surfaces of Populations and Risk for Environmental Justice Analysis.'' *Social Science Quarterly,* 2002;83(1): 281–297.

[55] Bullard RD, Mohai P, Wright B, Saha R, *et al. Toxic Waste and Race at Twenty 1987–2007.* United Church of Christ. March, 2007.

substances, Reporting and recordkeeping requirements.

Dated: December 15, 2011.

Lisa P. Jackson,

Administrator.

For the reasons stated in the preamble, the Environmental Protection Agency proposes to amend Title 40, chapter I of the Code of Federal Regulations as follows:

PART 63—[AMENDED]

1. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

Subpart A—[Amended]

2. Section 63.14 is amended by adding paragraph (f)(5) and revising paragraphs (b)(28), (b)(54) and (i)(1) to read as follows:

§ 63.14 Incorporations by reference.

* * * * *

(b) * * *

(28) ASTM D6420–99 (Reapproved 2004), Standards Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry, IBR approved for §§ 60.485(g)(5), 60.485a(g)(5), 63.457(b)(5)(i), 63.772(a)(1)(ii), 63.2354(b)(3)(i), 63.2354(b)(3)(ii), 63.2354(b)(3)(ii)(A), and 63.2351(b)(3)(ii)(B).

* * * * *

(54) ASTM D6348–03, Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy, incorporation by reference (IBR) approved for § 63.457(b)(5)(i) of subpart S, § 63.1349(b)(4)(iii) of subpart LLL, and table 4 to subpart DDDD of this part as specified in the subpart.

* * * * *

(f) * * *

(5) NCASI Method DI/MEOH–94.03, Methanol in Process Liquids and Wastewaters by GC/FID, May 2000, NCASI, Research Triangle Park, NC, IBR approved for §§ 63.457(c)(3)(ii), 63.459(b)(5)(iv)(A), 63.459(b)(5)(iv)(A)(2), and 63.459(b)(8)(iii) of subpart S of this part.

* * * * *

(i) * * *

(1) ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses [Part 10, Instruments and Apparatus],'' IBR approved for §§ 63.309(k)(1)(iii), 63.457(k)(1), 63.865(b), 63.3166(a)(3), 63.3360(e)(1)(iii), 63.3545(a)(3), 63.3555(a)(3), 63.4166(a)(3), 63.4362(a)(3), 63.4766(a)(3), 63.4965(a)(3), 63.5160(d)(1)(iii), 63.9307(c)(2), 63.9323(a)(3), 63.11148(e)(3)(iii), 63.11155(e)(3), 63.11162(f)(3)(iii) and (f)(4), 63.11163(g)(1)(iii) and (g)(2), 63.11410(j)(1)(iii), 63.11551(a)(2)(i)(C), table 5 to subpart DDDDD of this part, table 1 to subpart ZZZZZ of this part, and table 4 to subpart JJJJJJ of this part.

* * * * *

Subpart S—[Amended]

3. Section 63.441 is amended by adding a definition for ''affirmative defense'' to read as follows:

§ 63.441 Definitions.

* * * * *

Affirmative defense means, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.

* * * * *

4. Section 63.443 is amended by revising paragraph (e) introductory text to read as follows:

§ 63.443 Standards for the pulping system at kraft, soda, and semi-chemical processes.

* * * * *

(e) Periods of excess emissions reported under § 63.455 shall not be a violation of § 63.443(c) and (d) provided that the time of excess emissions divided by the total process operating time in a semi-annual reporting period does not exceed the following levels:

* * * * *

5. Section 63.446 is amended as follows:

a. By revising paragraph (e)(3);

b. By revising paragraph (e)(4);

c. By revising paragraph (e)(5); and

d. By revising paragraph (g).

§ 63.446 Standards for kraft pulping process condensates.

* * * * *

(e) * * *

(3) Treat the pulping process condensates to reduce or destroy the total HAPs by at least 92 percent or more by weight on or before [DATE 3 YEARS FROM DATE OF PUBLICATION OF FINAL RULE IN THE **FEDERAL REGISTER**]. After [DATE 3 YEARS FROM DATE OF PUBLICATION OF FINAL RULE IN THE **FEDERAL REGISTER**], treat pulping process condensates to reduce or destroy the total HAPs by at least 94 percent or more by weight; or

(4) At mills that do not perform bleaching, on or before [DATE 3 YEARS FROM DATE OF PUBLICATION OF FINAL RULE IN THE **FEDERAL REGISTER**] treat the pulping process condensates to remove 3.3 kilograms or more of total HAP per megagram (6.6 pounds per ton) of ODP, or achieve a total HAP concentration of 210 parts per million or less by weight at the outlet of the control device. After [DATE 3 YEARS FROM DATE OF PUBLICATION OF FINAL RULE IN THE **FEDERAL REGISTER**], treat the pulping process condensates to remove 4.2 kilograms or more of total HAP per megagram (8.3 pounds per ton) of ODP, or achieve a total HAP concentration of 158 parts per million or less by weight at the outlet of the control device; or

(5) At mills that perform bleaching, on or before [DATE 3 YEARS FROM DATE OF PUBLICATION OF FINAL RULE IN THE **FEDERAL REGISTER**] treat the pulping process condensates to remove 5.1 kilograms or more of total HAP per megagram (10.2 pounds per ton) of ODP, or achieve a total HAP concentration of 330 parts per million or less by weight at the outlet of the control device. After [DATE 3 YEARS FROM DATE OF PUBLICATION OF FINAL RULE IN THE **FEDERAL REGISTER**], treat the pulping process condensates to remove 6.4 kilograms or more of total HAP per megagram (12.8 pounds per ton) of ODP, or achieve a total HAP concentration of 248 parts per million or less by weight at the outlet of the control device.

* * * * *

(g) For each control device (*e.g.* steam stripper system or other equipment serving the same function) used to treat pulping process condensates to comply with the requirements specified in paragraphs (e)(3) through (e)(5) of this section, periods of excess emissions reported under § 63.455 shall not be a violation of paragraphs (d), (e)(3) through (e)(5), and (f) of this section provided that the time of excess emissions divided by the total process operating time in a semi-annual reporting period does not exceed 10 percent. The 10 percent excess emissions allowance does not apply to treatment of pulping process condensates according to paragraph (e)(2) of this section (*e.g.* the biological wastewater treatment system used to treat multiple (primarily non-condensate) wastewater streams to comply with the Clean Water Act).

* * * * *

6. Section 63.453 is amended by adding paragraph (q) to read as follows:

§ 63.453 Monitoring requirements.

* * * * *

(q) At all times, the owner or operator must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

7. Section 63.454 is amended by revising paragraph (a) and adding paragraph (g) to read as follows:

§ 63.454 Recordkeeping requirements.

(a) The owner or operator of each affected source subject to the requirements of this subpart shall comply with the recordkeeping requirements of § 63.10, as shown in table 1 of this subpart, and the requirements specified in paragraphs (b) through (g) of this section for the monitoring parameters specified in § 63.453.

* * * * *

(g) *Recordkeeping of malfunctions.* The owner or operator must maintain the following records of malfunctions:

(1) Records of the occurrence and duration of each malfunction of operation (*i.e.,* process equipment) or the air pollution control and monitoring equipment.

(2) Records of actions taken during periods of malfunction to minimize emissions in accordance with § 63.453(q), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

8. Section 63.455 is amended by adding paragraphs (g) and (h) to read as follows:

§ 63.455 Reporting requirements.

* * * * *

(g) *Malfunction reporting requirements.* If a malfunction occurred during the reporting period, the report must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with § 63.453(q), including actions taken to correct a malfunction.

(h) You must submit performance test reports as specified in paragraphs (h)(1) through (4).

(1) The owner or operator of an affected source shall report the results of the performance test before the close of business on the 60th day following the completion of the performance test, unless approved otherwise in writing by the Administrator. A performance test is ''completed'' when field sample collection is terminated. Unless otherwise approved by the Administrator in writing, results of a performance test shall include the analysis of samples, determination of emissions, and raw data. A complete test report must include the purpose of the test; a brief process description; a complete unit description, including a description of feed streams and control devices; sampling site description; pollutants measured; description of sampling and analysis procedures and any modifications to standard procedures; quality assurance procedures; record of operating conditions, including operating parameters for which limits are being set, during the test; record of preparation of standards; record of calibrations; raw data sheets for field sampling; raw data sheets for field and laboratory analyses; chain-of-custody documentation; explanation of laboratory data qualifiers; example calculations of all applicable stack gas parameters, emission rates, percent reduction rates, and analytical results, as applicable; and any other information required by the test method and the Administrator.

(2) As of January 1, 2012 and within 60 days after the date of completing each performance test, you must submit performance test data, except opacity data, electronically to EPA's Central Data Exchange (CDX) by using the Electronic Reporting Tool (ERT) (see *http://www.epa.gov/ttn/chief/ert/ert_tool.html*) and also report the results of the performance test to the appropriate permitting authority in the form and-or format specified by the permitting authority. Only data collected using test methods compatible with ERT are subject to this requirement to be submitted electronically to EPA's CDX.

(3) Within 60 days after the date of completing each CEMS performance evaluation test, as defined in § 63.2 and required by this subpart, you must submit the relative accuracy test audit data electronically into EPA's CDX by using the ERT as mentioned in paragraph (h)(2) of this section and also report the results of the performance test to the appropriate permitting authority in the form and-or format specified by the permitting authority. Only data collected using test methods compatible with ERT are subject to this requirement to be submitted electronically to EPA's CDX.

(4) All reports required by this subpart not subject to the requirements in paragraphs (h)(2) and (3) of this section must be sent to the Administrator at the appropriate address listed in § 63.13. The Administrator or the delegated authority may request a report in any form suitable for the specific case (*e.g.,* by electronic media such as Excel spreadsheet, on CD or hard copy). The Administrator retains the right to require submittal of reports subject to paragraphs (h)(2) and (3) of this section in paper format.

9. Section 63.456 is added to read as follows:

§ 63.456 Affirmative Defense for Exceedance of Emission Limit During Malfunction.

In response to an action to enforce the standards set forth in paragraphs §§ 63.443(c) and (d), 63.444(b) and (c), 63.445(b) and (c), 63.446(c), (d), and (e), 63.447(b) or § 63.450(d) the owner or operator may assert an affirmative defense to a claim for civil penalties for exceedances of such standards that are caused by malfunction, as defined at 40 CFR 63.2. Appropriate penalties may be assessed, however, if the owner or operator fails to meet the burden of proving all of the requirements in the affirmative defense. The affirmative defense shall not be available for claims for injunctive relief.

(a) To establish the affirmative defense in any action to enforce such a limit, the owner or operator must timely meet the notification requirements in paragraph (b) of this section, and must prove by a preponderance of evidence that:

(1) The excess emissions:

(i) Were caused by a sudden, infrequent, and unavoidable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner, and

(ii) Could not have been prevented through careful planning, proper design or better operation and maintenance practices; and

(iii) Did not stem from any activity or event that could have been foreseen and avoided, or planned for; and

(iv) Were not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and

(2) Repairs were made as expeditiously as possible when the applicable emission limitations were being exceeded. Off-shift and overtime labor were used, to the extent practicable to make these repairs; and

(3) The frequency, amount and duration of the excess emissions (including any bypass) were minimized to the maximum extent practicable during periods of such emissions; and

(4) If the excess emissions resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and

(5) All possible steps were taken to minimize the impact of the excess emissions on ambient air quality, the environment and human health; and

(6) All emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices; and

(7) All of the actions in response to the excess emissions were documented by properly signed, contemporaneous operating logs; and

(8) At all times, the affected source was operated in a manner consistent with good practices for minimizing emissions; and

(9) A written root cause analysis has been prepared, the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the excess emissions resulting from the malfunction event at issue. The analysis shall also specify, using best monitoring methods and engineering judgment, the amount of excess emissions that were the result of the malfunction.

(b) *Notification.* The owner or operator of the affected source experiencing an exceedance of its emission limit(s) during a malfunction shall notify the Administrator by telephone or facsimile (FAX) transmission as soon as possible, but no later than two business days after the initial occurrence of the malfunction, if it wishes to avail itself of an affirmative defense to civil penalties for that malfunction. The owner or operator seeking to assert an affirmative defense shall also submit a written report to the Administrator within 45 days of the initial occurrence of the exceedance of the standard in paragraphs §§ 63.443(c) and (d), 63.444(b) and (c), 63.445(b) and (c), 63.446(c), (d), and (e), 63.447(b) or § 63.450(d) to demonstrate, with all necessary supporting documentation, that it has met the requirements set forth in paragraph (a) of this section. The owner or operator may seek an extension of this deadline for up to 30 additional days by submitting a written request to the Administrator before the expiration of the 45 day period. Until a request for an extension has been approved by the Administrator, the owner or operator is subject to the requirement to submit such report within 45 days of the initial occurrence of the exceedance.

10. Section 63.457 is amended as follows:

a. By revising paragraph (a);

b. By revising paragraphs (b)(1), (b)(3), (b)(4), (b)(5)(i), and (b)(5)(ii);

c. By revising paragraph (c)(3)(ii);

d. By revising paragraph (d)(1);

e. By revising paragraph (k)(1); and

f. By adding paragraph (o).

§ 63.457 Test methods and procedures.

(a) *Performance tests.* Initial and repeat performance tests are required for the emissions sources specified in paragraphs (a)(1) and (2) on this section, except for emission sources controlled by a combustion device that is designed and operated as specified in § 63.443(d)(3) or (d)(4).

(1) Conduct an initial performance test for all emission sources subject to the limitations in §§ 63.443, 63.444, 63.445, 63.446, and 63.447.

(2) Conduct repeat performance tests at five year intervals for all emission sources subject to the limitations in §§ 63.443, 63.444, and 63.445.

(b) * * *

(1) Method 1 or 1A of part 60, appendix A–1, as appropriate, shall be used for selection of the sampling site as follows:

* * * * *

(3) The vent gas volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D of part 60, appendix A–1, as appropriate.

(4) The moisture content of the vent gas shall be measured using Method 4 of part 60, appendix A–3.

(5) * * *

(i) Method 308 in Appendix A of this part; Method 320 in Appendix A of this part; Method 18 in appendix A–6 of part 60; ASTM D6420–99 (incorporated by reference in § 63.14(b)(28) of subpart A of this part); or ASTM D6348–03 (incorporated by reference in § 63.14(b)(54) of subpart A of this part) shall be used to determine the methanol concentration. If ASTM D6348–03 is used the conditions specified in paragraphs (b)(5)(i)(A) though (b)(5)(i)(B) of this section must be met.

(A) The test plan preparation and implementation in the Annexes to ASTM D6348–03, Sections A1 through A8 are required.

(B) In ASTM 6348–03 Annex A5 (Analyte Spiking Technique), the percent (%) R must be determined for each target analyte (Equation A5.5 of ASTM 6348–03). In order for the test data to be acceptable for a compound, %R must be between 70 and 130 percent. If the %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 following adjustment of the sampling or analytical procedure before the retest. The %R value for each compound must be reported in the test report, and all field measurements must be corrected with the calculated %R value for that compound using the following equation: Reported Result = Measured Concentration in the Stack × 100)/%R.

(ii) Except for the modifications specified in paragraphs (b)(5)(ii)(A) through (b)(5)(ii)(K) of this section, Method 26A of part 60, appendix A–8 shall be used to determine chlorine concentration in the vent stream.

* * * * *

(c) * * *

(3) * * *

(ii) For determining methanol concentrations, NCASI Method DI/MEOH–94.03, Methanol in Process Liquids and Wastewaters by GC/FID, May 2000, NCASI, Research Triangle Park, NC. This test method is incorporated by reference in § 63.14(f)(5) of subpart A of this part.

* * * * *

(d) * * *

(1) Method 21, of part 60, appendix A–7; and

* * * * *

(k) * * *

(1) The emission rate correction factor and excess air integrated sampling and analysis procedures of Methods 3A or 3B of part 60, appendix A–2 shall be used to determine the oxygen concentration. The samples shall be taken at the same time that the HAP samples are taken. As an alternative to Method 3B, ASME PTC 19.10–1981–Part 10 may be used (incorporated by reference, see § 63.14(i)(1)).

* * * * *

(o) Performance tests shall be conducted under such conditions as the Administrator specifies to the owner or operator based on representative performance of the affected source for the period being tested. Upon request, the owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests.

11. Section 63.459 is amended by revising paragraph (b)(11)(ii) to read as follows:

§ 63.459 Alternative standards.

* * * * *

(b) * * *

(11) * * *

(ii) Periods of excess emissions shall not constitute a violation provided the time of excess emissions divided by the total process operating time in a semi-annual reporting period does not exceed one percent. All periods of excess emission shall be reported, and shall include:

* * * * *

12. Table 1 to subpart S of part 63 is revised to read as follows:

TABLE 1 TO SUBPART S OF PART 63—GENERAL PROVISIONS APPLICABILITY TO SUBPART S [a]

Reference	Applies to subpart S	Comment
63.1(a)(1)–(3)	Yes.	
63.1(a)(4)	Yes	Subpart S (this table) specifies applicability of each paragraph in subpart A to subpart S.
63.1(a)(5)	No	Section reserved.
63.1(a)(6)–(8)	Yes.	
63.1(a)(9)	No	Section reserved.
63.1(a)(10)	No	Subpart S and other cross-referenced subparts specify calendar or operating day.
63.1(a)(11)–(14)	Yes.	
63.1(b)(1)	No	Subpart S specifies its own applicability.
63.1(b)(2)–(3)	Yes.	
63.1(c)(1)–(2)	Yes.	
63.1(c)(3)	No	Section reserved.
63.1(c)(4)–(5)	Yes.	
63.1(d)	No	Section reserved.
63.1(e)	Yes.	
63.2	Yes.	
63.3	Yes.	
63.4(a)(1)	Yes.	
63.4(a)(3).		
63.4(a)(4)	No	Section reserved.
63.4(a)(5)	Yes.	
63.4(b)	Yes.	
63.4(c)	Yes.	
63.5(a)	Yes.	
63.5(b)(1)	Yes.	
63.5(b)(2)	No	Section reserved.
63.5(b)(3)	Yes.	
63.5(b)(4)–(6)	Yes.	
63.5(c)	No	Section reserved.
63.5(d)	Yes.	
63.5(e)	Yes.	
63.5(f)	Yes.	
63.6(a)	Yes.	
63.6(b)	No	Subpart S specifies compliance dates for sources subject to subpart S.
63.6(c)	No	Subpart S specifies compliance dates for sources subject to subpart S.
63.6(d)	No	Section reserved.
63.6(e)(1)(i)	No	See § 63.453(q) for general duty requirement.
63.6(e)(1)(ii)	No.	
63.6(e)(1)(iii)	Yes.	
63.6(e)(2)	No	Section reserved.
63.6(e)(3)	No.	
63.6(f)(1)	No.	
63.6(f)(2)	Yes.	
63.6(f)(3)	Yes.	
63.6(g)	Yes.	
63.6(h)	No	Pertains to continuous opacity monitors that are not part of this standard.
63.6(i)	Yes.	
63.6(j)	Yes.	
63.7	Yes, except for 63.7(e)(1).	Section 63.7(e)(1) is replaced with § 63.457(o) which specifies performance testing conditions under Subpart S.
63.8(a)(1)	Yes.	
63.8(a)(2)	Yes.	
63.8(a)(3)	No	Section reserved.
63.8(a)(4)	Yes.	
63.8(b)(1)	Yes.	
63.8(b)(2)	No	Subpart S specifies locations to conduct monitoring.
63.8(b)(3)	Yes.	
63.8(c)(1)(i)	No	See § 63.453(q) for general duty requirement (which includes monitoring equipment).
63.8(c)(1)(ii)	Yes.	
63.8(c)(1)(iii)	No.	
63.8(c)(2)	Yes.	
63.8(c)(3)	Yes.	
63.8(c)(4)	No	Subpart S allows site specific determination of monitoring frequency in § 63.453(n)(4).
63.8(c)(5)	No	Pertains to continuous opacity monitors that are not part of this standard.
63.8(c)(6)	Yes.	
63.8(c)(7)	Yes.	

TABLE 1 TO SUBPART S OF PART 63—GENERAL PROVISIONS APPLICABILITY TO SUBPART S [a]—Continued

Reference	Applies to subpart S	Comment
63.8(c)(8)	Yes.	
63.8(d)	Yes, except for last sentence, which refers to an SSM plan.	SSM plans are not required.
63.8(e)	Yes.	
63.8(f)(1)–(5)	Yes.	
63.8(f)(6)	No	Subpart S does not specify relative accuracy test for CEMs.
63.8(g)	Yes.	
63.9(a)	Yes.	
63.9(b)	Yes	Initial notifications must be submitted within one year after the source becomes subject to the relevant standard.
63.9(c)	Yes.	
63.9(d)	No	Special compliance requirements are only applicable to kraft mills.
63.9(e)	Yes.	
63.9(f)	No	Pertains to continuous opacity monitors that are not part of this standard.
63.9(g)(1)	Yes.	
63.9(g)(2)	No	Pertains to continuous opacity monitors that are not part of this standard.
63.9(g)(3)	No	Subpart S does not specify relative accuracy tests, therefore no notification is required for an alternative.
63.9(h)	Yes.	
63.9(i)	Yes.	
63.9(j)	Yes.	
63.10(a)	Yes.	
63.10(b)(1)	Yes.	
63.10(b)(2)(i)	No.	
63.10(b)(2)(ii)	No	See § 63.454(g) for recordkeeping of (1) occurrence and duration and (2) actions taken during malfunction.
63.10(b)(2)(iii)	Yes.	
63.10(b)(2)(iv)	No.	
63.10(b)(2)(v)	No.	
63.10(b)(2)(vi)	Yes.	
63.10(b)(2)(vii)–(ix).	Yes.	
63.10(b)(3)	Yes.	
63.10(c)(1)–(7)	Yes.	
63.10(c)(8)	Yes.	
63.10(c)(9)	No	Section reserved.
63.10(c)(10)–(11)	No	See § 63.454(g) for malfunction recordkeeping requirements.
63.10(c)(12)–(14)	Yes.	
63.10(c)(15)	No.	
63.10(d)(1)	Yes.	
63.10(d)(2)	Yes.	
63.10(d)(3)	No	Pertains to continuous opacity monitors that are not part of this standard.
63.10(d)(4)	Yes.	
63.10(d)(5)	No	See § 63.455(g) for malfunction reporting requirements.
63.10(e)(1)	Yes.	
63.10(e)(2)(i)	Yes.	
63.10(e)(2)(ii)	No	Pertains to continuous opacity monitors that are not part of this standard.
63.10(e)(3)	Yes.	
63.10(e)(4)	No	Pertains to continuous opacity monitors that are not part of this standard.
63.10(f)	Yes.	
63.11–63.15	Yes.	

[a] Wherever subpart A specifies ''postmark'' dates, submittals may be sent by methods other than the U.S. Mail (*e.g.,* by fax or courier). Submittals shall be sent by the specified dates, but a postmark is not required.

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