ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 60

[EPA–HQ–OAR–2012–0640; FRL–9815–9]

RIN 2060–AR64

Kraft Pulp Mills NSPS Review

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The EPA is proposing revisions to the new source performance standards for kraft pulp mills. These revised standards include particulate matter emission limits for recovery furnaces, smelt dissolving tanks and lime kilns, which apply to emission units commencing construction, reconstruction or modification after May 23, 2013 that are different than those required under the existing standards for kraft pulp mills. The exemptions to opacity standards do not apply to the proposed standards for kraft pulp mills. The proposed rule also removes the exemption for periods of startup and shutdown resulting in a standard that applies at all times. The proposed rule includes additional testing requirements and updated monitoring, recordkeeping and reporting requirements for affected sources. These differences are expected to ensure that control systems are properly maintained over time, ensure continuous compliance with standards and improve data accessibility for the EPA, states, tribal governments and communities.

DATES: Comments must be received on or before July 8, 2013. 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 June 24, 2013.

ADDRESSES: Submit your comments, identified by Docket ID Number EPA–HQ–OAR–2012–0640, by one of the following methods:

- *Federal eRulemaking Portal: http://www.regulations.gov.* Follow the 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.
- *E-Mail: a-and-r-Docket@epa.gov.* Include EPA–HQ–OAR–2012–0640 in the subject line of the message.
- *Fax:* Fax your comments to: (202) 566–9744, Attention: Docket ID Number EPA–HQ–OAR–2012–0640.
- *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–2012–0640. 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 St. NW., Washington, DC 20503.
- *Hand Delivery or Courier:* In person or by courier, deliver comments to EPA Docket Center, EPA West, Room 3334, 1301 Constitution Ave. NW., Washington, DC 20460. Such deliveries are only accepted during the Docket Center'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 a total of two copies.

Instructions: All submissions received must include the agency name and docket number or Regulatory Identifier Number (RIN) for this rulemaking. All comments received will be posted without change to *http://www.regulations.gov,* including any personal information provided, unless the comment includes information claimed to be confidential business information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through *http://www.regulations.gov* or email. The *http://www.regulations.gov* Web site is an ''anonymous access'' system, which means that 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 will be 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 detailed instructions on submitting comments and additional information on the rulemaking process, see the ''General Information'' heading under the ''Organization of This Document'' heading in the **SUPPLEMENTARY INFORMATION** section of this document.

Docket: 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., CBI or other information whose disclosure is restricted by statute). Certain other material, such as copyrighted material, will be publicly available only in hard copy form. Publicly available docket materials are available either electronically in *http://www.regulations.gov* or in hard copy at the EPA Docket Center, Public Reading Room, 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 Air Docket is (202) 566–1742.

FOR FURTHER INFORMATION CONTACT: For questions about this proposed rule for kraft pulp mills, contact Dr. Kelley Spence, Natural Resources Group, Sector Policies and Program Division, Office of Air Quality Planning and Standards (E143–03), Environmental Protection Agency, Research Triangle Park, North Carolina 27711, telephone number (919) 541–3158; fax number (919) 541–3470; email address: *spence.kelley@epa.gov.*

SUPPLEMENTARY INFORMATION:

Acronyms and Abbreviations. The following acronyms and abbreviations are used in this document:

ANSI American National Standards Institute
ASME American Society of Mechanical Engineers
BACT Best achievable control technology
BDT Best demonstrated technology
BLO Black liquor oxidation
BLS Black liquor solids
BSER Best system of emissions reduction
CAA Clean Air Act
CBI Confidential business information
CDX Central Data Exchange
CEDRI Compliance and Emissions Data Reporting Interface
CEMS Continuous emission monitoring system
CFR Code of Federal Regulations
CO Carbon monoxide
COMS Continuous opacity monitoring system
CWA Clean Water Act
DCE Direct contact evaporator
ERT Electronic Reporting Tool
ESP Electrostatic precipitator
g/dscm Grams per dry standard cubic meter

gr/dscf Grains per dry standard cubic foot
HAP Hazardous air pollutant
H_2S Hydrogen Sulfide
HVLC High volume low concentration
ICR Information collection request
lb Pound
LVHC Low volume high concentration
MACT Maximum achievable control technology
NAAQS National Ambient Air Quality Standards
NCG Non-condensable gas
NDCE Non-direct contact evaporator
NESHAP National Emission Standards for Hazardous Air Pollutants
NO_X Nitrogen oxides
NSPS New Source Performance Standards
NTTAA National Technology Transfer and Advancement Act of 1995
OAQPS Office of Air Quality Planning and Standards
OMB Office of Management and Budget
O&M Operating and maintenance
O_2 Oxygen
PM Particulate Matter
ppm Parts per million
ppmv Parts per Million by Volume
ppmdv Parts per Million of Dry Volume
PRA Paperwork Reduction Act
RIN Regulatory Identifier Number
SD Smelt dissolving tank
SISNOSE Significant economic impact on a substantial number of small entities
S/L/Ts State, local and tribal
SO_2 Sulfur dioxide
SSM Startup, shutdown and malfunction
TTN Technology Transfer Network
TRS Total reduced sulfur
UMRA Unfunded Mandates Reform Act
VCS Voluntary consensus standards
WWW Worldwide Web

Organization of This Document. The following outline is provided to aid in locating information in this preamble.

I. Executive Summary

A. Purpose of Regulatory Action

Section 111(b)(1)(B) of the CAA requires the EPA to review and, if appropriate, revise existing NSPS at least every 8 years. The NSPS for kraft pulp mills (40 CFR part 60, subpart BB) were promulgated in 1978 and last reviewed in 1986. As part of the review, the EPA considers what degree of emission limitation is achievable through the application of the BSER, which (taking into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated. The EPA also considers the emission limitations and reductions that have been achieved in practice.

In addition to conducting the NSPS review, the EPA is evaluating the SSM provisions in the rule in light of the D.C. Circuit Court of Appeals decision in *Sierra Club* v. *EPA,* 551 F.3d 1019 (D.C. Cir. 2008), which held that the SSM exemption in the General Provisions in 40 CFR part 63 violated the CAA's requirement that some standard apply continuously. In the *Sierra Club* case, the D.C. Circuit vacated the SSM exemption provisions in the General Provisions of 40 CFR part 63 for non-opacity and opacity standards. The court explained that under section 302(k) of the CAA, emissions standards or limitations must be continuous in nature. The court then held that the SSM exemption violates the CAA's requirement that some section 112 standard apply continuously. In light of the court's reasoning, all rule provisions must be carefully examined to determine whether they provide for periods when no emission standard applies. The EPA believes the reasoning behind the D.C. Circuit's decision in *Sierra Club* v. *EPA* applies equally to section 111 rules. The EPA's general approach to SSM periods has been used consistently in CAA section 111, 112 and section 129 rulemaking actions, since the D.C. Circuit's decision in *Sierra Club.* See, e.g., *New Source Performance Standards Review for Nitric Acid Plants, Final Rule,* 77 FR 48433 (August 14, 2012); *New Source Performance Standards for New Stationary Sources and Emission guidelines for Existing Sources; Commercial and Industrial Solid Waste Incineration Units, Final rule,* 76 FR 15704 (March 21, 2011); *Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews; Final rules,* 77 FR 49490 (August 16, 2012).

To address the NSPS review, SSM exemptions and other changes, the EPA is proposing new standards, which will apply to affected sources at kraft pulp mills for which construction, modification or reconstruction commences on or after May 23, 2013. The affected sources under the proposed NSPS are new, modified or reconstructed digester systems, brown stock washer systems, evaporator systems, condensate stripper systems, recovery furnaces, SDTs, and lime kilns at kraft pulp mills. The requirements for these new, modified or reconstructed sources will be included in a new subpart—40 CFR part 60, subpart BBa. The EPA is also proposing testing, monitoring, recordkeeping and reporting requirements for subpart BBa that are in some ways different from what is required under subpart BB.

B. Summary of Major Provisions

Based on the results of the NSPS review, the EPA is proposing the following regarding the standards for filterable PM, opacity and TRS compounds:

- Reducing the filterable PM emission limit for new and reconstructed

recovery furnaces and lime kilns and new and reconstructed SDTs associated with new or reconstructed recovery furnaces to levels equivalent to the new source PM limits in the NESHAP for chemical recovery combustion sources at kraft, soda, sulfite and stand-alone semichemical pulp mills (40 CFR part 63, subpart MM), to which these sources would already be subject;

- Maintaining the filterable PM emission limit for modified recovery furnaces and lime kilns and for modified SDTs and new and reconstructed SDTs not associated with a new or reconstructed recovery furnace at their current NSPS levels;
- Reducing the opacity limit for recovery furnaces to the 20 percent corrective action level in NESHAP subpart MM and reducing the opacity monitoring allowance from 6 percent to 2 percent;
- Adding an opacity limit of 20 percent for lime kilns equipped with ESPs with an opacity monitoring allowance of 1 percent; and
- Maintaining the TRS emission limit for digester systems, brown stock washer systems, evaporator systems, condensate stripper systems, recovery furnaces, SDTs, and lime kilns at their current levels, but restricting the TRS monitoring allowance of 1 percent for recovery furnaces to 30 ppmdv and adding a TRS monitoring allowance of 1 percent for lime kilns, restricted to 22 ppmdv.

To ensure continuous compliance with the PM standards, including during periods when the opacity monitoring allowance is used, the EPA is proposing new ESP parameter monitoring requirements for recovery furnaces and lime kilns equipped with ESPs. The EPA is proposing wet scrubber parameter monitoring requirements for recovery furnaces, SDTs and lime kilns equipped with wet scrubbers that will be consistent with the wet scrubber parameter monitoring requirements under NESHAP subpart MM. The PM standards and parameter monitoring requirements are applicable at all times. The EPA is proposing to include in the rule an affirmative defense to civil penalties for exceedances of emission limits caused by malfunctions that meet certain criteria (*i.e.,* the exceedance must come from an ''unavoidable failure''), along with recordkeeping and reporting requirements.

The EPA is proposing repeat performance testing for filterable PM and TRS once every 5 years for new, modified and reconstructed affected sources complying with the filterable PM and TRS standards in subpart BBa. The EPA is also proposing initial and repeat performance testing for condensable PM to gather emissions data that will enable a broader understanding of condensable PM emissions from pulp and paper combustion sources. The EPA is proposing that mills submit electronic copies of their performance test reports to the EPA using the EPA's ERT. The EPA is also proposing text with certain technical and editorial differences, including clarifying the location of applicable test methods in the CFR, incorporating by reference one non-EPA test method, and including definitions to subpart BBa pertinent to the differences between the proposed subpart BBa and the current subpart BB.

C. Summary of Costs and Benefits

Table 1 summarizes the costs and benefits of this proposed action. See section VI of this preamble for further discussion.

TABLE 1—SUMMARY OF THE COSTS AND BENEFITS OF SUBPART BBa FOR NEW, MODIFIED AND RECONSTRUCTED AFFECTED SOURCES AT KRAFT PULP MILLS

Requirement	Capital cost ($ thousand)	Annual cost ($ thousand)	Net benefit
Repeat emissions testing	$186	$45	N/A
Monitoring	341	129	N/A
Incremental reporting/recordkeeping	50	215	N/A
Total nationwide	577	390	N/A

Note: Totals may not sum exactly due to rounding.

II. General Information

A. Does this action apply to me?

Categories and entities potentially regulated by this proposed rule include:

Category	NAICS code [1]	Examples of regulated entities
Industry	3221	Kraft pulp mills.
Federal government		Not affected.
State/local/tribal government		Not affected.

[1] North American Industrial Classification System.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. To determine whether your facility would be regulated by this action, you should examine the applicability criteria in 40 CFR 60.280a. If you have any questions regarding the applicability of this proposed action to a particular entity, contact the person in the preceding **FOR FURTHER INFORMATION CONTACT** section.

B. What should I consider as I prepare my comments to the EPA?

Do not submit information that you consider to be CBI electronically through *http://www.regulations.gov* or email. 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, Environmental Protection Agency, Research Triangle Park, NC 27711, Attention: Docket ID Number EPA–HQ–OAR–2012–0640. Clearly mark the part or all of the information that you claim to be CBI. For CBI information in 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. Information marked as CBI will not be disclosed except in accordance with procedures set forth in 40 CFR part 2.

C. Where can I get a copy of this document?

In addition to being available in the docket, an electronic copy of the proposed action is available on the WWW through the TTN Web site. Following signature, the EPA posted a copy of the proposed action on the TTN Web site's policy and guidance page for newly proposed or promulgated rules at *http://www.epa.gov/ttn/oarpg.* The TTN Web site provides information and technology exchange in various areas of air pollution control.

D. When would a public hearing occur?

The EPA will hold a public hearing on this proposed rule if requested. Requests for a hearing must be made by June 3, 2013. Please contact Ms. Joan Rogers at *Rogers.Joanc@epa.gov* or 919–541–4487 by June 3, 2013 to request a public hearing. If a hearing is requested, the EPA will hold a hearing on June 7, 2013 at the U.S. EPA, 109 T.W. Alexander Drive, Research Triangle Park, North Carolina 27711. Please contact Ms. Joan Rogers for details regarding the public hearing.

III. Background Information

A. What is the statutory authority for this proposed rule?

New source performance standards implement CAA section 111, which requires that each NSPS reflect the degree of emission limitation achievable through the application of the BSER which (taking into consideration the cost of achieving such emission reductions, any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated. This level of control is referred to as BSER and has been referred to in the past as ''best demonstrated technology'' or BDT. In assessing whether a standard is achievable, the EPA must account for routine operating variability associated with performance of the system on whose performance the standard is based. See *National Lime Ass'n* v. *EPA,* 627 F. 2d 416, 431–33 (D.C. Cir. 1980).

Existing affected facilities that are modified or reconstructed would also be subject to this proposed rule for affected sources. Under CAA section 111(a)(4), ''modification'' means any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted. Changes to an existing facility that do not result in an increase in emissions are not considered modifications.

Rebuilt emission units would become subject to the proposed standards under the reconstruction provisions, regardless of changes in emission rate. Reconstruction means the replacement of components of an existing facility such that: (1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility; and (2) it is technologically and economically feasible to meet the applicable standards (40 CFR 60.15). Section 111(b)(1)(B) of the CAA requires the EPA to periodically review and revise the standards of performance, as necessary, to reflect improvements in methods for reducing emissions.

The NSPS are directly enforceable federal regulations issued for categories of sources which cause, or contribute significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare. Since 1970, the NSPS have been successful in achieving long-term emissions reductions in numerous industries by assuring that cost-effective controls are installed on new, reconstructed or modified sources.

B. What are the current NSPS for kraft pulp mills?

The original NSPS for kraft pulp mills (40 CFR part 60, subpart BB) were promulgated in the **Federal Register** on February 23, 1978 (43 FR 7572). The first review of the kraft pulp mills NSPS was completed on May 20, 1986 (51 FR 18544). The 1986 review made changes to TRS emission limits and temperature monitoring requirements. Minor testing and monitoring changes and technical corrections were made to the kraft pulp mills NSPS after the 1986 review (February 14, 1989 (54 FR 6673); May 17, 1989 (54 FR 21344); February 14, 1990 (55 FR 5212); October 17, 2000 (65 FR 61759); and September 21, 2006 (71 FR 55127)).

The current kraft pulp mills NSPS (subpart BB) apply to the following emission units constructed, reconstructed or modified after September 24, 1976, that are located at facilities engaged in kraft pulping:

- Digester systems
- Brown stock washer systems
- Multiple-effect evaporator systems
- Condensate stripper systems
- Recovery furnaces
- Smelt dissolving tanks
- Lime kilns

The current NSPS, as amended under the 1986 review and later actions, include the following emission limits and work practice standards:

Affected sources	40 CFR 60.282 Particulate matter (PM)	40 CFR 60.283 Total reduced sulfur (TRS)
Digester system Brown stock washer system. Evaporator system. Condensate stripper system.	None	One of the following conditions must be met: 1. Combust emissions from affected source in one of the following: (a) lime kiln subject to subpart BB (8 ppmdv TRS limit); (b) recovery furnace subject to subpart BB (5 or 25 ppmdv TRS limit); or (c) incinerator, recovery furnace, or lime kiln not subject to subpart BB, operated at a minimum temperature of 1200 °F for 0.5 seconds (no ppmdv limit). 2. Use non-combustion control device with a limit of 5 ppmdv. 3. It is technologically or economically infeasible to incinerate brown stock washer systems gases. 4. Uncontrolled digester gases contain less than 0.01 pound of TRS per ton of air-dried pulp.
Recovery furnace	1. 0.044 gr/dscf @ 8% O_2; and 2. 35% opacity; and 3. 6% monitoring allowance for opacity.	1a. *Straight*[1]: 5 ppmdv @ 8% O_2; or 1b. *Cross*[2]: 25 ppmdv @ 8% O_2; and 2. 1% monitoring allowance for TRS.
Smelt dissolving tank	0.2 lb/ton BLS dry weight	0.033 lb/ton BLS as H_2S.
Lime kiln	1a. *Gas-fired:* 0.066 gr/dscf @ 10% O_2; or 1b. *Liquid fuel-fired:* 0.13 gr/dscf @ 10% O_2.	8 ppmdv @ 10% O_2.

[1] A straight recovery furnace is one that only burns kraft pulping liquors.
[2] A cross recovery furnace is one that burns kraft and neutral sulfite semichemical pulping liquors.

Initial compliance with the PM and TRS emission limits in the current NSPS (subpart BB) is demonstrated by conducting initial performance tests for these pollutants. To demonstrate continuous compliance, certain operating parameters must be monitored and maintained within a range of site-specific values. Continuous opacity monitors are required for recovery furnaces and continuous TRS monitors are required for recovery furnaces and lime kilns. Parameter monitors for scrubber pressure loss and scrubbing liquid supply pressure are required for any lime kiln or SDT using a wet scrubber to comply with their respective PM emission limits in subpart BB. For digester systems, brown stock washers, evaporators and condensate stripper systems that use an incinerator to control emissions, incinerator temperature monitors are required. Subpart BB requires TRS monitors for those that do not use incinerators (e.g., the TRS monitor installed on a recovery furnace or lime kiln controlling emissions is used; or a TRS monitor is installed on a non-combustion control system).

IV. Summary of Proposed Standards

A. What source category is being regulated?

Today's proposed standards would apply to affected emission sources at kraft pulp mills for which construction, modification or reconstruction commences on or after May 23, 2013. The affected sources under the proposed NSPS are new, modified or reconstructed digester systems, brown stock washer systems, evaporator systems, condensate stripper systems, recovery furnaces, smelt dissolving tanks and lime kilns located at a kraft pulp mill.

B. What pollutants are emitted from these sources?

The pollutants regulated under section 111(b) for new, modified or reconstructed emission units at kraft pulp mills are filterable PM and TRS. Opacity is regulated to ensure proper operation and maintenance of the ESP used to control PM emissions.

Particulate matter emissions and opacity are also regulated under a separate federal standard, the subpart MM NESHAP for chemical recovery combustion sources at kraft, soda, sulfite and stand-alone semichemical pulp mills (40 CFR part 63). These standards were promulgated on January 12, 2001 (66 FR 3180) and were not challenged; therefore the standards are an appropriate baseline for analysis. Particulate matter is regulated as a surrogate for HAP metals in the subpart MM NESHAP pursuant to CAA section 112.

The most common technologies used to control PM and TRS emissions from kraft pulp mills are listed as follows:

Affected sources	Pollutant	Control technology
Digester, brown stock washer, evaporator and condensate stripper systems.	TRS	Incineration of the gases in the recovery furnace, lime kiln or separate incineration unit.
Recovery furnace	PM	Use of an ESP.
	TRS	Use of a NDCE recovery furnace; or use of staged BLO for DCE recovery furnaces.
Smelt dissolving tank	PM	Use of a wet scrubber.
	TRS	Use of water not highly contaminated with dissolved sulfides for dissolving the smelt and for scrubbing.
Lime kiln	PM	Use of a venturi scrubber, ESP, or scrubber/ESP combination.
	TRS	More efficient process controls (e.g., mud washing) and use of caustic solution in the scrubber.

The PM concentration limits in the subpart BB NSPS and subpart MM NESHAP are based on filterable PM measured by EPA Method 5. Filterable PM consists of those particles directly emitted by a source as a solid or liquid at the stack (or similar release conditions) and captured on the filter of a stack test train. A fraction of the PM emitted from recovery furnaces, SDTs and lime kilns is PM with an aerodynamic diameter less than or equal to 2.5 micrometers ($PM_{2.5}$). The EPA is not proposing separate standards for $PM_{2.5}$ in this action because the available emissions test data for $PM_{2.5}$ are limited and not adequate for setting standards (e.g., the measurement method for $PM_{2.5}$ does not apply for scrubber wet stacks), and the same controls that remove filterable PM also reduce filterable $PM_{2.5}$.

Condensable PM is also emitted from recovery furnaces, SDTs and lime kilns. Condensable PM is material that is in vapor phase at stack conditions that condenses and/or reacts upon cooling and dilution in the ambient air to form solid or liquid PM after discharge from the stack. For purposes of implementing the NAAQS, Appendix A to subpart A of 40 CFR part 51 defines $PM_{2.5}$ as including both filterable and condensable fractions of PM.

The PM concentration limits in today's proposed NSPS review are based on filterable PM measured by EPA Method 5 because the majority of PM emissions data available are Method 5 data. Emissions of condensable PM are measured using EPA Method 202, which can be added as the ''back half'' to a Method 5 sampling train. Although today's proposed NSPS review contains no emission limits for condensable PM, the EPA is proposing to require emissions testing for condensable PM in conjunction with filterable PM testing to gather condensable PM emissions data for future analyses. Additional data and research are needed to develop a broader understanding of condensable PM emissions from pulp and paper combustion sources and to determine mechanisms for reducing condensable PM. Work to date suggests that condensable PM emissions may not correlate with filterable PM emissions, and there is some indication that SO_2 present in the stack gas from pulp and paper combustion sources may affect the accuracy of the condensable PM measurement. Additional data will aid in our understanding of condensable PM from pulp and paper sources and how it may be addressed.

In addition to PM and TRS, kraft pulp mills are also sources of criteria pollutants such as NO_X, SO_2, and CO. Today's proposed NSPS review focuses on the PM and TRS emission standards in subpart BB that are due for review under CAA section 111(b)(1)(B). No standards were established for SO_2, NO_X, and CO emissions from recovery furnaces and lime kilns in the original kraft pulping NSPS or in the 1986 NSPS review because no best demonstrated control techniques, considering costs, were identified for these pollutants and sources in the kraft pulping industry. Since that time, permitting authorities have implemented permit limits for these pollutants based on site-specific process measures that may or may not be transferrable from mill to mill. The pollutants NO_X and SO_2 are of particular interest because these pollutants can react in the atmosphere to form secondary emissions of $PM_{2.5}$. Additional research will be done for a potential future rulemaking to determine if federal emission limits should be established for other criteria pollutants (such as NO_X or SO_2), including research into the technological basis for permit limits; analysis of emissions test data; and analysis of the benefits, trade-offs and costs of controls to achieve reductions in these pollutants.

C. What are the proposed standards?

The EPA is proposing the following actions regarding the NSPS emission limits for those affected sources for which construction, modification or reconstruction is commenced on or after May 23, 2013:

- Reduce the NSPS PM limit for new and reconstructed recovery furnaces from 0.044 gr/dscf to the new source PM limit of 0.015 gr/dscf found in the subpart MM NESHAP.
- Reduce the opacity limit for recovery furnaces from 35 percent to 20 percent opacity and reduce the monitoring allowance from 6 percent to 2 percent of the 6-minute opacity averages.
- Maintain the current NSPS TRS limits for recovery furnaces (5 ppmdv for straight, 25 ppmdv for cross) and restrict the 1 percent monitoring allowance for TRS emissions to 30 ppmdv or less. Previously, there was no maximum TRS limit for these periods.
- Reduce the NSPS PM limit for new and reconstructed SDTs associated with new or reconstructed recovery furnaces from 0.2 lb/ton BLS to the new source PM limit of 0.12 lb/ton BLS in the subpart MM NESHAP.
- Reduce the NSPS PM limit for modified lime kilns from 0.066 gr/dscf for gas-fired kilns and 0.13 gr/dscf for liquid-fired kilns to the existing source limit of 0.064 gr/dscf found in the subpart MM NESHAP (for all fuels) and reduce the NSPS PM limit for new and reconstructed lime kilns from 0.066 gr/dscf for gas-fired kilns and 0.13 gr/dscf for liquid-fired kilns to the new source limit of 0.010 gr/dscf found in the subpart MM NESHAP.
- Maintain the current NSPS TRS limit for lime kilns at 8 ppmdv and add a 1 percent monitoring allowance restricted to 22 ppmdv.
- Add an opacity limit for lime kilns equipped with ESPs based on the subpart MM NESHAP limit of 20 percent opacity with a 1 percent monitoring allowance.

The EPA is proposing the following emission limits for those affected sources for which construction, modification or reconstruction is commenced on or after May 23, 2013 to be the same as currently in subpart BB:

- Maintain the current NSPS PM limit of 0.044 gr/dscf for modified recovery furnaces.
- Maintain the current NSPS TRS limit for SDTs at 0.033 lb/ton BLS.
- Maintain the current NSPS PM limit of 0.2 lb/ton BLS for modified and new and reconstructed SDTs not associated with a new or reconstructed recovery furnace.

The emission limits for new, modified or reconstructed sources will be included in a new subpart—40 CFR part 60, subpart BBa. The PM concentration emission limits are in terms of filterable PM measured by EPA Method 5. The TRS emission limits are in terms of TRS (or TRS as H_2S for SDTs) measured by EPA Method 16, 16A, 16B or 16C.

The EPA is proposing ESP parameter monitoring requirements for recovery furnaces and lime kilns equipped with ESPs to enable affected units to show continuous compliance with the PM concentration standards at all times, including periods when the opacity monitoring allowance is used. The EPA is proposing that these sources monitor the secondary voltage and secondary current (or, alternatively, total secondary power) of each ESP collection field. These ESP parameter monitoring requirements are in addition to opacity monitoring for recovery furnaces and lime kilns equipped with ESPs alone. For recovery furnaces or lime kilns equipped with an ESP in combination with a wet scrubber system, the EPA is proposing wet scrubber parameter monitoring and ESP parameter monitoring instead of opacity monitoring. The parameter monitors will measure the wet scrubber pressure drop and scrubber liquid flow rate (or liquor supply pressure). Scrubber fan amperage monitoring is proposed as an alternative to scrubber pressure drop monitoring for certain types of scrubbers used on SDTs (e.g., dynamic scrubbers that operate near atmospheric pressure). All parameters would be measured and recorded at least once every 15 minutes and reduced to 12-hour block averages (except that ESP parameters would be reduced to a quarterly average when an opacity monitor is also used on the ESP). The EPA is proposing to specify

a 5-minute data recording frequency and 3-hour block averaging time for incinerator temperature measurements required under the NSPS.

The General Provisions in 40 CFR part 60 provide that emissions in excess of the level of the applicable emission limit during periods of SSM shall not be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard. See 40 CFR 60.8(c). The General Provisions, however, may be amended for individual subparts. Here, the EPA is proposing standards in subpart BBa that apply at all times as specified in the proposed §§ 60.282a(b) and 60.283a(b). This is discussed further in section V.A.5, and with respect to specific standards in various sections below.

The EPA recognizes that even equipment that is properly designed and maintained can sometimes fail and that such failure can sometimes cause a violation of the relevant emission standard; thus, the EPA is proposing to include an affirmative defense to civil penalties for violations of emission standards that are caused by malfunctions that meet certain criteria, as discussed in section V.A.5 below.

As part of an ongoing effort to improve compliance with the standards, the EPA is proposing to require repeat air emissions testing for filterable PM, and TRS for recovery furnaces, SDTs and lime kilns once every 60 months (5 years), as discussed in section V.B below. The EPA is also proposing initial and repeat condensable PM testing once every 60 months (5 years) for informational purposes.

To increase the ease and efficiency of data submittal and improve data accessibility, the EPA is also proposing to require mills to submit electronic copies of performance test reports to the EPA's WebFIRE database, as discussed in section V.C below.

V. Rationale for the Proposed Standards

Section 111(a)(1) requires that standards of performance for new sources reflect the—

* * * degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction, and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated.

Section 111(b)(1)(B) requires the EPA to ''at least every 8 years review and, if appropriate, revise'' performance standards unless the ''Administrator determines that such review is not appropriate in light of readily available information on the efficacy'' of the standard.

A. What is the EPA's rationale for the proposed emission limits and monitoring requirements for affected sources?

1. Digesters, Brown Stock Washers, Evaporators and Condensate Strippers

National emission standards for HAPs were promulgated for pulp and paper manufacturing emissions sources in 1998. Under the pulp and paper manufacturing NESHAP (40 CFR part 63, subpart S), NCGs from digesters, evaporators and condensate strippers are collected as part of the LVHC system for incineration control. The NCGs from brown stock washers are either collected as part of the HVLC system under the subpart S NESHAP for incineration-based control, or are subject to the subpart S NESHAP clean condensate alternative. (See 40 CFR 63.447.) The incineration control technology used for NESHAP subpart S compliance is the same as that needed to meet the TRS emission limit under the NSPS, and the incineration control technology has not changed since implementation of the NESHAP. In many respects, the NESHAP is more expansive in its coverage of NCG sources than the NSPS (e.g., the NESHAP targets HAP emissions while the NSPS targets the largest sources of TRS emissions), such that additional reductions in TRS emissions from kraft pulp mills have occurred as a result of the TRS co-control benefits of the NESHAP. Implementation of the NESHAP has expanded use of incineration-based controls, and mills are likely to have made process monitoring improvements to ensure the reliability and effectiveness of NCG collection systems and incineration-based controls as part of NESHAP implementation. While TRS control benefits from enhancements of NCG collection and control systems made for NESHAP implementation, the underlying technology that is the basis of the 5 ppmdv TRS limit and the level of control that is achieved in practice have not changed. The EPA received four datasets (TRS CEMS) for processes emitting NCGs. (See memo titled, *Review of the Continuous Emission Monitoring and Continuous Opacity Monitoring Data from the Pulp and Paper Information Collection Request Responses Pertaining to Subpart BB Sources,* in the docket.) The analysis of these datasets confirm that incineration remains the best demonstrated technology and show that 5 ppm remains the appropriate limit. Recognizing improvements to control system operations and monitoring, a maximum limit was added for TRS emissions from lime kilns and recovery furnaces. Alternatives to incineration, such as scrubbing, are less effective at the removal of TRS because only two of the four TRS compounds (H_2S and methyl mercaptan) are acidic enough to be removed with alkaline scrubbing, resulting in a removal efficiency much lower than that achieved by incineration. Therefore, the EPA is proposing to maintain the TRS limit for NCG sources.

Incinerator temperature monitoring. Subpart BB requires monitoring of incineration temperature in conjunction with the compliance option for TRS emissions from digesters, washers, evaporators and strippers to be combusted at a temperature of 1200 °F for 0.5 seconds. Subpart BB does not specify a data recording frequency or averaging time for the temperature measurements but does define excess emissions as temperature measurements below 1200 °F for a period of 5 minutes or more (excluding periods of startup and shutdown, per § 60.8(c)). In the subpart S NESHAP, incinerator temperature averaging time is not specified, but compliance testing is based on a 3-hour average (an average of three 1-hour test runs). For subpart BBa, the EPA is proposing to clarify the incineration temperature monitoring requirement by specifying a data recording frequency of at least every 5 minutes, and to create consistency between subpart S and subpart BBa by proposing a 3-hour block averaging period. Because incineration devices must warm to 1200 °F during control startup prior to firing gases containing TRS emissions (and subsequently cool to below 1200 °F during control shutdown), the EPA is proposing to allow facilities to omit 5-minute recorded temperature measurements from the 3-hour block averages when no TRS emissions are fired. This means that when the incinerator is not burning TRS (e.g., during incinerator warm-up and cool-down periods before TRS emissions are generated or when an alternative control device is used), the low temperature does not constitute a violation. The EPA requests comment on the 3-hour averaging time for incinerator temperature monitoring, especially as it relates to temperature data recording and averaging practices specified for individual mills under the subpart S NESHAP.

2. Recovery Furnaces

Recovery furnace PM. Under the current subpart BB, new, modified and reconstructed recovery furnaces are

required to meet a PM emission limit of 0.044 gr/dscf at 8 percent O_2. The PM emission limit in subpart BB is the same as the existing source emission limit for recovery furnaces under the NESHAP for chemical recovery combustion sources (40 CFR part 63, subpart MM).

For the NSPS review, the EPA reviewed data from more than 200 filterable PM stack tests, including some repeat tests, on nearly all of the recovery furnaces in the United States. Test data were reviewed for DCE and NDCE recovery furnaces using a variety of PM emission controls (ESP, ESP and wet scrubber combinations, and wet scrubbers). The PM stack test data revealed little or no distinction between DCE and NDCE recovery furnaces for PM emissions. Nearly all of the recovery furnaces tested met the current NSPS and existing source NESHAP (subpart MM) limit (0.044 gr/dscf),[1] and many met the new source NESHAP (subpart MM) limit (0.015 gr/dscf). However, some recovery furnaces equipped with a wet scrubber alone or with a wet scrubber in combination with an ESP exhibited PM emissions above 0.015 gr/dscf (but below the 0.044 gr/dscf existing source NESHAP limit subpart MM). This suggests that wet scrubbing of recovery furnace exhaust gases (either alone or in conjunction with an ESP) does not necessarily improve filterable PM removal. The review of the stack test data also shows that a limit lower than 0.015 gr/dscf has not been adequately demonstrated.

Based on our review of the stack test data and technologies used to reduce PM emissions from kraft recovery furnaces, the EPA is proposing a limit equivalent to the subpart MM NESHAP PM limit for new and reconstructed recovery furnaces (0.015 gr/dscf at 8 percent O_2) for recovery furnaces constructed or reconstructed (excluding modified units) after May 23, 2013. Because a limit of 0.015 gr/dscf has been adequately demonstrated (and is already required under the subpart MM NESHAP) for new and reconstructed recovery furnaces, the EPA does not expect any incremental costs or emissions reductions associated with adopting a NSPS limit of 0.015 gr/dscf for new or reconstructed recovery furnaces. The proposed limits establish consistency between this NSPS and other regulatory requirements.

The EPA also considered a 0.015 gr/dscf limit for existing recovery furnaces that are modified. Unlike new or reconstructed sources which trigger both the new source MACT requirements and NSPS upon construction or reconstruction, recovery furnaces can trigger the applicable NSPS provisions as a result of modification but would not trigger the new source MACT requirements because there are no modification provisions under the NESHAP (subpart MM) or the subpart A General Provisions for part 63 standards. Therefore, costs and emissions reductions associated with controlling PM emissions down to a level of 0.015 gr/dscf are different for modified units than for new or reconstructed units. The EPA evaluated the number of existing recovery furnaces with PM stack test data above 0.015 gr/dscf but below 0.044 gr/dscf, and concluded that some existing recovery furnaces that are modified could have difficulty achieving a limit of 0.015 gr/dscf if they attempt to use their existing control device to meet this limit. The EPA estimated the cost effectiveness of incremental improvements in ESP performance needed for modified recovery furnaces to meet 0.015 gr/dscf to be $27,500/ton (in 2012 dollars). The EPA also evaluated other emission limits between 0.015 gr/dscf and 0.044 gr/dscf, but because the costs associated with ESP upgrades remained the same with smaller emission reductions, the options were less cost effective. With the high costs (poor cost effectiveness) of further PM reductions and the potential for some modified recovery furnaces to have difficulty achieving 0.015 gr/dscf, the EPA is proposing to retain the 0.044 gr/dscf PM limit for existing recovery furnaces that are modified. For more information, see the memorandum, *Emissions Inventory for Kraft Pulp Mills and Costs/Impacts of the Section 111(b) Review of the Kraft Pulp Mills NSPS,* in the docket.

Recovery furnace opacity and parameter monitoring. Ongoing compliance with the subpart BB PM concentration limit is demonstrated by continuously monitoring opacity. The recovery furnace PM opacity limit under subpart BB is 35 percent opacity with a monitoring allowance that allows 6 percent of the 6-minute opacity averages during a quarter (excluding periods of startup, shutdown and malfunction and periods when the facility is not operating) to exceed 35 percent without being considered a violation.

The subpart MM NESHAP also requires continuous opacity monitoring, specifying a 20 percent opacity limit for new sources beyond which a violation occurs if more than 6 percent of the 6-minute averages exceed 20 percent opacity during the reporting period (*i.e.,* a monitoring allowance) and a 35 percent opacity limit for existing sources with a similar monitoring allowance. The subpart MM NESHAP also establishes a corrective action threshold of 10 consecutive 6-minute averages above 20 percent opacity for existing sources.

The EPA reviewed COMS data for 138 recovery furnaces to evaluate the opacity limits in the current NSPS subpart BB. The EPA also reviewed state permits and found many recovery furnaces with state permit limits of 20 percent opacity. In addition, as noted above, 20 percent opacity also represents the corrective action level for existing recovery furnaces and the new source opacity limit under the subpart MM NESHAP. The COMS data analyzed for the NSPS review show that 20 percent opacity has been adequately demonstrated and achieved in practice by both DCE and NDCE recovery furnaces using a variety of air pollution controls and including periods of startup and shutdown. Given numerous state limits of 20 percent opacity, and the fact that new and reconstructed sources must meet 20 percent under the subpart MM NESHAP, the EPA is proposing an opacity limit of 20 percent for new, modified and reconstructed units subject to subpart BBa. The EPA believes there are no incremental costs or emission reductions associated with adopting an opacity limit of 20 percent because the majority of units are already meeting this limit, without a federal requirement to do so. The EPA is unaware of any technological reason that would hinder modified units from meeting this limit but requests comment on the 20 percent opacity requirement for modified sources.

The EPA also used the COMS data to evaluate the current 6 percent monitoring allowance for opacity. Our analysis of the COMS data is included in a memorandum in the docket.[2] The COMS data show that over 90 percent of existing recovery furnaces, whether subject to the current NSPS or not, regardless of design (DCE or NDCE), and with most controls, are meeting a 20 percent opacity limit based on a 6-minute average with fewer than 2 percent of averaging periods exceeding 20 percent opacity, including periods of startup and shutdown. Therefore, the EPA has determined in subpart BBa that a 2 percent monitoring allowance for recovery furnace opacity has been

[1] Exceptions included a few stack tests that were repeated, or recovery furnaces that participate in the PM bubble compliance option under subpart MM.

[2] See memorandum titled, ''*Review of the Continuous Emission Monitoring and Continuous Opacity Monitoring Data from the Pulp and Paper Information Collection Request Responses Pertaining to Subpart BB Sources''* in the docket.

adequately demonstrated to be achieved in practice and is more representative of actual performance than the current 6 percent monitoring allowance, and thus the EPA is proposing that the monitoring allowance be 2 percent for the new NSPS subpart BBa.

The COMS data for recovery furnaces currently subject to NSPS (subpart BB) were reviewed closely to understand the impacts of startup and shutdown on opacity and to what extent a monitoring allowance should be refined to reflect opacity levels achieved in practice during startup and shutdown. High short-duration spikes in opacity were observed during some (but not all) instances of startup and shutdown at some recovery furnaces. Brief spikes were also observed during normal operation. The exact causes of these brief spikes were not documented in the COMS datasets but could have been monitor malfunctions, high level span checks, calibrations or some other cause. The COMs data showed that the maximum 6-minute opacity average at approximately half of the recovery furnaces for which COMS data are available exceeded 75 percent opacity, while the annual average of the 6-minute values for these units was no more than 16 percent opacity. The potential for brief high-level spikes in opacity can be accommodated with a 2 percent monitoring allowance without an upper limit. To ensure continuous compliance with the PM limit, the EPA is also proposing to add an ESP parameter monitoring requirement to subpart BBa that would provide another indicator of ESP performance and ensure continuous compliance with the PM limit during the reporting period. The EPA is proposing that ESP secondary voltage and secondary current (or total secondary power) be monitored and averaged over the same calendar quarter as the opacity monitoring allowance. The 2 percent opacity monitoring allowance will only be available for recovery furnaces with ESP parameters that are above the minimum limits established during the PM performance test (*i.e.,* above the minimum secondary current and secondary voltage or above minimum total secondary power). Subpart BB currently requires that the opacity allowance be calculated based on the percent of the total number of possible contiguous periods of excess emissions in a quarter. The EPA requests comment on this requirement, specifically whether a semiannual basis would be more appropriate based on the semiannual reporting requirement.

Monitoring for recovery furnaces with combined ESP/scrubber controls. Because opacity is not a suitable monitoring requirement for recovery furnaces with wet scrubber stacks, the EPA is proposing to require ESP and wet scrubber parameter monitoring for recovery furnaces equipped with an ESP followed by a wet scrubber. The ESP parameters to be monitored are secondary voltage and secondary current (or, alternatively, total secondary power), and the wet scrubber parameters are pressure drop and scrubber liquid flow rate (or scrubber liquid supply pressure). The EPA is specifying that these parameters would be measured and recorded at least once every 15 minutes and these 15-minute measurements used to calculate 12-hour block averages. The EPA requests comment on the use of parameter monitoring instead of opacity monitoring in systems that utilize both an ESP and a wet scrubber. The EPA is also requesting comment on the parameter recording frequency and averaging time for ESP parameters and wet scrubber parameters.

Cross recovery furnace TRS. Although the current NSPS limits TRS from cross recovery furnaces to 25 ppmdv at 8 percent O_2, there are currently no cross recovery furnaces subject to the NSPS, and, likewise, no TRS emissions data to analyze for cross recovery furnaces. Although there are currently no cross recovery furnaces subject to the NSPS, there are some kraft mills with co-located semichemical processes that may, in the future, have furnaces designated as NSPS cross recovery furnaces; therefore, a TRS limit for these sources should be maintained.

The cross recovery furnace TRS emission limit is higher than the straight recovery furnace TRS emission limit of 5 ppmdv at 8 percent O_2 for three technical reasons. First, the sulfur content of the semichemical liquor is higher than traditional kraft liquor. Second, the heat content of the liquor is lower because it contains less organic material than kraft liquor due to higher pulping yields. Third, the heavier sulfur loading and the lower operating temperature puts a restriction on the amount of excess O_2 available to oxidize the sulfur compounds.[3] For these reasons, the EPA is proposing to retain the current cross recovery furnace TRS emission limit of 25 ppmdv at 8 percent O_2 for the new NSPS subpart BBa.

Straight recovery furnace TRS. The current kraft NSPS limits TRS emissions from straight recovery furnaces (including both DCE and NDCE recovery furnaces) to 5 ppmdv at 8 percent O_2. The CAA 111(d) TRS emission guidelines (44 FR 29828) limit TRS to 5 ppmdv for existing NDCE recovery furnaces and 20 ppmdv for existing DCE recovery furnaces.

The EPA analyzed 1 year of TRS CEMS data for most recovery furnaces as part of the NSPS review. Our review focused on CEMS data as opposed to stack test data because relatively few TRS stack test reports (for recovery furnaces or lime kilns) were submitted in response to the EPA's 2011 ICR survey as compared to the number of available TRS CEMS datasets.

The data the EPA analyzed suggest that recovery furnace type (DCE vs. NDCE) and NSPS applicability (*i.e.,* whether or not the unit is required to meet the more stringent standard) are more relevant than control device type in distinguishing between the best performing recovery furnaces for TRS. Recovery furnaces with combined ESP/scrubber controls did not achieve lower TRS emissions than recovery furnaces with ESP systems alone, which was expected because process control factors are expected to play a role in recovery furnace TRS emissions. Annual average TRS emissions revealed that NDCE recovery furnaces can be expected to achieve lower TRS levels than DCE recovery furnaces. Because compliance is based on a 12-hour average, the EPA considered the 99th percentile of the 730 potential 12-hour blocks in a given year for each recovery furnace. Nearly all DCE furnaces had TRS emissions above 5 ppmdv (and usually below 20 ppmdv) while the majority of NDCE furnaces achieved 5 ppmdv consistently. Multi-staged BLO has been reported to reduce TRS emissions from DCE recovery furnaces; however, the trend over the past several decades has been towards installation of NDCE recovery furnaces or ''low-odor'' conversions of DCE recovery furnaces to NDCE technology. Only 41 DCE recovery furnaces remain in the industry, as compared to 108 NDCE furnaces. Many of the remaining DCE furnaces are approaching the end of their useful life and would be expected to be replaced with a new NDCE as opposed to being modified or reconstructed as an NDCE furnace. No new DCE recovery furnaces are projected for the pulp and paper industry. Given these trends, we are not proposing separate standards for new, reconstructed or modified DCE recovery furnaces. All new modified or reconstructed furnaces would have to comply with the proposed standard of 5 ppmdv.

[3] U.S. EPA. *Review of New Source Performance Standards for Kraft Pulp Mills.* EPA–450/3–83–017. September 1983.

Subpart BB contains a 1 percent monitoring allowance for recovery furnace TRS which allows 1 percent of the reported 12-hour averages in a reporting period to exceed the emission limit without being considered an excess emission. The majority of NDCEs subject to the NSPS achieved the 5 ppmdv limit consistently with 1 percent or fewer of the averaging periods in exceedance of 5 ppmdv, including periods of startup and shutdown. Periods of startup and shutdown are not excluded under subpart BBa to ensure that emissions standards apply continuously. The EPA is unaware of any technological reason that would hinder modified, reconstructed or new units from meeting the 1 percent allowance, but requests comment on such instances.

Based on analysis of the TRS CEMS data for recovery furnaces, which included periods of startup and shutdown, the EPA is proposing to retain the 5 ppmdv at 8 percent O_2 TRS emission limit for straight recovery furnaces with a conditional 1 percent monitoring allowance (see conditions discussed below) as the standard that has been adequately demonstrated. This limit would apply at all times, including during periods of startup and shutdown. The EPA did not identify a lower achievable TRS limit based on the data and, therefore, is proposing to maintain the current limit.[4] The 1 percent monitoring allowance is proposed to be retained and can be used for operational variability as well as startup and shutdown periods.

The EPA reviewed NSPS recovery furnace TRS CEMS datasets with startup and shutdown details to understand the effects of startup and shutdown on emissions. The EPA observed that periods of startup and shutdown can lead to a situation where continuously monitored TRS concentrations that are corrected to a specific percent O_2 can be grossly inflated as a result of the O_2 correction equation. As the stack gas O_2 concentration approaches ambient conditions, the denominator of the O_2 correction equation becomes very small, leading to an O_2-corrected concentration that is artificially high, such that an otherwise-compliant TRS measurement can exceed the applicable concentration because it is corrected for O_2. Periods when no BLS are fired into the recovery furnace seemed to lead to this O_2-correction artifact. Nevertheless, the EPA observed that many mills complied with the 5 ppmdv limit with a 1 percent monitoring allowance regardless of startup and shutdown periods and process variability. The highest representative TRS 12-hour averages associated with startup or shutdown periods were on the order of 30 ppmdv at 8 percent O_2 for three different CEMS. A value of 30 ppmdv also corresponds with the span setting for TRS monitors required in subpart BB. Based on these observations, the EPA is proposing to: (1) Restrict use of the 1 percent monitoring allowance to 12-hour TRS averages below an upper limit of 30 ppmdv (to ensure that the 1 percent monitoring allowance is unquestionably continuous), (2) address the O_2-correction issue by clarifying that the TRS concentration limit applies when black liquor is being fired into the recovery furnace and by adding language to the rule that would allow enforcement authorities to accept uncorrected TRS concentration values during startup and shutdown periods when stack O_2 concentration approaches ambient levels. The EPA is seeking comment on this approach. In summary, the EPA is proposing to maintain the 5 ppmdv at 8 percent O_2 TRS emission limit with a 1 percent monitoring allowance, not to exceed 30 ppmdv. Subpart BB currently requires that the TRS monitoring allowance be calculated based on the percent of the total number of possible contiguous periods of excess emissions in a quarter. The EPA requests comment on this requirement, specifically whether a semiannual basis would be more appropriate based on the semiannual reporting requirement.

3. Smelt Dissolving Tanks

SDT PM. The current NSPS PM limit for SDTs (0.2 lb/ton BLS) was established in 1976 based on use of a low-energy water scrubber or a combination demister/low-energy water scrubber. Wire mesh demister pads were determined not to be as effective as low-energy wet scrubbers in the 1986 NSPS review. The 1986 NSPS review concluded that no new control technology for SDTs had emerged since the original NSPS. The subpart MM NESHAP PM emission limit (which is a surrogate for HAP metals) for existing SDTs is equivalent to the NSPS limit of 0.2 lb/ton BLS. The subpart MM NESHAP PM limit for new and reconstructed sources with initial startup in 2001 or later is 0.12 lb/ton BLS based on the use of a high-efficiency wet scrubber. A SDT is only considered to be new or reconstructed under the subpart MM NESHAP if the associated recovery furnace is also new or reconstructed (see 40 CFR 63.860—applicability and designation of affected source).

Analysis of recent SDT PM stack test data collected with the 2011 ICR shows that nearly all SDTs have achieved 0.2 lb/ton BLS (with the exception of a few SDTs with mist eliminators and SDTs included in the PM bubble compliance option under the subpart MM NESHAP). Many SDTs have also achieved the new source MACT limit of 0.12 lb/ton BLS, without a federal requirement to do so. Therefore, the EPA considers a PM limit of 0.12 lb/ton BLS to be adequately demonstrated for new and reconstructed SDTs associated with new or reconstructed recovery furnaces. Because 0.12 lb/ton BLS is already required for new and reconstructed SDTs associated with new or reconstructed recovery furnaces under the subpart MM NESHAP, there would be no additional cost associated with applying this limit for new and reconstructed SDTs associated with new or reconstructed recovery furnaces under subpart BBa. For these reasons, the EPA is proposing to establish a limit of 0.12 lb/ton BLS for new and reconstructed SDTs associated with new or reconstructed recovery furnaces.

The EPA also considered the control options for modified, and reconstructed and new SDTs not associated with a new or reconstructed recovery furnace. These units would not be required to meet a limit of 0.12 lb/ton by the subpart MM NESHAP. The EPA estimated the cost-effectiveness to reduce PM from existing SDTs that are modified to be $6,600/ton (in 2012 dollars). This cost assumes that an owner or operator would automatically replace the existing scrubber with a new one upon modification because the scrubbers for the projected units have surpassed their useful life. However, if a new scrubber would not have been required in the absence of revised NSPS, the cost-effectiveness would increase to $15,500/ton. Similar cost effectiveness can be expected from SDTs that trigger the new source or reconstruction provisions under NSPS (independent of the recovery furnace) but do not meet the new source or reconstruction criteria under the subpart MM NESHAP (e.g., because the recovery furnace is included in the reconstruction capital cost calculation under the subpart MM NESHAP). Considering this relatively high cost effectiveness and that test data for several existing SDTs exceeds 0.12 lb/ton BLS (as they are not currently required to meet 0.12 lb/ton BLS), the EPA is proposing to retain the current PM NSPS limit of 0.2 lb/ton BLS for SDTs that are modified, and for new or

[4] See memorandum titled, ''*Review of the Continuous Emission Monitoring and Continuous Opacity Monitoring Data from the Pulp and Paper Information Collection Request Responses Pertaining to Subpart BB Sources*'' in the docket.

reconstructed SDTs that are not associated with a new or reconstructed recovery furnace.

SDT TRS. The current NSPS limits TRS emissions from SDTs to 0.033 lb as H_2S/ton BLS (the ''as H_2S'' represents how TRS is measured—we will refer to this as ''lb/ton BLS'' for the remainder of this section). This limit was raised from 0.0168 to 0.033 lb/ton BLS during the 1986 NSPS review because some SDTs with wet scrubbers could not meet the original 1976 limit of 0.0168 lb/ton BLS. Both of these limits were considered as regulatory options in the current NSPS review because the emissions guideline for existing SDTs remains at 0.0168 lb/ton BLS.[5] The EPA intends to review these emission guidelines in the future to correct for this discrepancy. The technology basis for the current NSPS limit is the use of water that is not highly contaminated with dissolved sulfides for dissolving smelt and for scrubbing. A study conducted by the National Council for Air and Stream Improvement in 2005 summarized 1990s SDT TRS emissions test data showing that the current NSPS emission limit of 0.033 lb/ton BLS could not be met consistently in a few cases, and that a lower limit of 0.0168 lb/ton BLS can be difficult to achieve for a number of existing SDTs. The inability for some units to consistently meet the more stringent limit is the result of plant-specific process variables. The analysis of approximately 100 recent TRS stack tests (most conducted in 2004 or later) collected through the EPA's 2011 ICR showed that all of the SDTs tested were able to meet the current NSPS limit of 0.033 lb/ton BLS, but some of the SDTs were repeatedly unable to achieve the former limit of 0.0168 lb/ton BLS. Thus, a limit of 0.033 lb/ton BLS appears to be adequately demonstrated, while adequate demonstration of 0.0168 lb/ton BLS is questionable. The EPA estimated the cost effectiveness of scrubber upgrades that could aid in reduction of TRS emissions from SDTs to be $45,300/ton (in 2012 dollars). The EPA has no information to estimate additional process-change costs that may be incurred in order for some mills to achieve a limit of 0.0168 lb/ton BLS. The EPA also investigated limits between 0.033 lb/ton BLS and 0.0168 lb/ton BLS, but costs for scrubber upgrades were assumed to be the same while emission reductions were less, therefore the most cost-effective option was 0.0168 lb/ton BLS. Considering the high cost of reducing the TRS limit to 0.0168 (even without process-change costs) and that emissions data show a limit of 0.033 lb/ton BLS has been adequately demonstrated, the EPA is proposing the current subpart BB TRS limit of 0.033 lb/ton BLS as the standard for new, reconstructed and modified SDTs in subpart BBa.

SDT scrubber monitoring. Monitoring of scrubber liquid supply pressure and pressure loss is specified in the current NSPS subpart BB for SDTs. For subpart BBa, the EPA is proposing that scrubber liquid flow rate and pressure drop be monitored consistent with the wet scrubber parameter monitoring requirements under subpart MM NESHAP. Scrubber liquid supply pressure is allowed as an alternative to scrubber liquid flow rate because some mills received approval to monitor scrubber liquid supply pressure (required under subpart BB) instead of scrubber liquid flow rate (required under subpart MM) following promulgation of subpart MM. Consistent with several EPA applicability determinations, the EPA is also proposing that SDT scrubber fan amperage may be used as an alternative to pressure drop measurement for SDT dynamic scrubbers operating at ambient pressure or for low-energy entrainment scrubbers on SDTs where the fan speed does not vary. The EPA is proposing a 12-hour averaging time for wet scrubber parameters recorded at least once every 15 minutes rather than retaining the current NSPS requirement to record wet scrubber parameters only once per shift. Excess emissions for SDTs would be defined in subpart BBa as any 12-hour scrubber parameter average below its respective site-specific parameter limits (established during performance testing) during times when BLS is fired. Data from the ICR indicate that facilities have difficulty meeting the minimum pressure drop requirement during startup and shutdown, as expected due to the reduced (and changing) volumetric flow of stack gases during startup and shutdown. The EPA is proposing to consider only scrubber liquid flow rate or liquid supply pressure during these periods (*i.e.,* excess emissions would include any 12-hour period when BLS is fired that the scrubber flow rate [or liquid supply pressure] does not meet the minimum parameter limits set in the initial performance test). The EPA requests comment on the SDT scrubber parameter monitoring requirements, especially the recording frequency and the averaging time for wet scrubber parameters.

4. Lime Kilns

Lime kiln PM. New, modified and reconstructed lime kilns are required under subpart BB to meet a PM emission limit of 0.066 gr/dscf for gaseous fuel-fired kilns and 0.13 gr/dscf for liquid fuel-fired kilns, both at 10 percent O_2. However, a more stringent PM limit of 0.064 gr/dscf at 10 percent O_2 is required for existing lime kilns under the subpart MM NESHAP. For new or reconstructed lime kilns, the NESHAP limit is 0.010 gr/dscf at 10 percent O_2 based on use of a high-efficiency ESP. The NESHAP does not distinguish between fuel types. Lime kilns typically burn natural gas, fuel oil, petroleum coke or a combination of these fuels. They may also burn NCGs or pulp mill byproducts such as tall oil.

Lime kiln air pollution control devices include wet scrubbers, ESPs, or a combination system including an ESP followed by a wet scrubber. Wet scrubbers were the most common control in 1986 when the NSPS was last reviewed and remain the most common lime kiln control system today. However, the number of lime kilns with ESPs or ESP/wet scrubber combinations is increasing. The ICR data indicate that, of 131 lime kilns in the U.S., 29 kilns have ESPs and 10 kilns have ESP/wet scrubber combinations.

The EPA reviewed PM stack test data from more than 250 filterable PM stack tests (including several repeat tests) on 110 lime kilns in the U.S. for purposes of reevaluating the NSPS PM limits for lime kilns. The tests included lime kilns with scrubbers, ESPs and ESP/wet scrubber combination controls and were representative of the various fuel combinations burned in lime kilns. Consistent with the NESHAP (subpart MM), the EPA found no reason to distinguish among fuel types for purposes of establishing a PM limit in subpart BBa. The EPA found that ESP and ESP/wet scrubber controls typically reduce PM to lower levels than wet scrubbers alone and that wet scrubbers would not be expected to meet the new source MACT limit of 0.010 gr/dscf at 10 percent O_2. The ESP/wet scrubber systems did not necessarily perform better on filterable PM than the ESPs alone. Several ESP and ESP/wet scrubber-controlled kilns consistently met the limit of 0.010 gr/dscf at 10 percent O_2. Therefore, the EPA is proposing a PM limit of 0.010 gr/dscf at 10 percent O_2 for new and reconstructed

[5] We note that the May 22, 1979, **Federal Register** notice (44 FR 29828) announcing availability of the final emissions guideline document for kraft pulp mills incorrectly stated that the emission guideline for SDT TRS was 0.168 lb/ton BLS, but the actual March 1979 emissions guideline document contained a guideline of 0.0168 lb/ton BLS. The emissions guidelines are used by states in setting standards for existing sources.

lime kilns as the PM limit that has been adequately demonstrated. There are no incremental cost impacts or emissions reductions associated with a limit of 0.010 gr/dscf at 10 percent O_2 for new and reconstructed lime kilns because this limit is already required under subpart MM NESHAP.

As noted above for recovery furnaces, lime kilns can trigger the NSPS provisions as a result of modification but would not trigger the new source MACT requirements because there are no modification provisions under the NESHAP (subpart MM) or the subpart A General Provisions for part 63 standards. The EPA estimated the cost effectiveness of incremental improvements in ESP performance needed for modified lime kilns to meet 0.010 gr/dscf to be $16,000/ton (in 2012 dollars). This cost-effectiveness calculation assumes that modified kilns would have installed a new ESP to meet the current NSPS PM limit (because the kilns that were projected to be modified have scrubbers that have exceeded their useful equipment life). The EPA considered PM emission limits between 0.010 gr/dscf and 0.064 gr/dscf, however, the costs for air pollution control device upgrades remained the same, therefore 0.010 gr/dscf was the most cost effective option. With the high cost (poor cost effectiveness) of further PM reductions and the potential for some modified lime kilns to be unable to achieve 0.010 gr/dscf without new controls, the EPA is proposing the existing source MACT limit of 0.064 gr/dscf at 10 percent O_2 for modified lime kilns under subpart BBa.

Lime kiln opacity and parameter monitoring. Monitoring of scrubber liquid supply pressure and pressure loss (drop) is specified in the current NSPS subpart BB for lime kilns controlled by wet scrubbers. For subpart BBa, the EPA is proposing that scrubber liquid flow rate (or liquid supply pressure) and pressure drop be monitored consistent with the wet scrubber parameter monitoring requirements under subpart MM NESHAP. Liquid supply pressure is an indicator of flow rate, therefore either can be monitored.

While subpart BB specifies wet scrubber parameter monitoring requirements for lime kilns, it does not specify any requirements for lime kilns controlled with ESPs or ESP/scrubber combinations. The EPA is proposing to add requirements to subpart BBa for monitoring lime kiln opacity and ESP operating parameters (secondary voltage and secondary current, or total secondary power) for lime kilns controlled by ESPs alone. When an opacity monitor is used, the ESP parameters would be averaged over the same calendar quarter used for determining the opacity monitoring allowance. For ESP/scrubber combination controls, the EPA is proposing to add 12-hour average ESP parameter monitoring requirements in addition to the wet scrubber parameter monitoring requirements. The EPA is proposing a 12-hour averaging time for wet scrubber parameters recorded at least once every 15 minutes (instead of the current NSPS requirement to record wet scrubber parameters only once per shift). Excess emissions for lime kilns with ESP/scrubber combination controls would be any 12-hour block ESP or scrubber parameter below its respective site-specific limit (established during the performance test) during times when lime mud is fired in the kiln. As with SDT scrubbers, the EPA is proposing to consider only scrubber liquid flow rate (or supply pressure) during periods of startup and shutdown (*i.e.,* excess emissions would include any 12-hour period when lime mud is fired that the scrubber flow rate [or liquid supply pressure] does not meet the minimum parameter limits set in the initial performance test). The EPA requests comment on the 12-hour averaging time specified for ESP and scrubber parameters, and whether a 3-hour averaging time (such as that specified under the subpart MM NESHAP for wet scrubber parameters) would be more appropriate and adequately account for periods of process variability in the absence of a monitoring allowance (such as that specified under the subpart MM NESHAP for wet scrubber parameters).

The subpart MM NESHAP requires continuous opacity monitoring for lime kilns and specifies 20 percent as the opacity level where corrective action is required for both new and existing kilns. The NESHAP (subpart MM) contains an opacity monitoring allowance where 6 percent of the 6-minute opacity averages may exceed the 20 percent limit without being considered a violation.

The EPA is proposing opacity monitoring for lime kilns with ESPs alone under subpart BBa based on our review of COMS data for 27 lime kilns that show 20 percent opacity has been adequately demonstrated under periods of normal operation and during startup and shutdown. The COMS data were used to evaluate the 6 percent monitoring allowance for lime kiln opacity under the NESHAP (subpart MM).[6] The COMS data show that the majority of existing lime kilns are meeting a 20 percent opacity limit based on a 6-minute average, with fewer than 1 percent of averaging periods exceeding 20 percent opacity, including periods of startup and shutdown. Therefore, the EPA is proposing a 1 percent monitoring allowance for opacity for ESP-controlled lime kilns. As with recovery furnaces, the potential for brief high-level spikes in ESP-controlled lime kiln opacity can be accommodated with a 1 percent monitoring allowance with no upper limit on opacity. To ensure continuous compliance with the PM limit, the EPA is proposing that the quarterly average of lime kiln ESP parameters be above the site-specific minimum parametric monitor values established during the PM performance test in order for the lime kiln opacity 1 percent monitoring allowance to be used. To be consistent with current monitoring requirements for opacity and TRS from recovery furnaces, the EPA is proposing that the monitoring allowance for lime kiln opacity be calculated based on the percent of the total number of possible contiguous periods of excess emissions in a quarter. The EPA requests comment on this requirement, specifically whether a semiannual basis would be more appropriate based on the semiannual reporting requirement of subpart BB.

Lime kiln TRS. Lime kiln TRS emissions are limited by the current NSPS to 8 ppmdv at 10 percent O_2. The EPA analyzed 1 year of TRS CEMS data for most lime kilns as part of our NSPS review. The EPA found that that there is no clear distinction in lime kiln TRS emissions for the different control devices that are used (wet scrubbers, ESPs or ESP/wet scrubber combinations). This affirms that process factors (e.g., mud washing, use of uncontaminated scrubber water and NCG burning) are likely to have a greater effect on lime kiln TRS emissions than control device type. Use of caustic (alkaline) scrubbing liquid in the lime kiln scrubber may reduce emissions of two of the four TRS compounds (H_2S and methyl mercaptan, which are acidic compounds) but would not reduce emissions of dimethyl sulfide and dimethyl disulfide, which are neutral compounds. The EPA considered whether NCG burning or white liquor scrubbing of NCG streams prior to the lime kiln significantly alters lime kiln TRS emissions and found no conclusive evidence of increased lime kiln TRS emissions due to NCG burning

[6] See memorandum titled, ''*Review of the Continuous Emission Monitoring and Continuous Opacity Monitoring Data from the Pulp and Paper Information Collection Request Responses Pertaining to Subpart BB Sources*'' in the docket.

or significantly decreased lime kiln TRS due to NCG pre-scrubbing.

The CEMS data reviewed show that, while most existing lime kilns (*i.e.,* those kilns that are not subject to the NSPS) achieved the 8 ppmdv NSPS limit on an annual average basis, several existing kilns controlled by wet scrubbers and two existing kilns with ESPs exceeded 8 ppmdv for a relatively high percentage of 12-hour averaging periods. The TRS NSPS for lime kilns is more stringent that the emissions guideline for existing kilns that have not triggered NSPS, therefore a more focused review of the 8 ppmdv limit on only those kilns that are required to meet that limit under the NSPS was performed.

All of the lime kilns subject to NSPS met the 8 ppmdv limit on an annual average basis, regardless of control device type; however, compliance is not based on an annual average. In a given year, 730 12-hour average values are generated by TRS CEMS for comparison to the emission limit. The 99th percentile of the 12-hour averages for most NSPS kilns was near to or below 8 ppmdv limit, and most NSPS kilns had less than 1 percent of averaging periods that exceeded the 12-hour average 8 ppmdv limit, including periods of startup and shutdown. The data did not show that a lower TRS limit is consistently achieved in practice, therefore the EPA is proposing to maintain the TRS emission limit of 8 ppmdv at 10 percent O_2. The EPA is also proposing a 1 percent monitoring allowance to account for process-related factors that lead to variability in lime kiln TRS emissions.

The EPA also reviewed the TRS CEMS data to determine the impact of continuously applying the 8 ppmdv limit to startup and shutdown periods in addition to normal operations. Twenty of 31 TRS CEMS datasets with startup and shutdown details contained no exceedances of the 12-hour 8 ppmdv limit, suggesting that compliance with the 8 ppmdv limit during startup and shutdown has been demonstrated at many mills. The maximum number of 12-hour averages where the 8 ppmdv limit was exceeded by any mill was eight. Eight of 730 possible 12-hour blocks in a year corresponds to 1.1 percent of possible averaging periods (8/730 = 1.1 percent). An upper limit 12-hour average of 22 ppmdv appears to adequately represent the TRS concentration that has been achieved in practice considering process variability and startup and shutdown events. To be consistent with current monitoring requirements for opacity and TRS from recovery furnaces, the EPA is proposing that the monitoring allowance for lime kiln TRS be calculated based on the percent of the total number of possible contiguous periods of excess emissions in a quarter. The EPA requests comment on this requirement, specifically whether a semiannual basis would be more appropriate based on the semiannual reporting requirement of subpart BBa.

Considering the findings described above, the EPA proposes for subpart BBa that the current 8 ppmdv limit with a 1 percent monitoring allowance has been adequately demonstrated during normal operations and startup and shutdown. To ensure that the standard with a monitoring allowance is a continuous standard, the EPA is proposing to restrict use of the 1 percent monitoring allowance with an upper limit of 22 ppmdv. Mills would not violate the standard if they exceed 8 ppmdv with their TRS monitors for no more than 1 percent of the averaging periods (up to 7 averaging periods per year) as long as the 12-hour average emissions for each of those periods does not exceed 22 ppmdv. As discussed above, the EPA is proposing a provision where TRS concentrations uncorrected for O_2 may be considered to avoid the situation were near-ambient stack oxygen levels that could occur during startup and shutdown lead to seemingly non-compliant TRS concentrations by virtue of the O_2 correction equation.

5. Periods of Startup, Shutdown and Malfunction

Periods of startup or shutdown. In reviewing the standards in this rule, and in proposing the standards in the new subpart BBa, the EPA has taken into account startup and shutdown periods and, for the reasons explained below, has not proposed alternate standards for those periods. Instead, the EPA has proposed standards that apply at all times, including startup and shutdown periods. Continuous opacity and TRS emissions monitoring are used to indicate ongoing compliance with the PM and TRS emission limits. In developing proposed standards for subpart BBa, the EPA reviewed numerous continuous opacity and TRS monitoring datasets that included periods of startup and shutdown, and the affected units will be able to comply with the proposed standards at all times. The EPA is also proposing a provision that would allow enforcement authorities to consider an alternative compliance calculation that allows TRS emissions to be uncorrected for O_2 during startup and shutdown periods because the O_2 correction equation could cause an otherwise-compliant TRS measurement to exceed the applicable concentration emission limit when O_2 levels in the stack approach ambient conditions.

Incinerator temperature, ESP and wet scrubber parameter monitoring are also required under the proposed NSPS subpart BBa. Parameter limits apply at all times, including during startup and shutdown. Incinerator temperature is to be recorded at least once every 5 minutes. Wet scrubber and ESP operating parameters are to be recorded at least once every 15 minutes. In addition to specifying a 3-hour block averaging time for incinerator temperature monitors, the EPA is proposing to define excess emissions as periods where the minimum temperature of 1200 °F is not met when TRS emissions are not fired (*i.e.,* periods when an incinerator is not burning TRS such as during warm-up and cool-down or when an alternative control device is used, would not be considered violations). The ESP and scrubber parameters are to be averaged over a 12-hour block (except for ESPs with COMS, which would have ESP parameters averaged quarterly). To address the need for ESPs to warm to a specified temperature (typically above 200 °F) before full power is applied to the transformer-rectifier set, the EPA is proposing to define excess emissions as ESP parameter measurements below the minimum requirements during times when BLS or lime mud is fired (as applicable) based on several responses to the ICR indicating that mills with ESP minimum temperature requirements bring the ESP online before introducing BLS or lime mud into the recovery furnace or lime kiln, respectively. The EPA is also proposing language that would allow affected units to use wet scrubber liquid flow rate (or liquid supply pressure) to demonstrate compliance during periods of startup and shutdown because pressure drop is difficult to achieve during these periods.

The EPA solicits comment on whether the proposal to apply these standards at all times is practicable and achievable. In particular, the EPA notes that the General Provisions in part 60 require facilities to keep records of the occurrence and duration of any startup, shutdown or malfunction (40 CFR 60.7(b)) and either report to the EPA any period of excess emissions that occurs during periods of startup, shutdown or malfunction (40 CFR 60.7(c)(2)) or report that no excess emissions occurred (40 CFR 60.7(c)(4)). In light of this requirement, comments that contend that sources cannot meet the proposed standard during startup and shutdown

periods should include data and other specifics supporting this claim.

Periods of malfunction. Periods of startup, normal operations and shutdown are all predictable and routine aspects of a source's operations. However, by contrast, ''malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.'' (40 CFR 60.2). The EPA has determined that section 111 does not require that emissions that occur during periods of malfunction be factored into development of CAA section 111 standards. Nothing in CAA section 111 or in case law requires that the EPA anticipate and account for the innumerable types of potential malfunction events in setting emission standards. Section 111 of the CAA provides that the EPA set standards of performance which reflect the degree of emission limitation achievable through ''the application of the best system of emission reduction'' that the EPA determines is adequately demonstrated. Applying the concept of ''the application of the best system of emission reduction'' to periods during which a source is malfunctioning presents difficulties. The ''application of the best system of emission reduction'' is more appropriately understood to include operating units in such a way as to avoid malfunctions.

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 (D.C. 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 (D.C. 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 ''source that uses the best system of emission reduction'' 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 111 and is a reasonable interpretation of the statute.

In the event that a source fails to comply with the applicable CAA section 111 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 avoid malfunctions and to minimize emissions during malfunction periods, including preventative and corrective actions, as well as root cause analyses to determine, correct and eliminate the primary causes of the malfunction and the violation resulting from the malfunction event at issue. The EPA would also consider whether the source's failure to comply with the CAA section 111 standard was, in fact, ''sudden, infrequent, not reasonably preventable'' and was not instead ''caused in part by poor maintenance or careless operation.'' See 40 CFR 60.2 (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: Response to Petition for Rulemaking; Findings of Excess Emissions During Periods of Startup, Shutdown, and Malfunction; Proposed rule, 78 FR 12460 (Feb. 22, 2013); 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 an affirmative defense to civil penalties for violations of emission standards that are caused by malfunctions. (See 40 CFR 60.281a defining ''affirmative defense'' to mean, 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 are also 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 40 CFR 60.285a. See 40 CFR 22.24. The criteria are designed in part to ensure that the affirmative defense is available only where the event that causes a violation of the emission standard meets the narrow definition of malfunction in 40 CFR 60.2 (sudden, infrequent, not reasonably 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 violation ''[w]as caused by a sudden, infrequent, and unavoidable failure of air pollution control, 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 40 CFR 60.11(d) 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 a violation occurred'' and that ''[a]ll possible steps were taken to minimize the impact of the violation 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 22.77).

The EPA included an affirmative defense in the proposed rule in an attempt to balance a tension, inherent in many types of air regulation, to ensure adequate compliance while simultaneously recognizing that despite the most diligent of efforts, emission standards may be violated under circumstances beyond the control of the source. The EPA must establish emission standards that ''limit the quantity, rate, or concentration of emissions of air pollutants on a continuous basis.'' 42 U.S.C. 7602(k) (defining ''emission limitation'' and ''emission standard''). *See generally, Sierra Club* v. *EPA,* 551 F.3d 1019, 1021 (D.C. Cir. 2008) Thus, the EPA is required to ensure that section 111 emissions standards are continuous. The affirmative defense for malfunction

events meets this requirement by ensuring that even where there is a malfunction, the emission standard is still enforceable through injunctive relief. The United States Court of Appeals for the Fifth Circuit recently upheld the EPA's view that an affirmative defense provision is consistent with section 113(e) of the CAA. *Luminant Generation Co. LLC* v. *United States EPA,* 2013 U.S. App. LEXIS 6397 (5th Cir. Mar. 25, 2013) (upholding the EPA's approval of affirmative defense provisions in a CAA State Implementation Plan). While ''continuous'' standards, on the one hand, are required, there is also case law indicating that in many situations it is appropriate for the EPA to account for the practical realities of technology. For example, in *Essex Chemical* v. *Ruckelshaus,* 486 F.2d 427, 433 (D.C. Cir. 1973), the D.C. Circuit acknowledged that in setting standards under CAA section 111 ''variant provisions'' such as provisions allowing for upsets during startup, shutdown and equipment malfunction ''appear necessary to preserve the reasonableness of the standards as a whole and that the record does not support the 'never to be exceeded' standard currently in force.'' See also, *Portland Cement Association* v. *Ruckelshaus,* 486 F.2d 375 (D.C. Cir. 1973). Though intervening case law such as *Sierra Club* v. *EPA* and the CAA 1977 amendments call into question the relevance of these cases today, they support the EPA's view that a system that incorporates some level of flexibility is reasonable. The affirmative defense simply provides for a defense to civil penalties for violations that are proven to be beyond the control of the source. By incorporating an affirmative defense, the EPA has formalized its approach to malfunctions. In a CWA setting, the Ninth Circuit required this type of formalized approach when regulating ''upsets beyond the control of the permit holder.'' *Marathon Oil Co.* v. *EPA,* 564 F.2d 1253, 1272–73 (9th Cir. 1977). *See also, Mont. Sulphur & Chem. Co.* v. *United States EPA,* 666 F.3d. 1174 (9th Cir. 2012) (rejecting industry argument that reliance on the affirmative defense was not adequate). *But see, Weyerhaeuser Co.* v. *Costle,* 590 F.2d 1011, 1057–58 (D.C. Cir. 1978) (holding that an informal approach is adequate). The affirmative defense provisions give the EPA the flexibility to both ensure that its emission standards are ''continuous'' as required by 42 U.S.C. 7602(k), and account for unplanned upsets and thus support the reasonableness of the standard as a whole.

B. What testing requirements is the EPA proposing?

As part of an ongoing effort to improve compliance with federal air emission regulations, the EPA reviewed the current testing requirements of subpart BB and is proposing the testing requirements for subpart BBa be different from subpart BB in the following ways. First, the EPA is proposing to require repeat air emissions performance testing once every 5 years for facilities subject to NSPS subpart BBa. Repeat performance tests are already required by permitting authorities for some facilities. Further, the EPA believes that requiring periodic repeat performance tests will help to ensure that control systems are properly maintained over time. Today's proposal would require repeat air emissions testing for filterable PM, condensable PM and TRS once every 60 months (5 years) for recovery furnaces, SDTs and lime kilns. The EPA added condensable PM to the list of pollutants to test to develop a broader understanding of condensable PM emissions from pulp and paper combustion sources and to determine mechanisms for reducing condensable PM, as discussed in section IV.B above.

Second, the EPA is proposing to include Method 16C as another alternative to Method 16 for measuring emissions of TRS from sources subject to the TRS standards in subpart BBa. Method 16C was not available at the time of the original NSPS and 1986 NSPS review. The method was promulgated on July 30, 2012 (77 FR 44488).

C. What notification, reporting and recordkeeping requirements is the EPA proposing?

The existing subpart BB requires mills to keep records of TRS and opacity monitoring data along with scrubber and incinerator operating parameter data. The reporting requirements in the existing subpart BB include reports of performance tests and excess emissions. The frequency of reporting is semiannually as specified in 40 CFR 60.7(c).

Reporting and recordkeeping requirements are being proposed as separate sections for subpart BBa. Under this proposal, owners/operators subject to subpart BBa would be required to keep records of all TRS and opacity monitoring data; all scrubber, incinerator and ESP operating parameter data; excess emissions; and malfunctions. A facility would be required to report all exceedances of the standard, including exceedances that are the result of a malfunction. The proposed malfunction recordkeeping requirements would provide pulp and paper companies with some of the information required to support the assertion of an affirmative defense in the event of a violation due to malfunction.

Under this proposal, owners/operators would be required to report all performance tests, results and excess emissions. The frequency of reporting for subpart BBa would be semiannually, the same as for subpart BB, and consistent with the NESHAP requirement. Further, we are proposing a malfunction report to provide information on each type of malfunction which occurred during the reporting period and which caused or may have caused an exceedance of an emission limit.

The proposed subpart BBa also includes a requirement for electronic reporting of performance test data, as discussed below.

Electronic Reporting Tool. In this proposal, the EPA is describing a process to increase the ease and efficiency of performance test data submittal while improving data accessibility. Specifically, the EPA is proposing that owners and operators of kraft pulp mills submit electronic copies of required performance test and performance evaluation reports by direct computer-to-computer electronic transfer using EPA-provided software. The direct computer-to-computer electronic transfer is accomplished through the EPA's CDX using the CEDRI. The Central Data Exchange is the EPA's portal for submittal of electronic data. The EPA-provided software is called the ERT which is used to generate electronic reports of performance tests and evaluations. The ERT generates an electronic report package which will be submitted using the CEDRI. The submitted report package will be stored in the CDX archive (the official copy of record) and the EPA's public database called WebFIRE. All stakeholders will have access to all reports and data in WebFIRE and accessing these reports and data will be very straightforward and easy (see the WebFIRE Report Search and Retrieval link at *http://cfpub.epa.gov/webfire/index.cfm?action=fire.searchERTSubmission*). A description and instructions for use of the ERT can be found at *http://www.epa.gov/ttn/chief/ert/index.html* and CEDRI can be accessed through the CDX Web site (*www.epa.gov/cdx*). A description of the WebFIRE database is available at: *http://cfpub.epa.gov/oarweb/index.cfm?action=fire.main.*

The proposal to submit performance test data electronically to the EPA applies only to those performance tests conducted using test methods that are supported by the ERT. The ERT supports 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/index.html.*

We believe that industry would benefit from this proposed approach to electronic data submittal. Specifically, by using this approach, industry will save time in the performance test submittal process. Additionally, the standardized format that the ERT uses allows sources to create a more complete test report resulting in less time spent on data backfilling if a source failed to include all data elements required to be submitted. Also through this proposal, industry may only need to submit a report once to meet the requirements of the applicable subpart because stakeholders can readily access these reports from the WebFIRE database. This also benefits industry by cutting back on recordkeeping costs as the performance test reports that are submitted to the EPA using CEDRI are no longer required to be retained in hard copy, thereby, reducing staff time needed to coordinate these records.

Since the EPA will already have performance test data in hand, another benefit to industry is that fewer or less substantial data collection requests in conjunction with prospective required residual risk assessments or technology reviews will be needed. This would result in a decrease in staff time needed to respond to data collection requests.

State, local and tribal air pollution control agencies may also benefit from having electronic versions of the reports they are now receiving. For example, these agencies may be able to conduct a more streamlined and accurate review of electronic data submitted to them. For example, the ERT would allow for an electronic review process, rather than a manual data assessment, therefore, making review and evaluation of the source provided data and calculations easier and more efficient. In addition, the public stands to benefit from electronic reporting of emissions data because the electronic data will be easier for the public to access. How the air emissions data are collected, accessed and reviewed will be more transparent for all stakeholders.

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. The ERT clearly states what testing information would be required by the test method and has the ability to house additional data elements that might be required by a delegated authority.

In addition the EPA must have performance test data to conduct effective reviews of CAA section 111 standards, as well as for many other purposes including compliance determinations, emission factor development and annual emission 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. 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.

A common complaint heard from industry and regulators is that emission 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 emission factors, when updated, represent the most current range of operational practices. 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.

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 emission inventories and air quality regulations.

D. Other Miscellaneous Differences Between the Proposed Subpart BBa and the Current Subpart BB

The following lists additional, minor differences between the current subpart BB NSPS and the proposed rule BBa. This list includes proposed rule differences that address editorial and other corrections.

(1) § 60.17 incorporates by reference ANSI/ASME PTC 19.10–1981;

(2) Alphabetized definitions and removed paragraph numbers in § 60.281a;

(3) Definitions for affirmative defense, condensable PM, filterable PM, and monitoring system malfunction in § 60.281a;

(4) Text makes clear that the PM emission limits in § 60.282a and the Method 5 PM emission test in § 60.285a actually refer to filterable PM, to avoid confusion with the inclusion of Method 202 condensable PM testing; and

(5) Referenced the specific appendices in parts 51 and 60 for EPA test methods cited in § 60.285a.

(6) Used ''must'' instead of ''shall'' throughout subpart BBa consistent with plain language guidance.

(7) The span of O_2 monitoring systems is 21 percent instead of 25 percent in § 60.284a so air can be used instead of a calibration gas in span checks.

(8) Text makes clear that only ''one of'' the conditions in § 60.283a(1) needs to be met.

(9) Mentioned performance specifications 1 and 5 in § 60.284a(a)(1) and (2) in addition to § 60.284a(f).

VI. Summary of Cost, Environmental, Energy, and Economic Impacts of These Proposed Standards

In setting standards, the CAA requires us to consider alternative emission control approaches, taking into account the estimated costs as well as impacts on energy, solid waste and other effects.

A. What are the impacts for new, modified, and reconstructed emission units at kraft pulp mills?

The EPA is presenting estimates of the impacts for the proposed 40 CFR part 60, subpart BBa that revises the performance standards for new, modified, or reconstructed emission units at kraft pulp mills. The impacts presented in this section are expressed as incremental differences between the impacts of emission units complying with the proposed subpart BBa and the baseline (NSPS subpart BB or NESHAP subpart MM) requirements for these sources. The impacts are presented for emission units at kraft pulp mills that commence construction, reconstruction or modification over the 5 years following proposal of the revised NSPS (subpart BBa). Costs are based on the third quarter of 2012. The analyses and the documents referenced below can be found in the docket for this proposed rulemaking.

In order to determine the incremental impacts of this proposed rule, the EPA first projected the number of new, modified, or reconstructed emission units that would become subject to

regulation during the 5-year period after proposal of subpart BBa. Extrapolating from the number of recovery furnaces, SDTs and lime kilns that have been constructed, modified, or reconstructed during the 10-year period preceding the base-year 2009 pulp and paper ICR conducted in 2011 (1999 to 2009), an estimated 19 emission units (8 recovery furnaces, 8 SDTs and 3 lime kilns) at 10 kraft pulp mills are expected to be constructed, modified, or reconstructed in the 5-year period after proposal of subpart BBa (2013 to 2018). For further detail on the methodology of these calculations, see the memorandum, *Projections of the Number of New, Modified, and Reconstructed Emission Units for the Kraft Pulp Mill NSPS Review,* in the docket for this proposed rulemaking.

The proposed subpart BBa emission limits reflect the performance of control technologies currently in use by the industry. The proposed NSPS PM and TRS limits under subpart BBa for modified emission units and the proposed NSPS TRS limits under subpart BBa for new and reconstructed emission units are the same as the subpart BB limits. Consequently, there are no emission control costs or emissions reductions associated with these proposed requirements. The proposed NSPS PM limits under subpart BBa for new and reconstructed emission units are the same as the PM limits under the NESHAP (subpart MM) for new sources. As a result, the air pollution control systems that these sources would install to meet the NESHAP (subpart MM) limits could be used to meet the proposed NSPS PM limits, with no additional emission control cost or emissions reduction.

There are differences in the testing, monitoring, reporting and recordkeeping requirements under subpart BB and the proposed subpart BBa that would result in increased costs. The additional testing requirements for recovery furnaces, SDTs and lime kilns under subpart BBa include initial testing for condensable PM and 5-year repeat testing for filterable PM, condensable PM and TRS, and sources would need to submit documentation of these additional tests. While the continuous monitoring requirements for opacity and wet scrubbers in subpart BBa are already incurred at baseline (resulting in zero incremental cost), subpart BBa would restrict use of the TRS monitoring allowances to an upper ppmdv limit which would have an associated cost. Additional monitoring costs would also be incurred for ESP parameter monitoring. The recordkeeping and reporting requirements for subpart BBa would include records of the occurrence and duration of startup and shutdown and the inclusion of records of a failure to meet a standard in otherwise required periodic reports.

The EPA estimates that the total increase in nationwide annual cost associated with this proposed rule is $389,900 for the emission units projected to be constructed, modified, or reconstructed between 2013 and 2018. The methodology is detailed in the memorandum, *Emissions Inventory for Kraft Pulp Mills and Costs/Impacts of the Section 111(b) Review of the Kraft Pulp Mills NSPS,* in the docket for this proposed rulemaking.

B. What are the secondary impacts for new, modified, and reconstructed emission units at kraft pulp mills?

Indirect or secondary air emissions impacts are impacts that would result from the increased electricity usage associated with the operation of control devices (*i.e.,* increased secondary emissions of criteria pollutants from power plants). Energy impacts consist of the electricity and steam needed to operate control devices and other equipment that would be required under this proposed rule. No additional control devices or other equipment are expected to be needed to meet the proposed NSPS requirements beyond those that would already be installed to meet the baseline requirements for these emission units. Thus, no secondary impacts are expected.

C. What are the economic impacts for new, modified, and reconstructed emission units at kraft pulp mills?

The EPA performed an economic impact analysis that estimates changes in prices and output for emission units nationally using the annual compliance costs estimated for this proposed rule. All estimates are for the fifth year after proposal since this is the year for which the compliance cost impacts are estimated. The proposed action is not expected to induce measurable changes in the average national price and production of pulp and paper products. Hence, the overall economic impact of this NSPS should be minimal on the affected industries and their consumers. For more information, please refer to the memorandum, *Economic Impact Analysis for the Section 111(b) Review of the Kraft Pulp Mills New Source Performance Standards Subpart BB,* in the docket for this proposed rulemaking.

VII. Statutory and Executive Order Reviews

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

This action is not a ''significant regulatory action'' under the terms of Executive Order 12866 (58 FR 51735, October 4, 1993) and is therefore not subject to review under Executive Orders 12866 and 13563 (76 FR 3821, January 21, 2011).

The EPA prepared an analysis of the potential costs and benefits associated with this action. This analysis is contained in the memorandum, *Economic Impact Analysis for the Section 111(b) Review of the Kraft Pulp Mills New Source Performance Standards Subpart BB.* A copy of the analysis is available 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 Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* The ICR document prepared by the EPA has been assigned the EPA ICR number 2485.01.

These proposed revisions to the NSPS for kraft pulp mills for future affected sources include different emission limits and continuous monitoring requirements and additional performance testing from what is in subpart BB. The additional performance testing requirements for recovery furnaces, SDTs, and lime kilns include initial testing for condensable PM, and 5-year repeat testing for filterable PM, condensable PM and TRS. The proposed monitoring requirements include a different opacity limit and monitoring allowance for recovery furnaces, restriction of the monitoring allowances for TRS to an upper concentration limit, continuous opacity monitoring for lime kilns equipped with ESPs and continuous ESP parameter monitoring for recovery furnaces and lime kilns equipped with ESPs. These testing and monitoring requirements are in addition to the initial performance testing and continuous monitoring requirements described in section III.B of this preamble which are required under the current subpart BB.

The recordkeeping and reporting requirements associated with these testing and monitoring provisions 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 the EPA policies set forth in 40 CFR part 2, subpart B.

When a malfunction occurs, sources must report it according to the applicable reporting requirements of 40 CFR part 60, subpart BBa. An affirmative defense to civil penalties for violations of emission standard that are caused by malfunctions is available to a source if it can demonstrate that certain criteria and requirements are satisfied. In addition, the source must meet certain notification and reporting requirements. For example, the source must prepare a written root cause analysis and submit a written report to the Administrator documenting that it has met the conditions and requirements for assertion of the affirmative defense.

For this rule, the EPA is considering the affirmative defense in its 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 the ICR that shows 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, including the root cause analysis associated with a single incident totals approximately $3,375, 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 a violation of an emission 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, the EPA 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 violation events reported by source operators, only a small number would be expected to result from a malfunction (based on the definition of a malfunction in 40 CFR 60.2), and only a subset of violations caused by malfunctions would result in the source choosing to assert the affirmative defense. Thus, the EPA believes 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, the EPA estimates no more than two such occurrences for all sources subject to 40 CFR part 60, subpart BBa over the 3-year period covered by the ICR. The EPA expects to gather information on such events in the future and will revise this estimate as better information becomes available.

The annual burden for this information collection averaged over the first 3 years of this ICR is estimated to total 1,905 labor-hours per year at a cost of $186,324/yr. The annualized capital costs are estimated at $411,300 per year. The annual O&M costs are $155,880. The total annualized capital and O&M costs are $567,180 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.

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–2012–0640. 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 May 23, 2013, a comment to OMB is best assured of having its full effect if OMB receives it by June 24, 2013. 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 Regulatory Flexibility Act 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 this rule will not have a significant economic impact on a substantial number of small entities (SISNOSE). Small entities include small businesses, small organizations and small governmental jurisdictions.

For purposes of assessing the impacts of this rule on small entities, small entity is defined as: (1) A small business as defined by the Small Business Administration'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.

After considering the economic impacts of this proposed rule on small entities, I certify that this action will not have a SISNOSE. This certification is based on the economic impact of this action to all affected small entities. Only two small entities may be impacted by this proposed rule. The EPA estimates that all affected small entities will have annualized costs of less than 0.1 percent of their sales. The EPA concludes that there is no SISNOSE for this rule.

For more information on the small entity impacts associated with this proposed rule, please refer to the Economic Impact and Small Business Analyses in the public docket. Although this proposed rule would not have a SISNOSE, the EPA nonetheless tried to reduce the impact of this proposed rule on small entities. When developing these proposed standards, the EPA took special steps to ensure that the burdens imposed on small entities were minimal. The EPA conducted several meetings with the industry trade association to discuss regulatory options and the corresponding burden on industry, such as recordkeeping and reporting, and impacts on existing sources that are modified. The EPA continues 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 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 to the private sector in any 1 year. This proposed rule is not expected to impact state, local or tribal governments. The nationwide annualized cost of this proposed rule for affected industrial sources is estimated to be $389,900/yr. 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 action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states or on the distribution of power and responsibilities among the various levels of government, 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. 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 action does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). It will not have substantial direct effects 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. This proposed rule imposes requirements on owners and operators of kraft pulp mills and not tribal governments. The EPA does not know of any kraft pulp mills owned or operated by Indian tribal governments. However, if there are any, the effect of this proposed rule on communities of tribal governments would not be unique or disproportionate to the effect on other communities. Thus, Executive Order 13175 does not apply to this action. The EPA specifically solicits additional comment on this proposed rule from tribal officials.

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

The EPA interprets Executive Order 13045 (62 F.R. 19885, April 22, 1997) as applying to those regulatory actions that concern health or safety risks, such that the analysis required under section 5–501 of the Executive Order has the potential to influence the regulation. This action is not subject to Executive Order 13045 because it is based solely on technology performance.

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 in Executive Order 13211 (66 FR 28355 (May 22, 2001)), because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act

Section 12(d) of the NTTAA of 1995, Public Law 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, 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 one VCS in this proposed rule. The 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 40 CFR part 60, 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 EPA has identified two other VCS as being potentially applicable to this proposed rule. The first, ASTM D7520–09, is an alternative to Method 9 (see part 60, appendix A–4 for a description of Method 9). This rule currently provides the use of continuous opacity monitors as an alternate to Method 9; therefore the EPA has decided not to use ASTM D7520–09 in this rulemaking. The second, ANSI/ASME PTC 19–10–1981–Part 10, is an alternative to Method 16A (see part 60, appendix A–6 for a description of Method 16A). The EPA is incorporating this VCS as an alternative to Method 3B above, but is not incorporating it as an alternative to Method 16A because it is an alternate for only the manual portion and not the instrumental portion of Method 16A. Given that sources are already allowed four EPA methods for measuring TRS (Methods 16, 16A, 16B and 16C), and that the VCS is only partially applicable, the EPA has decided not to use this VCS in this rulemaking. See the docket for this proposed rule for the reasons for these determinations.

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.

The EPA has concluded that it is not practicable to determine whether there would be disproportionately high and adverse human health or environmental effects on minority, low income or indigenous populations from this proposed rule as it is unknown where new facilities will be located and the EPA does not expect new facilities to be built. However, the agency has reviewed the areas surrounding all existing kraft pulp mills to determine if there is an overrepresentation of minority, low income or indigenous populations near the sources such that they may currently face disproportionate risks from pollutants.

To gain a better understanding of the source category and near source populations, the EPA conducted a demographic analysis on the source

category for this rulemaking. This analysis only gives some indication of the prevalence of subpopulations that may be exposed to air pollution from the sources and, therefore, would be those populations that may be expected to benefit most from this regulation; it does not identify the demographic characteristics of the most highly affected individuals or communities, nor does it quantify the level of risk faced by those individuals or communities. The data show that most demographic categories were below or within 20 percent of their corresponding national averages except for the African American population percentage within 3 miles of any source potentially affected by this rulemaking. This segment of the population exceeds the national average by 5 percentage points (18 percent vs. 13 percent), or plus 38 percent. There is no indication that this segment of the population faces an unacceptable risk from emissions from these sources. However, the additional information that will be collected from the increase in testing requirements is expected to better inform the agency of the emissions associated with this source category. This will ensure better compliance with this rule, and will result in this rule being more protective of human health. The demographic analysis results and the details concerning their development are presented in the September 18, 2012, memorandum titled, *Environmental Justice Review: Kraft Pulp Mills NSPS,* a copy of which is available in the docket for this action (EPA–HQ–OAR–2012–0640).

List of Subjects in 40 CFR Part 60

Environmental protection, Administrative practice and procedure, Air pollution control, Incorporation by reference, Intergovernmental relations, Reporting and recordkeeping requirements.

Dated: May 14, 2013.

Bob Perciasepe,

Acting EPA Administrator.

40 CFR part 60 is proposed to be amended as follows:

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

■ 1. The authority citation for part 60 continues to read as follows:

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

Subpart A—[Amended]

■ 2. Section 60.17 is amended by revising paragraph (h)(4) to read as follows:

§ 60.17 Incorporations by reference.

* * * * *

(h) * * *

(4) ANSI/ASME PTC 19.10–1981, Flue and Exhaust Gas Analyses [Part 10, Instruments and Apparatus], (Issued August 31, 1981), IBR approved for § 60.56c(b), § 60.63(f), § 60.104a(d), (h), (i), and (j), § 60.105a(d), (f), and (g), § 60.106(e), § 60.106a(a), § 60.107a(a), (c), and (e), § 60.285a(f), tables 1 and 3 of subpart EEEE, tables 2 and 4 of subpart FFFF, table 2 of subpart JJJJ, § 60.2145(s), § 60.2145(t), § 60.2710(s), § 60.2710(t), § 60.2710(w), § 60.2730(q), § 60.4415(a), § 60.4900(b), § 60.5220(b), tables 1 and 2 to subpart LLLL, tables 2 and 3 to subpart MMMM, § 60.5406(c), and § 60.5413(b).

* * * * *

■ 3. Section 60.280 is amended by revising paragraph (b) to read as follows:

§ 60.280 Applicability and designation of affected facility.

* * * * *

(b) Except as noted in § 60.283(a)(1)(iv), any facility under paragraph (a) of this section that commences construction, reconstruction, or modification after September 24, 1976, and on or before May 23, 2013 is subject to the requirements of this subpart. Any facility under paragraph (a) of this section that commences construction, reconstruction, or modification after May 23, 2013 is subject to the requirements of subpart BBa of this part.

■ 4. Add subpart BBa to read as follows:

Subpart BBa—Standards of Performance for Kraft Pulp Mill Affected Sources for Which Construction, Reconstruction, or Modification Commenced After May 23, 2013

Sec.

Subpart BBa—Standards of Performance for Kraft Pulp Mill Affected Sources for Which Construction, Reconstruction, or Modification Commenced After May 23, 2013

§ 60.280a Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in kraft pulp mills: Digester system, brown stock washer system, multiple-effect evaporator system, recovery furnace, smelt dissolving tank, lime kiln, and condensate stripper system. In pulp mills where kraft pulping is combined with neutral sulfite semichemical pulping, the provisions of this subpart are applicable when any portion of the material charged to an affected facility is produced by the kraft pulping operation.

(b) Except as noted in § 60.283a(a)(1)(iv), any facility under paragraph (a) of this section that commences construction, reconstruction, or modification after May 23, 2013, is subject to the requirements of this subpart.

§ 60.281a Definitions.

As used in this subpart, all terms not defined herein must have the same meaning given them in the Act and in subpart A of this part.

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.

Black liquor oxidation system means the vessels used to oxidize, with air or oxygen, the black liquor, and associated storage tank(s).

Black liquor solids (BLS) means the dry weight of the solids which enter the recovery furnace in the black liquor.

Brown stock washer system means brown stock washers and associated knotters, vacuum pumps, and filtrate tanks used to wash the pulp following the digester system. Diffusion washers are excluded from this definition.

Condensable particulate matter, for purposes of this subpart, means particulate matter measured by EPA Method 202 of Appendix M of part 51 of this chapter that is vapor phase at stack conditions, but condenses and/or reacts upon cooling and dilution in the ambient air to form solid or liquid PM immediately after discharge from the stack.

Condensate stripper system means a column, and associated condensers,

used to strip, with air or steam, TRS compounds from condensate streams from various processes within a kraft pulp mill.

Cross recovery furnace means a furnace used to recover chemicals consisting primarily of sodium and sulfur compounds by burning black liquor which on a quarterly basis contains more than 7 weight percent of the total pulp solids from the neutral sulfite semichemical process and has a green liquor sulfidity of more than 28 percent.

Digester system means each continuous digester or each batch digester used for the cooking of wood in white liquor, and associated flash tank(s), blow tank(s), chip steamer(s), and condenser(s).

Filterable particulate matter, for purposes of this subpart, means particulate matter measured by EPA Method 5 of Appendix A–3 of this part.

Green liquor sulfidity means the sulfidity of the liquor which leaves the smelt dissolving tank.

Kraft pulp mill means any stationary source which produces pulp from wood by cooking (digesting) wood chips in a water solution of sodium hydroxide and sodium sulfide (white liquor) at high temperature and pressure. Regeneration of the cooking chemicals through a recovery process is also considered part of the kraft pulp mill.

Lime kiln means a unit used to calcine lime mud, which consists primarily of calcium carbonate, into quicklime, which is calcium oxide.

Monitoring system malfunction means a sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. The owner or operator is required to implement monitoring system repairs in response to monitoring system malfunctions or out-of-control periods, and to return the monitoring system to operation as expeditiously as practicable.

Multiple-effect evaporator system means the multiple-effect evaporators and associated condenser(s) and hotwell(s) used to concentrate the spent cooking liquid that is separated from the pulp (black liquor).

Neutral sulfite semichemical pulping operation means any operation in which pulp is produced from wood by cooking (digesting) wood chips in a solution of sodium sulfite and sodium bicarbonate, followed by mechanical defibrating (grinding).

Recovery furnace means either a straight kraft recovery furnace or a cross recovery furnace, and includes the direct-contact evaporator for a direct-contact furnace.

Smelt dissolving tank means a vessel used for dissolving the smelt collected from the recovery furnace.

Straight kraft recovery furnace means a furnace used to recover chemicals consisting primarily of sodium and sulfur compounds by burning black liquor which on a quarterly basis contains 7 weight percent or less of the total pulp solids from the neutral sulfite semichemical process or has green liquor sulfidity of 28 percent or less.

Total reduced sulfur (TRS) means the sum of the sulfur compounds hydrogen sulfide, methyl mercaptan, dimethyl sulfide, and dimethyl disulfide that are released during the kraft pulping operation and measured by Method 16 of Appendix A–6 of this part.

§ 60.282a Standard for filterable particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart must cause to be discharged into the atmosphere:

(1) From any modified recovery furnace any gases which:

(i) Contain filterable particulate matter in excess of 0.10 g/dscm (0.044 gr/dscf) corrected to 8 percent oxygen.

(ii) Exhibit 20 percent opacity or greater, where an electrostatic precipitator (ESP) emission control device is used.

(2) From any new or reconstructed recovery furnace any gases which:

(i) Contain filterable particulate matter in excess of 0.034 g/dscm (0.015 gr/dscf) corrected to 8 percent oxygen.

(ii) Exhibit 20 percent opacity or greater, where an ESP emission control device is used.

(3) From any modified or reconstructed smelt dissolving tank, or from any new smelt dissolving tank that is not associated with a new or reconstructed recovery furnace subject to the provisions of paragraph (a)(2) of this section, any gases which contain filterable particulate matter in excess of 0.1 g/kg black liquor solids (dry weight) [0.2 lb/ton black liquor solids (dry weight)].

(4) From any new smelt dissolving tank associated with a new or reconstructed recovery furnace subject to the provisions of paragraph (a)(2) of this section, any gases which contain filterable particulate matter in excess of 0.060 g/kg black liquor solids (dry weight) [0.12 lb/ton black liquor solids (dry weight)].

(5) From any modified lime kiln any gases which:

(i) Contain filterable particulate matter in excess of 0.15 g/dscm (0.064 gr/dscf) corrected to 10 percent oxygen.

(ii) Exhibit 20 percent opacity or greater, where an ESP emission control device is used.

(6) From any new or reconstructed lime kiln any gases which:

(i) Contain filterable particulate matter in excess of 0.023 g/dscm (0.010 gr/dscf) corrected to 10 percent oxygen.

(ii) Exhibit 20 percent opacity or greater, where an ESP emission control device is used.

(b) The standards in this section apply at all times.

(c) The exemptions to opacity standards under 40 CFR 60.11(c) do not apply to subpart BBa.

§ 60.283a Standard for total reduced sulfur (TRS).

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart must cause to be discharged into the atmosphere:

(1) From any digester system, brown stock washer system, multiple-effect evaporator system, or condensate stripper system any gases which contain TRS in excess of 5 ppm by volume on a dry basis, corrected to 10 percent oxygen, unless one of the following conditions are met:

(i) The gases are combusted in a lime kiln subject to the provisions of either paragraph (a)(5) of this section or § 60.283(a)(5) of subpart BB of this part; or

(ii) The gases are combusted in a recovery furnace subject to the provisions of either paragraphs (a)(2) or (a)(3) of this section or § 60.283(a)(2) or (a)(3) of subpart BB of this part; or

(iii) The gases are combusted with other waste gases in an incinerator or other device, or combusted in a lime kiln or recovery furnace not subject to the provisions of this subpart (or subpart BB of this part), and are subjected to a minimum temperature of 650 °C (1200 °F) for at least 0.5 second; or

(iv) It has been demonstrated to the Administrator's satisfaction by the owner or operator that incinerating the exhaust gases from a new, modified, or reconstructed brown stock washer system is technologically or economically unfeasible. Any exempt system will become subject to the provisions of this subpart if the facility is changed so that the gases can be incinerated.

(v) The gases from the digester system, brown stock washer system, or condensate stripper system are

controlled by a means other than combustion. In this case, this system must not discharge any gases to the atmosphere which contain TRS in excess of 5 ppm by volume on a dry basis, uncorrected for oxygen content.

(vi) The uncontrolled exhaust gases from a new, modified, or reconstructed digester system contain TRS less than 0.005 g/kg air dried pulp (ADP) (0.01 lb/ton ADP).

(2) From any straight kraft recovery furnace any gases which contain TRS in excess of 5 ppm by volume on a dry basis, corrected to 8 percent oxygen.

(3) From any cross recovery furnace any gases which contain TRS in excess of 25 ppm by volume on a dry basis, corrected to 8 percent oxygen.

(4) From any smelt dissolving tank any gases which contain TRS in excess of 0.016 g/kg black liquor solids as H_2S (0.033 lb/ton black liquor solids as H_2S).

(5) From any lime kiln any gases which contain TRS in excess of 8 ppm by volume on a dry basis, corrected to 10 percent oxygen.

(b) The standards in this section apply at all times.

§ 60.284a Monitoring of emissions and operations.

(a) Any owner or operator subject to the provisions of this subpart must install, calibrate, maintain, and operate the continuous monitoring systems specified in paragraphs (a)(1) and (2) of this section:

(1) A continuous monitoring system to monitor and record the opacity of the gases discharged into the atmosphere from any recovery furnace or lime kiln using an ESP emission control device, except as specified in paragraph (b)(4) of this section. The span of this system must be set at 70 percent opacity. You must install, certify, and operate the continuous opacity monitoring system in accordance with Performance Specification (PS) 1 in Appendix B to 40 CFR part 60.

(2) Continuous monitoring systems to monitor and record the concentration of TRS emissions on a dry basis and the percent of oxygen by volume on a dry basis in the gases discharged into the atmosphere from any lime kiln, recovery furnace, digester system, brown stock washer system, multiple-effect evaporator system, or condensate stripper system, except where the provisions of § 60.283a(a)(1)(iii) or (iv) apply. You must install, certify, and operate the continuous TRS monitoring system in accordance with Performance Specification (PS) 5 in Appendix B to 40 CFR part 60. These systems must be located downstream of the control device(s) and the spans of these continuous monitoring system(s) must be set:

(i) At a TRS concentration of 30 ppm for the TRS continuous monitoring system, except that for any cross recovery furnace the span must be set at 50 ppm.

(ii) At 21 percent oxygen for the continuous oxygen monitoring system.

(b) Any owner or operator subject to the provisions of this subpart must install, calibrate, maintain, and operate the following continuous parameter monitoring devices specified in paragraphs (b)(1) through (4) of this section.

(1) For any incinerator, a monitoring device for the continuous measurement of the combustion temperature at the point of incineration of effluent gases which are emitted from any digester system, brown stock washer system, multiple effect evaporator system, black liquor oxidation system, or condensate stripper system where the provisions of § 60.283a(a)(1)(iii) apply. The monitoring device is to be certified by the manufacturer to be accurate within ±1 percent of the temperature being measured.

(2) For any recovery furnace, lime kiln, or smelt dissolving tank using a wet scrubber emission control device:

(i) A monitoring device for the continuous measurement of the pressure drop of the gas stream through the control equipment. The monitoring device is to be certified by the manufacturer to be accurate to within a gage pressure of ±500 Pascals (±2 inches water gage pressure).

(ii) A monitoring device for the continuous measurement of the scrubbing liquid flow rate. The monitoring device used for continuous measurement of the scrubbing liquid flow rate must be certified by the manufacturer to be accurate within ±5 percent of the design scrubbing liquid flow rate.

(iii) As an alternative to pressure drop measurement under paragraph (b)(2)(i) of this section, a monitoring device for measurement of fan amperage may be used for smelt dissolving tank dynamic scrubbers that operate at ambient pressure or for low-energy entrainment scrubbers where the fan speed does not vary.

(iv) As an alternative to scrubbing liquid flow rate measurement under paragraph (b)(2)(ii) of this section, a monitoring device for measurement of scrubbing liquid supply pressure may be used. The monitoring device is to be certified by the manufacturer to be accurate within ±15 percent of design scrubbing liquid supply pressure. The pressure sensor or tap is to be located close to the scrubber liquid discharge point. The Administrator may be consulted for approval of alternative locations.

(3) For any recovery furnace or lime kiln using an ESP emission control device, the owner or operator must use the continuous parameter monitoring devices specified in paragraphs (b)(3)(i) and (ii) of this section.

(i) A monitoring device for the continuous measurement of the secondary voltage of each ESP collection field.

(ii) A monitoring device for the continuous measurement of the secondary current of each ESP collection field.

(iii) Total secondary power may be calculated as the product of the secondary voltage and secondary current measurements for each ESP collection field and used to demonstrate compliance as an alternative to the secondary voltage and secondary current measurements.

(4) For any recovery furnace or lime kiln using an ESP followed by a wet scrubber, the owner or operator must use the continuous parameter monitoring devices specified in paragraphs (b)(2) and (3) of this section. The opacity monitoring system specified in paragraph (a)(1) of this section is not required for combination ESP/wet scrubber control device systems.

(c) *Monitor operation and calculations.* Any owner or operator subject to the provisions of this subpart must follow the procedures for collecting and reducing monitoring data and setting operating limits in paragraphs (c)(1) through (6) of this section. Subpart A of this part specifies methods for reducing continuous opacity monitoring system data.

(1) Any owner or operator subject to the provisions of this subpart must, except where the provisions of § 60.283a(a)(1)(iii) or (iv) apply, perform the following:

(i) Calculate and record on a daily basis 12-hour average TRS concentrations for the two consecutive periods of each operating day. Each 12-hour average must be determined as the arithmetic mean of the appropriate 12 contiguous 1-hour average TRS concentrations provided by each continuous monitoring system installed under paragraph (a)(2) of this section.

(ii) Calculate and record on a daily basis 12-hour average oxygen concentrations for the two consecutive periods of each operating day for the recovery furnace and lime kiln. These 12- hour averages must correspond to the 12-hour average TRS concentrations

under paragraph (c)(1) of this section and must be determined as an arithmetic mean of the appropriate 12 contiguous 1-hour average oxygen concentrations provided by each continuous monitoring system installed under paragraph (a)(2) of this section.

(iii) Using the following equation, correct all 12-hour average TRS concentrations to 10 volume percent oxygen, except that all 12-hour average TRS concentrations from a recovery furnace must be corrected to 8 volume percent oxygen instead of 10 percent, and all 12-hour average TRS concentrations from a facility to which the provisions of § 60.283a(a)(1)(v) apply must not be corrected for oxygen content:

$C_{corr} = C_{meas} \times (21 - X/21 - Y)$

where:

C_{corr} = the concentration corrected for oxygen.

C_{meas} = the concentration uncorrected for oxygen.

X = the volumetric oxygen concentration in percentage to be corrected to (8 percent for recovery furnaces and 10 percent for lime kilns, incinerators, or other devices).

Y = the measured 12-hour average volumetric oxygen concentration.

(2) Record at least once each successive 5-minute period all measurements obtained from the continuous monitoring devices installed under paragraph (b)(1) of this section. Calculate 3-hour block averages from the recorded measurements of incinerator temperature. Temperature measurements recorded when no TRS emissions are fired in the incinerator (e.g., during incinerator warm-up and cool-down periods when no TRS emissions are generated or an alternative control device is used) may be omitted from the block average calculation.

(3) Record at least once each successive 15-minute period all measurements obtained from the continuous monitoring devices installed under paragraph (b)(2) through (4) of this section and reduce the data as follows:

(i) Calculate 12-hour block averages from the recorded measurements of wet scrubber pressure drop (or smelt dissolving tank scrubber fan amperage) and liquid flow rate (or liquid supply pressure), as applicable.

(ii) Calculate quarterly averages from the recorded measurements of ESP parameters (secondary voltage and secondary current, or total secondary power) for ESP-controlled recovery furnaces or lime kilns that measure opacity in addition to ESP parameters.

(iii) Calculate 12-hour block averages from the recorded measurements of ESP parameters (secondary voltage and secondary current, or total secondary power) for recovery furnaces or lime kilns with combination ESP/wet scrubber controls.

(4) During the initial performance test required in § 60.285a, the owner or operator must establish site-specific operating limits for the monitoring parameters in paragraphs (b)(2) through (4) of this section by continuously monitoring the parameters and determining the arithmetic average value of each parameter during the performance test. The arithmetic average of the measured values for the three test runs establishes your minimum site-specific operating limit for each wet scrubber or ESP parameter. Multiple performance tests may be conducted to establish a range of parameter values. The owner or operator may establish replacement operating limits for the monitoring parameters during subsequent performance tests using the test methods in § 60.285a.

(5) You must operate the continuous monitoring systems required in paragraphs (a) and (b) of this section to collect data at all required intervals at all times the affected facility is operating except for periods of monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods, and required monitoring system quality assurance or quality control activities including, as applicable, calibration checks and required zero and span adjustments.

(6) You may not use data recorded during monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods, or required monitoring system quality assurance or control activities in calculations used to report emissions or operating limits. You must use all the data collected during all other periods in assessing the operation of the control device and associated control system.

(7) Except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required quality monitoring system quality assurance or quality control activities (including, as applicable, system accuracy audits and required zero and span adjustments), failure to collect required data is a deviation of the monitoring requirements.

(d) Excess emissions are defined for this subpart as follows:

(1) For emissions from any recovery furnace, periods of excess emissions are:

(i) All 12-hour averages of TRS concentrations above 5 ppm by volume at 8 percent oxygen for straight kraft recovery furnaces and above 25 ppm by volume at 8 percent oxygen for cross recovery furnaces during times when BLS is fired.

(ii) All 6-minute average opacities that exceed 20 percent during times when BLS is fired.

(2) For emissions from any lime kiln, periods of excess emissions are:

(i) All 12-hour average TRS concentration above 8 ppm by volume at 10 percent oxygen during times when lime mud is fired.

(ii) All 6-minute average opacities that exceed 20 percent during times when lime mud is fired.

(3) For emissions from any digester system, brown stock washer system, multiple-effect evaporator system, or condensate stripper system, periods of excess emissions are:

(i) All 12-hour average TRS concentrations above 5 ppm by volume at 10 percent oxygen unless the provisions of § 60.283a(a)(1)(i), (ii), or (iv) apply; or

(ii) All 3-hour block averages during which the combustion temperature at the point of incineration is less than 650 °C (1200 °F), where the provisions of § 60.283a(a)(1)(iii) apply.

(4) For any recovery furnace, lime kiln, or smelt dissolving tank controlled with a wet scrubber emission control device that complies with the parameter monitoring requirements specified in § 60.284a(b)(2), periods of excess emissions are:

(i) All 12-hour block average scrubbing liquid flow rate (or scrubbing liquid supply pressure) measurements below the minimum site-specific limit established during performance testing during times when BLS or lime mud is fired (as applicable), and

(ii) All 12-hour block average scrubber pressure drop (or fan amperage, if used as an alternative under paragraph (b)(2)(iii) of this section) measurements below the minimum site-specific limit established during performance testing during times when BLS or lime mud is fired (as applicable), except during startup and shutdown.

(5) For any recovery furnace or lime kiln controlled with an ESP followed by a wet scrubber that complies with the parameter monitoring requirements specified in § 60.284a(b)(4), periods of excess emissions are:

(i) All 12-hour block average scrubbing liquid flow rate (or scrubbing liquid supply pressure) measurements below the minimum site-specific limit established during performance testing during times when BLS or lime mud is fired (as applicable), and

(ii) All 12-hour block average scrubber pressure drop measurements below the

minimum site-specific limit established during performance testing during times when BLS or lime mud is fired (as applicable) except during startup and shutdown,

(iii) All 12-hour block average ESP secondary voltage and secondary current measurements (or total secondary power values) below the minimum site-specific limit established during performance testing during times when BLS or lime mud is fired (as applicable).

(e) The Administrator will not consider periods of excess emissions reported under § 60.288a(a) to be indicative of a violation of the standards provided the criteria in paragraphs (e)(1) and (2) of this section are met.

(1) The percent of the total number of possible contiguous periods of excess emissions in a quarter does not exceed:

(i) One percent for TRS emissions from recovery furnaces, provided that the TRS concentration does not exceed 30 ppm corrected to 8 percent oxygen.

(ii) Two percent for average opacities from recovery furnaces, provided that the ESP secondary voltage and secondary current averaged over the quarter remained above the minimum operating limits established during the performance test.

(iii) One percent for TRS emissions from lime kilns, provided that the TRS concentration does not exceed 22 ppm corrected to 10 percent oxygen.

(iv) One percent for average opacities from lime kilns, provided that the ESP secondary voltage and secondary current (or total secondary power) averaged over the quarter remained above the minimum operating limits established during the performance test.

(2) The Administrator determines that the affected facility, including air pollution control equipment, is maintained and operated in a manner which is consistent with good air pollution control practice for minimizing emissions during periods of excess emissions.

(3) The TRS concentration uncorrected for oxygen may be considered when determining compliance with the excess emissions provisions in paragraphs (e)(1)(i) and (iii) of this section during periods of startup or shutdown when stack oxygen percentage approaches ambient conditions. If the measured TRS concentration uncorrected for oxygen is less than the applicable limit (5 ppm for recovery furnaces or 8 ppm for lime kilns) during periods of startup or shutdown when the stack oxygen concentration is 15 percent or greater, then the Administrator will consider the TRS average to be in compliance. This provision only applies during periods of affected facility startup and shutdown.

(f) The procedures under § 60.13 must be followed for installation, evaluation, and operation of the continuous monitoring systems required under this section. All continuous monitoring systems must be operated in accordance with the applicable procedures under Performance Specifications 1, 3, and 5 of appendix B of this part.

§ 60.285a Test methods and procedures.

(a) In conducting the performance tests required by this subpart and § 60.8, the owner or operator must use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures in this section, except as provided in § 60.8(b). Acceptable alternative methods and procedures are given in paragraph (f) of this section.

(b) The owner or operator must determine compliance with the filterable particulate matter standards in § 60.282a(a)(1), (2), (5) and (6) as follows:

(1) Method 5 of Appendix A–3 of this part must be used to determine the filterable particulate matter concentration. The sampling time and sample volume for each run must be at least 60 minutes and 0.90 dscm (31.8 dscf). Water must be used as the cleanup solvent instead of acetone in the sample recovery procedure. The particulate concentration must be corrected to the appropriate oxygen concentration according to § 60.284a(c)(3).

(2) The emission rate correction factor, integrated sampling and analysis procedure of Method 3B of Appendix A–2 of this part must be used to determine the oxygen concentration. The gas sample must be taken at the same time and at the same traverse points as the particulate sample.

(3) Method 9 of Appendix A–4 of this part and the procedures in § 60.11 must be used to determine opacity. Opacity measurement is not required for recovery furnaces or lime kilns operating with a wet scrubber alone or a wet scrubber in combination with an ESP.

(4) In addition to the initial performance test required by this subpart and § 60.8(a), you must conduct repeat performance tests for filterable particulate matter at intervals no longer than 60 months following the previous performance test using the procedures in paragraphs (b)(1) and (2) of this section.

(5) When the initial and repeat performance tests are conducted for filterable particulate matter, the owner or operator must also measure condensable particulate matter using Method 202 of Appendix M of part 51 of this chapter.

(c) The owner or operator must determine compliance with the filterable particular matter standards in § 60.282a(a)(3) and (4) as follows:

(1) The emission rate (E) of filterable particulate matter must be computed for each run using the following equation:

$$E = c_s Q_{sd}/BLS$$

Where:

E = emission rate of filterable particulate matter, g/kg (lb/ton) of BLS.
c_s = Concentration of filterable particulate matter, g/dscm (lb/dscf).
Q_{sd} = volumetric flow rate of effluent gas, dscm/hr (dscf/hr).
BLS = black liquor solids (dry weight) feed rate, kg/hr (ton/hr).

(2) Method 5 of Appendix A–3 of this part must be used to determine the filterable particulate matter concentration (c_s) and the volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume must be at least 60 minutes and 0.90 dscm (31.8 dscf). Water must be used instead of acetone in the sample recovery.

(3) Process data must be used to determine the black liquor solids (BLS) feed rate on a dry weight basis.

(4) In addition to the initial performance test required by this subpart and § 60.8(a), you must conduct repeat performance tests for filterable particulate matter at intervals no longer than 60 months following the previous performance test using the procedures in paragraphs (c)(1) through (3) of this section must be conducted within 60 months following the previous filterable particulate matter performance test.

(5) When the initial and repeat performance tests are conducted for filterable particulate matter, the owner or operator must also measure condensable particulate matter using Method 202 of Appendix M of part 51.

(d) The owner or operator must determine compliance with the TRS standards in § 60.283a, except § 60.283a(a)(1)(vi) and (4), as follows:

(1) Method 16 of Appendix A–6 of this part must be used to determine the TRS concentration. The TRS concentration must be corrected to the appropriate oxygen concentration using the procedure in § 60.284a(c)(3). The sampling time must be at least 3 hours, but no longer than 6 hours.

(2) The emission rate correction factor, integrated sampling and analysis procedure of Method 3B of Appendix A–2 of this part must be used to determine the oxygen concentration. The sample must be taken over the same time period as the TRS samples.

(3) When determining whether a furnace is a straight kraft recovery furnace or a cross recovery furnace, TAPPI Method T.624 (incorporated by reference—see § 60.17(d)(1)) must be used to determine sodium sulfide, sodium hydroxide, and sodium carbonate. These determinations must be made 3 times daily from the green liquor, and the daily average values must be converted to sodium oxide (Na_20) and substituted into the following equation to determine the green liquor sulfidity:

$GLS = 100\ C_{Na_2S}/(C_{Na_2S}C_{NaOH}C_{Na_2CO_3})$

Where:

GLS = green liquor sulfidity, percent.
C_{Na_2S} = concentration of Na_2S as Na_2O, mg/liter (gr/gal).
C_{NaOH} = concentration of NaOH as Na_2O, mg/liter (gr/gal).
$C_{Na_2CO_3}$ = concentration of Na_2CO_3 as Na_2O, mg/ liter (gr/gal).

(4) For recovery furnaces and lime kilns, in addition to the initial performance test required in this subpart and § 60.8(a), you must conduct repeat TRS performance tests at intervals no longer than 60 months following the previous performance test using the procedures in paragraphs (d)(1) and (2) of this section.

(e) The owner or operator must determine compliance with the TRS standards in § 60.283a(a)(1)(vi) and (a)(4) as follows:

(1) The emission rate (E) of TRS must be computed for each run using the following equation:

$E = C_{TRS}\ F\ Q_{sd}/P$

Where:

E = emission rate of TRS, g/kg (lb/ton) of BLS or ADP.
CTRS = average combined concentration of TRS, ppm.
F = conversion factor, 0.001417 g H_2S/m^3-ppm (8.846×10^{-8} lb H_2S/ft^3-ppm).
Q_{sd} = volumetric flow rate of stack gas, dscm/hr (dscf/hr).
P = black liquor solids feed or pulp production rate, kg/hr (ton/hr).

(2) Method 16 of Appendix A–6 of this part must be used to determine the TRS concentration (C_{TRS}).

(3) Method 2 of Appendix A–1 of this part must be used to determine the volumetric flow rate (Q_{sd}) of the effluent gas.

(4) Process data must be used to determine the black liquor feed rate or the pulp production rate (P).

(5) For smelt dissolving tanks, in addition to the initial performance test required in this subpart and § 60.8(a), you must conduct repeat TRS performance tests at intervals no longer than 60 months following the previous performance test using the procedures in paragraphs (e)(1) through (4) of this section.

(f) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) In place of Method 5 of Appendix A–3 of this part, Method 17 of Appendix A–6 of this part may be used if a constant value of 0.009 g/dscm (0.004 gr/dscf) is added to the results of Method 17 and the stack temperature is no greater than 204 °C (400 °F).

(2) In place of Method 16 of Appendix A–6 of this part, Method 16A, 16B, or 16C of Appendix A–6 of this part may be used.

(3) In place of Method 3B of Appendix A–2 of this part, ASME PTC 19.10–1981 [Part 10] (incorporated by reference—see § 60.17(h)(4)) may be used.

§ 60.286a Affirmative defense for violations of emission standards During malfunction.

In response to an action to enforce the standards set forth in §§ 60.282a and 60.283a, you may assert an affirmative defense to a claim for civil penalties for violations of such standards that are caused by malfunction, as defined at § 60.2. Appropriate penalties may be assessed if you fail to meet your burden of proving all of the requirements in the affirmative defense. The affirmative defense must not be available for claims for injunctive relief.

(a) *Assertion of affirmative defense.* To establish the affirmative defense in any action to enforce such a standard, you must timely meet the reporting requirements in paragraph (b) of this section, and must prove by a preponderance of evidence that: (1) The violation:

(i) Was caused by a sudden, infrequent, and unavoidable failure of air pollution control 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) Was not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and

(2) Repairs were made as expeditiously as possible when a violation occurred; and

(3) The frequency, amount, and duration of the violation (including any bypass) were minimized to the maximum extent practicable; and

(4) If the violation 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 violation 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 violation 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 violation resulting from the malfunction event at issue. The analysis must also specify, using best monitoring methods and engineering judgment, the amount of any emissions that were the result of the malfunction.

(b) *Report.* The owner or operator seeking to assert an affirmative defense must submit a written report to the Administrator with all necessary supporting documentation that explains how it has met the requirements set forth in paragraph (a) of this section. This affirmative defense report must be included in the first periodic compliance, deviation report or excess emission report otherwise required after the initial occurrence of the violation of the relevant standard (which may be the end of any applicable averaging period). If such compliance, deviation report or excess emission report is due less than 45 days after the initial occurrence of the violation, the affirmative defense report may be included in the second compliance, deviation report or excess emission report due after the initial occurrence of the violation of the relevant standard.

§ 60.287a Recordkeeping.

(a) The owner or operator must maintain records of the performance evaluations of the continuous monitoring systems.

(b) For each continuous monitoring system, the owner or operator must maintain records of the following information, as applicable:

(1) Records of the opacity of the gases discharged into the atmosphere from any recovery furnace or lime kiln using an ESP emission control device, except as specified in paragraph (b)(6) of this

section, and records of the ESP secondary voltage and secondary current (or total secondary power) averaged over the reporting period for the opacity allowances specified in § 60.284a(e)(1)(ii) and (iv).

(2) Records of the concentration of TRS emissions on a dry basis and the percent of oxygen by volume on a dry basis in the gases discharged into the atmosphere from any lime kiln, recovery furnace, digester system, brown stock washer system, multiple-effect evaporator system, or condensate stripper system, except where the provisions of § 60.283a(a)(1)(iii) or (iv) apply.

(3) Records of the combustion temperature at the point of incineration of effluent gases which are emitted from any digester system, brown stock washer system, multiple effect evaporator system, black liquor oxidation system, or condensate stripper system where the provisions of § 60.283a(a)(1)(iii) apply.

(4) For any recovery furnace, lime kiln, or smelt dissolving tank using a wet scrubber emission control device:

(i) Records of the pressure drop of the gas stream through the control equipment (or smelt dissolving tank scrubber fan amperage), and

(ii) Records of the scrubbing liquid flow rate (or scrubbing liquid supply pressure).

(5) For any recovery furnace or lime kiln using an ESP control device:

(i) Records of the secondary voltage of each ESP collection field, and

(ii) Records of the secondary current of each ESP collection field, and

(iii) If used as an alternative to secondary voltage and current, records of the total secondary power of each ESP collection field.

(6) For any recovery furnace or lime kiln using an ESP followed by a wet scrubber, the records specified under paragraphs (b)(4) and (5) of this section.

(7) Records of excess emissions as defined in § 60.284a(d).

(c) For each malfunction, the owner or operator must maintain records of the following information:

(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 § 60.11(d), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

§ 60.288a Reporting.

(a) For the purpose of reports required under § 60.7(c), any owner or operator subject to the provisions of this subpart must report semiannually periods of excess emissions defined in 60.284a(d).

(b) Within 60 days after the date of completing each performance test (defined in § 60.8) as required by this subpart you must submit the results of the performance tests, including any associated fuel analyses, required by this subpart to the EPA as follows. You must use the latest version of the EPA's Electronic Reporting Tool (ERT) (see *http://www.epa.gov/ttn/chief/ert/index.html*) existing at the time of the performance test to generate a submission package file, which documents performance test data. You must then submit the file generated by the ERT through the EPA's Compliance and Emissions Data Reporting Interface (CEDRI), which can be accessed by logging in to the EPA's Central Data Exchange (CDX) (*https://cdx.epa.gov/*). Only data collected using test methods supported by the ERT as listed on the ERT Web site are subject to the requirement to submit the performance test data electronically. Owners or operators who claim that some of the information being submitted for performance tests is confidential business information (CBI) must submit a complete ERT file including information claimed to be CBI on a compact disk, flash drive, or other commonly used electronic storage media to the EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAPQS/CORE CBI Office, Attention: WebFIRE Administrator, MD C404–02, 4930 Old Page Rd., Durham, NC 27703. The same ERT file with the CBI omitted must be submitted to the EPA via CDX as described earlier in this paragraph. At the discretion of the delegated authority, you must also submit these reports, including the confidential business information, to the delegated authority in the format specified by the delegated authority. For any performance test conducted using test methods that are not listed on the ERT Web site, the owner or operator must submit the results of the performance test to the Administrator at the appropriate address listed in § 60.4.

(c) Within 60 days after the date of completing each CEMS performance evaluation test as defined in § 60.13, you must submit relative accuracy test audit (RATA) data to the EPA's Central Data Exchange (CDX) by using CEDRI in accordance with paragraph (b) of this section. Only RATA pollutants that can be documented with the ERT (as listed on the ERT Web site) are subject to this requirement. For any performance evaluations with no corresponding RATA pollutants listed on the ERT Web site, the owner or operator must submit the results of the performance evaluation to the Administrator at the appropriate address listed in § 60.4.

(d) If a malfunction occurred during the reporting period, you must submit a report that contains the following:

(1) 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.

(2) A description of actions taken by an owner or operator during a malfunction of an affected facility to minimize emissions in accordance with § 60.11(d), including actions taken to correct a malfunction.

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