

ENVIRONMENTAL PROTECTION AGENCY**40 CFR Part 60**

[EPA-HQ-OAR-2012-0640; FRL-9907-37-OAR]

RIN 2060-AR64

Kraft Pulp Mills NSPS Review**AGENCY:** Environmental Protection Agency (EPA).**ACTION:** Final rule.

SUMMARY: This action finalizes 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, and opacity limits for recovery furnaces and lime kilns equipped with electrostatic precipitators. These revised standards apply to emission units commencing construction, reconstruction or modification after May 23, 2013. This final rule removes the General Provisions exemption for periods of startup, shutdown and malfunction resulting in a standard that applies at all times. This final rule also includes additional testing requirements and updated monitoring, recordkeeping and reporting requirements for affected sources, including electronic reporting of performance test data. These revisions to the testing, monitoring, recordkeeping and reporting requirements are expected to ensure that control systems are properly maintained over time, ensure continuous compliance with standards and improve data accessibility for the Environmental Protection Agency (EPA), states, tribal governments and communities.

DATES: This final action is effective on April 4, 2014. The incorporation by reference of certain publications listed in this rule is approved by the Director of the Federal Register as of April 4, 2014.

ADDRESSES: The EPA has established a docket for this action under Docket ID Number EPA-HQ-OAR-2012-0640. All documents in the docket are listed in the <http://www.regulations.gov> index. Although listed in the index, some information is not publicly available (e.g., confidential business information or other information whose disclosure is restricted by statute). Certain other material, such as copyrighted material, will be publicly available only in hard copy 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 final rule for kraft pulp mills, contact Dr. Kelley Spence, Natural Resources Group, Sector Policies and Programs 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:

ADTP Air dried ton of pulp
Agency U.S. Environmental Protection Agency
ANSI American National Standards Institute
ASME American Society of Mechanical Engineers
BDT Best demonstrated technology
BLO Black liquor oxidation
BLS Black liquor solids
BSER Best system of emissions reduction
BSW Brown stock washer
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
Cir. Circuit Court
COMS Continuous opacity monitoring system
Court United States Court of Appeals for the District of Columbia Circuit
CWA Clean Water Act
D.C. Cir. United States Court of Appeals for the District of Columbia Circuit
dscf Dry standard cubic foot
EPA U.S. Environmental Protection Agency
ERT Electronic Reporting Tool
ESP Electrostatic precipitator
FR **Federal Register**
gr Grain(s)
H₂S Hydrogen sulfide
HAP Hazardous air pollutant(s)
HVLC High-volume, low-concentration
IBR Incorporation by Reference
ICR Information collection request
lb Pound(s)
LVHC Low-volume, high-concentration
N/A Not applicable
NAICS North American Industry Classification System
NESHAP National emission standards for hazardous air pollutants
NSPS New source performance standards

NTTAA National Technology Transfer and Advancement Act of 1995
NW Northwest
O&M Operating and maintenance
O₂ Oxygen
OMB Office of Management and Budget
PM Particulate matter
ppm Parts per million
ppmdv Part(s) per million by dry volume
PTC Performance Test Code
RTR Risk and technology review
SDT Smelt dissolving tank
SSM Startup, shutdown and malfunction
TAPPI Technical Association of the Pulp and Paper Industry
TRS Total reduced sulfur
TTN Technology Transfer Network
U.S. United States
U.S.C. United States Code
UMRA Unfunded Mandates Reform Act
v. Versus
VCS Voluntary consensus standard(s)
VOC Volatile organic compound
yr Year(s)

Background Information Document. On May 23, 2013, the EPA proposed revisions to the Kraft Pulp Mills New Source Performance Standards (NSPS) based on evaluations performed by the EPA to conduct the NSPS review. In this action, we are finalizing revisions to the rule. A document summarizing the public comments on the proposal and presenting the EPA responses to those comments is available in Docket ID Number EPA-HQ-OAR-2012-0640.

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

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A red-line version of the regulatory language that incorporates the changes in this action is available in the docket for this action (Docket ID No. EPA-HQ-OAR-2012-0640).

I. Executive Summary

A. Purpose of Regulatory Action

Section 111(b)(1)(B) of the Clean Air Act (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. In this review, the EPA considers what degree of emission limitation is achievable through the application of the best system of emission reductions (BSER), which (taking into account the cost of achieving such reduction and any non-air 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 evaluated the startup, shutdown and malfunction (SSM) provisions in this rule in light of the

District of Columbia Circuit Court of Appeals (D.C. Cir.) 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, emission 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 that even though the Court in *Sierra Club v. EPA* was considering a challenge to a section 112 national emissions standard for hazardous air pollutants (NESHAP), the Court’s reasoning applies equally to CAA section 111 (NSPS) and section 129 rules. The EPA’s general approach to SSM periods has been used consistently in promulgating new NSPS standards under CAA section 111, and in section 112 and section 129 rulemaking actions, since the DC 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 promulgating new standards which apply to affected sources at kraft pulp mills for which construction, modification or reconstruction commences after May 23, 2013. The affected sources under the NSPS are new, modified or reconstructed digester systems, brown stock washer (BSW) systems, evaporator systems, condensate stripper systems, recovery furnaces, smelt dissolving tanks (SDTs) and lime kilns at kraft pulp mills. The requirements for these new, modified or reconstructed sources are included in a new subpart—40 CFR part 60, subpart BBa. The EPA is also promulgating testing, monitoring, recordkeeping and reporting requirements for subpart BBa that are in some ways different from what is required under 40 CFR part 60, subpart BB. Subpart BB continues to apply for affected sources that are constructed, modified or reconstructed after September 24, 1976, and on or before May 23, 2013, while subpart BBa applies for affected sources constructed, modified or reconstructed after May 23, 2013.

B. Summary of Major Provisions

Based on the results of the NSPS review, and following consideration of public comments, the EPA is finalizing the proposed 40 CFR part 60, subpart BBa standards for filterable particulate matter (PM), opacity and total reduced sulfur (TRS) compounds and is finalizing the associated proposed monitoring allowances. The final rule specifies that TRS emissions from digester systems, BSW systems, evaporator systems and condensate stripper systems that are controlled by incineration or other means must be collected in a low-volume high-concentration (LVHC) or a high-volume low-concentration (HVLC) closed-vent system meeting the requirements of the provisions of 40 CFR 63.450 of subpart S. Table 1 summarizes the final standards for filterable PM, opacity and TRS contained in subpart BBa.

TABLE 1—SUMMARY OF SUBPART BBa STANDARDS FOR AFFECTED SOURCES AT KRAFT PULP MILLS CONSTRUCTED, MODIFIED OR RECONSTRUCTED AFTER MAY 23, 2013

Affected sources	40 CFR 60.282a Filterable particulate matter (PM)	40 CFR 60.283a Total reduced sulfur (TRS)
Digester system, brown stock washer system, evaporator system and condensate stripper system.	None	Meet a limit of 5 ppmdv & 10% oxygen (O ₂), unless one of the following conditions is met: 1. Collect emissions from affected source in LVHC or HVLC closed-vent system meeting the requirements in 40 CFR part 63, subpart S and combust in one of the following: (a) Lime kiln subject to subpart BB or BBa (8 ppmdv TRS & 10% O ₂ limit); or

TABLE 1—SUMMARY OF SUBPART BBa STANDARDS FOR AFFECTED SOURCES AT KRAFT PULP MILLS CONSTRUCTED, MODIFIED OR RECONSTRUCTED AFTER MAY 23, 2013—Continued

Affected sources	40 CFR 60.282a Filterable particulate matter (PM)	40 CFR 60.283a Total reduced sulfur (TRS)
Recovery furnace	1a. <i>Modified</i> : 0.044 grains per dry standard cubic foot (gr/dscf) @ 8% O ₂ ; or 1b. <i>New/reconstructed</i> : 0.015 gr/dscf @ 8% O ₂ and. 2. <i>ESP only</i> : 20% opacity; and 2% monitoring allowance for opacity (provided ESP secondary voltage/current or power exceed minimum operating limits).	(b) Recovery furnace subject to subpart BB or BBa (5 or 25 ppmdv TRS @ 8% O ₂ limit); or (c) Incinerator, recovery furnace or lime kiln not subject to subpart BB or BBa, operated at a minimum temperature of 1,200 °F for 0.5 seconds (no ppmdv limit). 2. Collect emissions from affected source in LVHC or HVLC closed-vent system meeting the requirements in subpart S and use non-combustion control device with a limit of 5 ppmdv, uncorrected for O ₂ . 3. It is technologically or economically infeasible to incinerate BSW system gases. 4. Uncontrolled digester gases contain <0.01 pounds of TRS per air dried ton of pulp (lb TRS/ADTP). 1a. <i>Straight recovery furnace</i> ¹ 5 ppmdv @ 8% O ₂ ; and 1% monitoring allowance for TRS (restricted to ≤30 ppmdv @ 8% O ₂ or 1b. <i>Cross recovery furnace</i> ² 25 ppmdv @ 8% O ₂ and 1% monitoring allowance for TRS (restricted to ≤50 ppmdv @ 8% O ₂).
Smelt dissolving tank	1a. <i>Modified</i> : 0.2 lb/ton black liquor solids (BLS) dry weight; or 1b. <i>New/reconstructed</i> : 0.12 lb/ton BLS dry weight if associated with a new or reconstructed recovery furnace; or 1c. <i>New/reconstructed</i> : 0.2 lb/ton BLS dry weight if not associated with a new or reconstructed recovery furnace.	0.033 lb/ton BLS as hydrogen sulfide (H ₂ S).
Lime kiln	1a. <i>Modified</i> : 0.064 gr/dscf @ 10% O ₂ ; or 1b. <i>New/reconstructed</i> : 0.010 gr/dscf @ 10% O ₂ ; and 2.a <i>ESP only</i> : 20% opacity; and 1% monitoring allowance for opacity (provided ESP secondary voltage/current or power exceed minimum operating limits).	8 ppmdv & 10% O ₂ ; and 1% monitoring allowance for TRS (restricted to ≤22 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.

Continuous monitoring of opacity is required for recovery furnaces and lime kilns that are not using wet scrubbers or combined electrostatic precipitator (ESP)/scrubber systems. Continuous monitoring of TRS emissions is required for recovery furnaces, lime kilns and other affected sources that comply with the TRS concentration limits. Parameter monitoring is required for ESPs, wet scrubbers and combined ESP/scrubber systems.

The emission standards are applicable at all times as specified in the monitoring and testing provisions in subpart BBa. The EPA is including in this final 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.

Initial and repeat performance testing is required once every 5 years for filterable PM and TRS for new, modified and reconstructed affected sources in subpart BBa. The EPA is also requiring 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. Mills must submit electronic copies of their performance test reports using the EPA’s Electronic Reporting Tool (ERT). The EPA is also

making certain technical and editorial changes, clarifying the location of applicable test methods in the Code of Federal Regulations (CFR), incorporating by reference two non-EPA test methods, and adding definitions pertinent to the requirements in subpart BBa.

C. Summary of Costs and Benefits

Table 2 summarizes the total costs for all sources subject to this action and the total benefits of this action. See section VI of this preamble for further discussion.

TABLE 2—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 action include:

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

¹ North American Industry 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 action to a particular entity, contact the person in the preceding **FOR FURTHER INFORMATION CONTACT** section.

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

In addition to being available in the docket, an electronic copy of this final action is available on the World Wide Web through the Technology Transfer Network (TTN) Web site. Following signature, the EPA posted a copy of this final 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.

C. Judicial Review

Under section 307(b)(1) of the CAA, judicial review of this final action is available only by filing a petition for review in the United States Court of Appeals for the District of Columbia Circuit by June 3, 2014. Under section 307(b)(2) of the CAA, the requirements established by these final rules may not be challenged separately in any civil or

criminal proceedings brought by the EPA to enforce the requirements.

Section 307(d)(7)(B) of the CAA further provides that “[o]nly an objection to a rule or procedure which was raised with reasonable specificity during the period for public comment (including any public hearing) may be raised during judicial review.” This section also provides a mechanism for us to convene a proceeding for reconsideration, “[i]f the person raising an objection can demonstrate to the EPA that it was impracticable to raise such objection within [the period for public comment] or if the grounds for such objection arose after the period for public comment (but within the time specified for judicial review) and if such objection is of central relevance to the outcome of the rule.” Any person seeking to make such a demonstration to us should submit a Petition for Reconsideration to the Office of the Administrator, U.S. EPA, Room 3000, William Jefferson Clinton Building, 1200 Pennsylvania Ave. NW., Washington, DC 20460, with a copy to both the person(s) listed in the preceding **FOR FURTHER INFORMATION CONTACT** section and the Associate General Counsel for the Air and Radiation Law Office, Office of General Counsel (Mail Code 2344A), U.S. EPA, 1200 Pennsylvania Ave. NW., Washington, DC 20460.

III. Background

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 non-air 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). In addition to new sources, existing affected sources that are modified or reconstructed are also subject to this final rule.

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 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 latest review of the Kraft Pulp Mills NSPS was proposed on May 23, 2013, under 40 CFR part 60, subpart BBA for emission units commencing construction, reconstruction or

modification after that date. This action finalizes this latest review, conducted pursuant to CAA section 111(b)(1)(B).

IV. Summary of the Final NSPS Review

A. What are the final rule requirements for kraft pulp mills?

1. Emission Limits

The NSPS for Kraft Pulp Mills (40 CFR 60, subpart BB) applies for digester systems, BSW systems, multiple-effect evaporator systems, condensate stripper systems, recovery furnaces, SDTs and lime kilns for which construction, modification or reconstruction commenced after September 24, 1976, and on or before May 23, 2013. Through this final NSPS review, the EPA is promulgating a new 40 CFR part 60, subpart BBa containing emission limits for affected sources constructed, modified or reconstructed after May 23, 2013. In this final rule (40 CFR 60, subpart BBa), the EPA is:

- Reducing the NSPS filterable PM limit for new and reconstructed recovery furnaces from 0.044 gr/dscf (in subpart BB) to 0.015 gr/dscf.
- Maintaining the current NSPS filterable PM limit of 0.044 gr/dscf for modified recovery furnaces.
- Reducing the NSPS opacity limit for recovery furnaces from 35-percent (in subpart BB) to 20-percent opacity, clarifying that the opacity limit does not apply where an ESP is used in combination with a wet scrubber, and reducing the monitoring allowance from 6 percent (in subpart BB) to 2 percent of the 6-minute opacity averages.
- Reducing the NSPS filterable PM limit for lime kilns from 0.066 gr/dscf for gas-fired kilns and 0.13 gr/dscf for liquid-fired kilns (in subpart BB) to 0.064 gr/dscf for modified lime kilns (all fuel types) and 0.010 gr/dscf for new or reconstructed lime kilns (all fuel types).
- Adding a 20-percent opacity limit for lime kilns equipped with ESPs with a 1-percent monitoring allowance and clarifying that the limit does not apply where an ESP is used in combination with a wet scrubber.
- Reducing the NSPS filterable PM limit for new and reconstructed SDTs associated with new or reconstructed recovery furnaces from 0.2 lb/ton BLS (in subpart BB) to 0.12 lb/ton BLS.
- Maintaining the current NSPS filterable PM limit of 0.2 lb/ton BLS for modified and new and reconstructed SDTs not associated with a new or reconstructed recovery furnace.
- Maintaining the current NSPS TRS limit for straight recovery furnaces at 5 parts per million by dry volume (ppmdv) and restricting the 1-percent monitoring allowance for TRS emissions

to 30 ppmdv or less. Previously, there was no maximum TRS limit for these periods in subpart BB.

- Maintaining the current NSPS TRS limit for cross recovery furnaces at 25 ppmdv and adding a 1-percent monitoring allowance for TRS emissions restricted to 50 ppmdv. Previously, there was no maximum TRS limit for these periods in subpart BB.
 - Maintaining the current NSPS TRS standards for digester systems, BSW systems, evaporator systems and condensate stripper systems.
 - Specifying that sources which comply with the subpart BBa TRS standards for digester systems, BSW systems, evaporator systems and condensate stripper systems by venting to a combustion device such as a lime kiln, recovery furnace, incinerator, or other device (e.g., a boiler) or a non-combustion device must collect gases in an LVHC or HVLC closed-vent system meeting the provisions of 40 CFR 63.450 of subpart S.
 - Maintaining the current NSPS TRS limit for lime kilns at 8 ppmdv and adding a 1-percent monitoring allowance restricted to 22 ppmdv.
 - Maintaining the current NSPS TRS limit for SDTs at 0.033 lb/ton BLS.
- 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 H₂S for SDTs) measured by EPA Method 16, 16A, 16B or 16C. Continuous monitoring of opacity is required for recovery furnaces and lime kilns that are not using wet scrubbers. Continuous monitoring of TRS emissions is required for recovery furnaces, lime kilns and other affected sources that comply with TRS concentration limits. This final rule states that the filterable PM and TRS standards apply at all times as specified in the monitoring and testing provisions in subpart BBa.

2. Parameter Monitoring Requirements

The EPA reviewed the subpart BB parameter monitoring requirements and is making several changes within subpart BBa. First, the EPA is promulgating ESP parameter monitoring requirements for recovery furnaces and lime kilns equipped with ESPs to enable affected units to show continuous compliance with the filterable PM concentration standards at all times, including periods when the opacity monitoring allowance is used. The EPA is requiring 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.

Second, the EPA is requiring wet scrubber parameter monitoring for recovery furnaces, SDTs and lime kilns equipped with wet scrubber systems (including combined ESP/scrubber systems). The parameter monitors will measure the wet scrubber pressure drop and scrubbing liquid flow rate (or scrubbing liquid supply pressure). Scrubber fan amperage monitoring is included in this final rule 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).

Third, for recovery furnaces and lime kilns equipped with an ESP in combination with a wet scrubber system, the EPA is requiring ESP and wet scrubber parameter monitoring in place of opacity monitoring.

Also, subpart BBa specifies that parameters must be measured and recorded at least once every 15 minutes and reduced to 12-hour block averages, with two exceptions. When an opacity monitor is also used, the ESP parameters must be reduced to a semiannual average for use in the opacity monitoring allowance determination. The EPA is specifying a 5-minute data recording frequency and 3-hour block averaging time for incinerator temperature measurements required under subpart BBa.

3. Testing Requirements

As part of an ongoing effort to improve compliance with federal air emission regulations, the EPA reviewed the current filterable PM and TRS testing requirements of subpart BB and is including testing requirements for subpart BBa that are different from subpart BB in the following ways. First, although there is no emission limit for condensable PM in subpart BBa, the EPA is adding condensable PM to the list of pollutants to test to gather data to develop a broader understanding of condensable PM emissions from pulp and paper combustion sources. Second, the EPA is requiring repeat air emissions performance testing once every 5 years for facilities subject to NSPS subpart BBa. This final rule requires repeat air emissions testing for filterable PM, condensable PM and TRS once every 5 years for recovery furnaces, SDTs and lime kilns. Third, the EPA is including 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). Fourth, the EPA is updating the method used to determine whether a kraft recovery furnace is a straight or cross recovery furnace to refer to the latest TAPPI Method T624 cm-11.

As in subpart BB, emission testing for subpart BBa is to be performed under representative operating conditions. Section 60.8(c) of the NSPS General Provisions is replaced in 40 CFR 60.285a(a) with a similar paragraph that states that testing is to be conducted under representative conditions and not during periods of startup, shutdown or malfunction.

4. Reporting and Recordkeeping Requirements

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 semiannual reports of performance tests and excess emissions as specified in 40 CFR 60.7(c).

Reporting and recordkeeping requirements are being included as separate sections within subpart BBa. Under this final rule, owners/operators subject to subpart BBa are 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 is required to report all exceedances of the standard, including exceedances that are the result of a malfunction. The malfunction recordkeeping requirements will 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. In addition to the recordkeeping requirements specified in subpart BBa, 40 CFR 60.7(b) of the General Provisions requires records of the occurrence and duration of SSM events.

Under this final rule, owners/operators are required to report all performance test results (including electronic copies, as specified in section IV.D below) and excess emissions. Sections 60.7(c)(2) and 60.7(d) of the General Provisions require identification of periods of excess emissions that occur during SSM events. The frequency of reporting under subpart BBa is semiannually, the same as for subpart BB, and consistent with NESHAP requirements. Further, we are including 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.

5. Other Miscellaneous Differences Between Subpart BBa and Subpart BB

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

- Revised 40 CFR 60.17 to incorporate by reference ANSI/ASME PTC 19.10–1981 and TAPPI T624 cm-11 for subpart BBa.
- Revised the definitions section in 40 CFR 60.281a to alphabetize definitions; remove paragraph numbers; remove the definition for black liquor oxidation (BLO) system; add definitions for affirmative defense, closed-vent system, condensable PM, filterable PM, HVLC closed-vent system, LVHC closed-vent system and monitoring system malfunction; and revise the definition for digester system to include chip bins using live steam.
- Revised the wording of the PM standard in 40 CFR 60.282a and 40 CFR 60.285a to clarify that the PM emission limits in 40 CFR 60.282a and the Method 5 PM emission test in 40 CFR 60.285a refer to filterable PM, to avoid confusion with the inclusion of Method 202 condensable PM testing.
- Revised the wording of the TRS standard in 40 CFR 60.283a(a)(1) to clarify that only “one of” the conditions in 40 CFR 60.283a(a)(1)(i) through (vi) needs to be met in lieu of the 5 ppm_{dv} TRS limit for digester systems, BSW systems, evaporator systems and condensate stripper systems.
- Revised the monitoring provisions in 40 CFR 60.284a(a)(1) and (2) to cite Performance Specifications 1, 3 and 5 for opacity, O₂ and TRS continuous monitoring systems, respectively, to conform with 40 CFR 60.284a(f).
- Revised the TRS monitoring provisions in 40 CFR 60.284a(a)(2) to clarify that the range of the continuous monitoring system must encompass all expected concentration values, including the zero and span values used for calibration.
- Revised the monitoring provisions in 40 CFR 60.284a(a)(2)(ii) to specify that the span of O₂ monitoring systems is 21 percent instead of 25 percent, so that air can be used instead of a calibration gas in span checks.
- Revised the monitoring and recordkeeping provisions in 40 CFR 60.284a(b)(1) and 40 CFR 60.287a(b)(3) to remove reference to BLO systems which were excluded from NSPS applicability during the 1986 NSPS review.

- Revised the O₂ correction equation in 40 CFR 60.284a(c)(1)(iii) for TRS continuous emission monitoring system (CEMS) data to clarify that the concentration to be corrected is a “12-hour average of the measured concentrations.”

- Revised the excess emissions and recordkeeping provisions in 40 CFR 60.284a(d)(3)(ii) and 40 CFR 60.287a(b)(3) relating to combustion temperature measurements to clarify that the provisions apply when an incinerator is used as the combustion device.

- Added provisions to 40 CFR 60.284a(d)(3)(iii) specifying that periods of excess emissions include all times when gases from digester systems, BSW systems, evaporator systems and condensate stripper systems are not routed through the closed-vent system.

- Revised the provisions in 40 CFR 60.284a(e)(1) to change the period for calculating the monitoring allowance from quarterly to semiannual.

- Revised the citations for the EPA test methods in 40 CFR 60.285a to cite the specific appendices in parts 51 and 60 where the methods are located.

- Used “must” instead of “shall” throughout subpart BBa, consistent with plain language guidance.

B. What are the requirements during periods of startup, shutdown and malfunction?

1. Periods of Startup or Shutdown

In reviewing the standards in subpart BB, and in establishing 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 established alternate standards for those periods. Instead, the EPA is promulgating standards that apply at all times, including startup and shutdown periods. We analyzed continuous monitoring data and parametric methods for demonstrating continuous compliance and developed rule provisions pertaining to continuous monitoring that encompass or address startup and shutdown periods. These provisions include:

- Monitoring allowances that specify a certain number of exceedances that will not be considered as violations. These allowances were developed through review of TRS CEMS and continuous opacity monitoring system (COMS) datasets that included SSM periods, and are used in conjunction with ESP parameter monitoring (for opacity) and upper limits (for TRS) to ensure the emission standards are continuous. The PM standard is a

continuous standard that applies at all times.

- A provision for enforcement authorities to consider the uncorrected TRS concentration during periods of startup and shutdown if O₂ levels in the stack approach ambient conditions where the O₂ correction equation could cause an otherwise-compliant TRS measurement to exceed the applicable emission limit.

- For ESP parameter monitors, provisions that define excess emissions as ESP parameter measurements below the minimum requirements during times when BLS or lime mud is fired (as applicable).

- For ESP parameter monitors used on combined ESP/scrubber systems, language that allows facilities to use only secondary voltage (and not secondary current or total secondary power) to demonstrate compliance during periods of startup and shutdown because secondary current or the total secondary power calculated using secondary current may not meet the operating limit established during the performance test as BLS or lime mud is fired initially.

- For wet scrubber parameter monitors, language that allows facilities 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.

- For temperature monitors, a lengthened 3-hour block averaging time, and provisions that acknowledge that the minimum temperature of 1,200 °F is not a requirement during periods when an incinerator is not burning TRS (e.g., during incinerator warm-up and cool-down or when an alternative control device is used).

With the above monitoring provisions that address periods of startup and shutdown, the EPA concluded that alternative standards (e.g., work practices) during startup and shutdown are unnecessary. Two technical memoranda available in the docket for this action (EPA-HQ-OAR-2012-0640) provide our analysis of monitoring systems during startup and shutdown for pulp and paper processes subject to subpart BBa.^{1,2} Additional clarifications relative to the final rule requirements during periods of startup and shutdown

are provided in section V.C of this preamble.

2. Periods of Malfunction

Periods of startup, normal operations and shutdown are all predictable and routine aspects of a source's operation. However, by contrast, malfunction is defined as "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 occurring 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. CAA section 111 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 minimize emissions during malfunction periods, including preventative and corrective actions, as well as root cause analyses to ascertain and rectify excess emissions. The EPA would also consider whether the source's failure to comply with the CAA section 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, adding to the final rule an affirmative defense to civil penalties for violations of emission standards in this rule 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 also

¹ Updated Review of the Continuous Emission Monitoring and Continuous Opacity Monitoring Data from the Pulp and Paper ICR Responses for NSPS Sources.

² Review of Pulp and Paper Information Collection Request (ICR) Responses Pertaining to Startup and Shutdown of Subpart BB Equipment (March 22, 2013) (EPA-HQ-OAR-2012-0640-039 thru 045).

have added 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 added 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 or careless operation). For example, to successfully assert the added 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 added 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, under the added criteria, 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 in the final rule an affirmative defense 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 emission 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*, 714 F.3d 841 (5th Cir. Mar. 25, 2013) (upholding the EPA’s approval of affirmative defense provisions in a CAA State Implementation Plan). While “continuous” standards 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 DC 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 these earlier cases may no longer represent binding precedent in light of the CAA 1977 amendments and intervening case law such as *Sierra Club v. EPA*, they nevertheless support the EPA’s view that a system that incorporates some level of flexibility is reasonable and appropriate. The affirmative defense simply provides for a defense to civil penalties for violations that are proven to be beyond the control of the source. Through the incorporation of an affirmative defense, the EPA has formalized its approach to malfunctions. In a Clean Water Act (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 final 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. The EPA is promulgating the affirmative defense applicable to malfunctions under the delegation of general regulatory authority set out in section 301(a)(1) of the CAA, 42 U.S.C. 7601(a)(1), in order to balance this tension between provisions of the Act and the practical reality, as case law recognizes, that technology sometimes fails. See generally, *Citizens to Save Spencer County v. U.S. Environmental Protection Agency*, 600 F.2d 844, 873 (D.C. Cir. 1979) (using section 301(a) authority to harmonize inconsistent guidelines related to the implementation of federal preconstruction review requirements).

C. What are the effective and compliance dates of the standards?

The provisions of subpart BBa being promulgated in this action are effective on April 4, 2014. Emission units that commence construction, reconstruction or modification after May 23, 2013, must comply with the provisions of subpart BBa by April 4, 2014 or upon startup, whichever is later.

The initial performance test must be conducted within 60 days after achieving the maximum production rate at which the affected facility will be operated, but no later than 180 days after initial startup per 40 CFR 60.8(a). The first of the 5-year repeat tests must be conducted no later than 5 years following the initial performance test, and thereafter within 5 years from the date of the previous performance test. The date to submit performance test data through ERT is within 60 days after the date of completing each performance test.

D. What are the requirements for submission of performance test data to the EPA?

For the reasons provided in the proposed rule preamble, in subpart BBa the EPA is requiring owners and operators of kraft pulp mills to submit electronic copies of required performance test and performance evaluation reports to the EPA’s WebFIRE database. Data will be entered through an electronic emissions test report structure called the ERT. The ERT will generate an electronic report which will be submitted using the Compliance and Emissions Data Reporting Interface (CEDRI). The submitted report will be stored in both EPA’s Central Data Exchange (CDX) archive (the official copy of record) and in the WebFIRE database, making access to data very straightforward and easy. 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 requirement 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.³ 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>.

As explained in the proposal preamble, in addition to supporting regulation development, control strategy development and other air pollution control activities, having an electronic database populated with performance test data will 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.

V. Summary of Significant Changes Following Proposal

The following sections summarize the significant changes made to subpart BBa for this final rule to respond to public comments and to correct technical inconsistencies or editorial errors in the proposal. A detailed discussion of these and other public comments can be found in the response-to-comments document, available in Docket ID Number EPA-HQ-OAR-2012-0640.⁴

A. TRS Vent Gas Collection

The final subpart BBa rule, as proposed, allows sources to comply with the TRS standards for digester systems, BSW systems, evaporator systems and condensate stripper systems by venting emissions to a combustion device such as a lime kiln, recovery furnace, incinerator or other device (e.g., a boiler) or a non-combustion device. Industry commenters expressed concern that the proposed provisions were not consistent with the corresponding hazardous air pollutant (HAP) reduction provisions in subpart S which specify requirements

for closed-vent collection systems. Separately, another commenter expressed concern that the use of contaminated flash steam during chip steaming can lead to the release of TRS compounds, volatile organic compounds (VOC) and HAPs and urged the EPA to ensure standards are in place to prevent release of emissions.

In response to these concerns and to promote consistency with the subpart S requirements for closed-vent collection systems, we added provisions to this final rule requiring that sources collect and transport the vent gases through HVLC or LVHC closed-vent systems to incineration or other control devices, to match what is required under subpart S. We added definitions for “closed-vent system,” “high-volume, low-concentration (HVLC) closed-vent system,” and “low-volume, high-concentration (LVHC) closed-vent system” to this final rule to eliminate any conflicts with the subpart S excess emission allowances for closed-vent systems. We defined excess emissions as all times when gases are not routed through the closed-vent system. We also revised the definition for “digester system” to specifically include chip bins using live steam (flash steam) to clarify that these units are subject to regulation under subpart BBa as part of the digester system.

Further, an industry commenter made the specific comment that, with the removal of the SSM exemption, there are no provisions in subpart BBa specifically addressing short periods of safety-related venting of gases from digester systems, brown stock washer systems, multiple-effect evaporator systems or condensate stripper systems. According to the commenter, best available technology includes unavoidable periods when vent gases cannot be routed to the control device for safety reasons or when the control device is inoperable or necessarily operating at a reduced rate due to a malfunction. The subpart S excess emission allowances (see 40 CFR 63.443(e)(1)–(3)), currently address these types of excess emissions. The SSM exemption was previously removed from subpart S (77 FR 55698). The commenter noted that they provided more detail in previously submitted comments on subpart S which they attached for consideration. The commenter recommended that the EPA adopt the excess emission provisions in subpart S for digester, brown stock washer, evaporator and stripper systems covered by subpart BBa. We did not intend to propose a standard that removed the use of these allowances for NSPS units, creating a

standard more stringent than the NESHAP. Therefore, we have added language in this final rule that recognizes the current subpart S excess emission provisions for closed-vent systems. (Further discussion of the EPA’s anticipated review of the subpart S excess emission provisions is provided below.) These provisions define excess emissions as all times when gases are not routed through the closed-vent system. (See 40 CFR 60.284a(d).) We also addressed short periods of safety-related venting in 40 CFR 60.284a(e), which provides limited allowances of 1 percent of semiannual operating time for LVHC systems, or 4 percent of semiannual operating time for HVLC or combined LVHC/HVLC systems. As long as these time periods are not exceeded, excess emissions associated with short periods of safety-related venting will not be considered in violation of the closed-vent system requirements added to 40 CFR 60.283a(a)(1)(i) through (iii) and (v). Affected facilities are required to maintain and operate with good air pollution control practice for minimizing emissions during periods of excess emissions (including during safety-related venting), as specified in 40 CFR 60.284a(e)(2) of subpart BBa.

We acknowledge that representatives of the pulp and paper industry have submitted a petition for reconsideration of the final 40 CFR part 63, subpart S risk and technology (RTR) rule relating to safety-related venting of pulp mill vent gases.⁵ Additionally, in the subpart S RTR action (77 FR 55698) we deferred action on the review of the 40 CFR 63.443(e) excess emission allowances. We have acted at this time to create consistency between subpart BBa and subpart S in how these episodes are handled. However, we note that, when the EPA reviews the subpart S excess emission allowances, we will consider whether actions that we take after conducting that subpart S review should result in revisions to the NSPS for kraft pulp mills. It should also be noted that the standards in subpart S apply to HAP emissions from a broad range of pulp mill sources and will be applicable to existing sources, while the subpart BBa TRS standards will apply only for the small subset of subpart S sources that are constructed, modified or reconstructed after May 23, 2013. Consequently, if the subpart S standards are amended to become more stringent

³ As of March 2014, Methods 5, 17 and 202 are the test methods referenced in subpart BBa that are included in ERT. Methods 16, 16A, 16B, and 16C for TRS measurement are not yet supported by ERT. However, Method 16 (and variant) testing conducted after Methods 16, 16A, 16B, 16C are programmed into the ERT will be required to be reported electronically.

⁴ See the memorandum in the docket titled, *Kraft Pulp Mills New Source Performance Review (40 CFR Part 60, Subpart BBa), Final Amendments: Response to Public Comments on May 23, 2013 Proposal*.

⁵ Letter from P. Noe, AF&PA, to Lisa Jackson. *Petition for Reconsideration of National Emission Standards for Hazardous Air Pollutants From the Pulp and Paper Industry; Final Rule*, 77 FR 55698 (Sept. 11, 2012).

with respect to pulp mill safety-related venting, then those amended subpart S standards will apply equally to subpart BBa sources, because all subpart BBa sources (as well as all subpart BB sources and any sources subject to future revisions to the Kraft Pulp Mill NSPS) will also be subject to subpart S (including any revisions made to it in the future), regardless of when the next NSPS review to update subpart BBa is performed.

B. Startup, Shutdown and Malfunction

One commenter supported and multiple commenters objected to our proposal to remove the SSM exemption from the subpart BBa standards. The rationale for our removal of the SSM exemption was provided in the preamble to the proposed rule, is provided in section IV.B of this preamble, and is also discussed in the response-to-comments document⁶ along with a description of the revisions to the NSPS monitoring requirements made to ensure that the NSPS provisions remain achievable following removal of the SSM exemption.

Multiple commenters expressed confusion regarding the provisions in the proposed rule briefly stating that the PM and TRS standards apply at all times (40 CFR 60.282a(b) and 40 CFR 60.283a(b), respectively). The comments revealed confusion regarding which paragraphs of the NSPS General Provisions relating to SSM are superseded by subpart BBa or remain applicable. In response to these comments, we revised 40 CFR 60.282a(b) and 40 CFR 60.283a(b) to clarify that the standards apply at all times as specified in the monitoring and testing provisions of the rule (40 CFR 60.284a and 40 CFR 60.285a) and to clarify the relationship between the continuous standards and provisions for testing, monitoring and the monitoring allowances in subpart BBa. We also offer the following clarifications relative to the relationship between the General Provisions and subpart BBa:

- The definitions of SSM in 40 CFR 60.2 apply to subpart BBa.
- The requirement to maintain records of SSM periods and periods when continuous monitoring systems are inoperative under 40 CFR 60.7(b) applies to subpart BBa.
- The requirements under 40 CFR 60.7(c)(2) to identify in the excess emissions report each period of excess emissions that occurs during SSM and

the nature of any malfunction apply to subpart BBa.

- Inclusion of startup and shutdown in the summary report format provided in 40 CFR 60.7(d) applies for subpart BBa.
- The 40 CFR 60.11(c) exemption from the opacity standards during SSM is superseded for subpart BBa by 40 CFR 60.282a(c).
- The 40 CFR 60.11(d) requirement to use good air pollution control practices at all times including SSM applies to subpart BBa.

Furthermore, we added a clarifying statement to 40 CFR 60.285a(a) to repeat only the portion of 40 CFR 60.8(c) that applies under subpart BBa (i.e., the requirement that performance tests be conducted under representative conditions applies). The SSM exemption phrase “nor shall emissions in excess of the level of the applicable emission limit during periods of startup, shutdown and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard” was eliminated from the revised wording of 40 CFR 60.8(c) incorporated into subpart BBa in light of the DC Circuit’s decision in *Sierra Club v. EPA* vacating the 40 CFR part 63 SSM exemption provisions. The revised wording in 40 CFR 60.285a(a) of subpart BBa supersedes 40 CFR 60.8(c).

C. Opacity Monitoring

One commenter questioned whether a source controlled by an ESP/scrubber combination would be relieved from meeting the opacity requirements in this final rule. In response to this comment, we revised the opacity standards for recovery furnaces and lime kilns to clarify that units equipped with a combination ESP and wet scrubber system are not subject to the opacity standards, because opacity monitoring is not appropriate for these units. This does not create an exemption or a standard that does not apply at all times because continuous compliance with the filterable PM standards is demonstrated through ESP and wet scrubber parameter monitoring for combined ESP/scrubber systems.

D. TRS and Oxygen Monitoring

Measurements exceeding instrument span. Three commenters requested that the EPA clarify the procedure for reporting and treatment of uncorrected TRS concentrations that exceed the span value (30 ppm_{dv}) for the TRS CEMS instrument. In response to these comments, we note that data above the instrument span have value and are required to be included in any CEMS

hourly average or other long-term rolling average calculation; otherwise, facilities could inappropriately dismiss noncompliant values as invalid data. Consequently, we added language to the final rule to clarify that the range of the continuous monitoring system must encompass all expected concentration values, including the zero and span values used for calibration.

Recovery furnace upper limit. One commenter argued that it was inappropriate for the EPA to use data from straight recovery furnaces to establish the TRS monitoring allowance upper limit for cross recovery furnaces. In response to this comment, we revised this final rule to clarify that the 1-percent allowance, restricted to 30 ppm_{dv}, applies to TRS emissions from straight recovery furnaces. The cross recovery furnace TRS emission limit is higher than the straight recovery TRS limit 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 O₂ available to oxidize the sulfur compounds. Because we do not have continuous monitoring data for cross recovery furnaces to analyze (with no known cross recovery furnaces subject to NSPS at this time), we are setting the upper TRS limit for cross recovery furnaces at the instrument span of 50 ppm_{dv} for these units. This upper limit can be reevaluated during the next NSPS review should data become available for cross recovery furnaces subject to NSPS in the future.

E. Temperature Monitoring

One commenter recommended that the temperature monitoring requirement should only apply when TRS control is achieved in a stand-alone incinerator and requested that the EPA make this clarification in this final rule. The commenter noted that temperature monitoring is not required in subpart S for boilers, lime kilns and recovery furnaces that combust pulping vent gases because these units normally operate at temperatures higher than 1,200 °F. We revised the relevant provisions of subpart BBa to clarify that combustion temperature monitoring is required only when an incinerator is used as the combustion device in response to this comment.

⁶ See the memorandum in the docket titled, *Kraft Pulp Mills New Source Performance Review (40 CFR Part 60, Subpart BBa), Final Amendments: Response to Public Comments on May 23, 2013 Proposal*.

F. ESP Parameter Monitoring

Two commenters requested that the EPA add total secondary power as an alternative to monitoring ESP secondary voltage and secondary current for recovery furnace ESPs to be consistent with the monitoring alternative provided in the proposed rule for lime kiln ESPs. We made the conforming edits requested to clarify our intent, as proposed, that monitoring of total secondary power is an alternative for recovery furnace ESPs.

Another commenter requested that the EPA use only ESP secondary voltage monitoring to determine compliance during periods of startup and shutdown for combined ESP/scrubber control systems. The commenter explained that the first 12-hour block average ESP secondary current (or total secondary power) may not be within the range achieved during the last performance test, as firing of BLS or lime mud increases or decreases during startup or shutdown, but the ESP would still be operating optimally using its automated power management system. The commenter requested that the EPA exclude from the definition of excess emissions all 12-hour average measurements of secondary current (or total secondary power) during startup and shutdown that are less than the site-specific operating parameter limits, as it has done for scrubber pressure drop. We agree with the commenter that secondary current (or total secondary power) can vary during startup and shutdown. We changed the definition of ESP-related excess emissions for combined ESP/scrubber controls in 40 CFR 60.284a(d)(5) in response to this comment to include all 12-hour block averages of ESP secondary voltage below the minimum operating limit at all times (including startup and shutdown), and 12-hour block averages of secondary current (or total secondary power) below the minimum operating limit at all times except during startup and shutdown. The rule changes make the startup/shutdown accommodations for ESPs comparable to the parameter monitoring requirements for wet scrubbers during startup and shutdown. This definitional change does not apply for ESP systems that have longer averaging periods in conjunction with an opacity limit. For further discussion, see the response-to-comments document found in the docket.

G. Averaging Period for Determining Monitoring Allowances

In response to our request for comment on whether a quarterly or semiannual period would be more

appropriate for calculation of the monitoring allowances in 40 CFR 60.284a(e), multiple commenters supported a semiannual period. One state agency commenter specifically supported changing the ESP parameter averaging period from quarterly to semiannually when an opacity monitor is also used on the ESP. The commenter also supported using a semiannual instead of a quarterly basis for determining the TRS and opacity monitoring allowances. In response to these comments and consistent with the semiannual reporting frequency for subpart BBa, we revised the period for calculating the opacity and TRS monitoring allowances from quarterly to semiannually. We made a corresponding change to a semiannual basis for the ESP parameter averaging period for ESPs that also monitor opacity.

H. Other Miscellaneous Changes

A few additional changes were made to the proposed rule either as a result of public comments, to correct references or to ensure conformity among the various rule sections. These changes are described below.

BLO systems. One commenter asked that the EPA remove outdated references to BLO systems from the rule because subpart BBa does not contain any specific requirements for these systems. We agree with this editorial change and removed the definition of “black liquor oxidation system” and other inadvertently remaining references to BLO systems from this final rule. The 1986 review of the kraft pulp mills NSPS removed the BLO system from the list of regulated emission units.

Testing frequency. One commenter requested that the EPA revise the repeat testing frequency from once every 60 months to once every 5 years to provide maximum operational flexibility. In particular, the requested change would make clear that the repeat testing could be done at any point during the fifth calendar year (which is consistent with the requirements for CAA title V permitting) as opposed to requiring testing to be done during the 60th month. We agree with the commenter and revised the testing provisions of this final rule accordingly.

Performance specifications. In the proposed rule, we specified that sources must install, certify and operate their opacity and TRS continuous monitoring systems in accordance with Performance Specifications 1 and 5, respectively, in Appendix B to 40 CFR part 60. To correct an oversight, we added a citation to this final rule for

Performance Specification 3 for the O₂ continuous monitoring system used to correct the TRS CEMS data for O₂ concentration.

Incorporation by reference. In reviewing the testing provisions in subpart BBa for the final rule, we noted that the test method for determining whether a kraft recovery furnace is a straight or cross recovery furnace, which is cited in this final rule and incorporated by reference in 40 CFR 60.17 as TAPPI T624 os-68, is out-of-date, as is the address for obtaining a copy of the method. We updated the testing provisions in this final rule and the IBR provisions in 40 CFR 60.17 to cite the latest version of the method—TAPPI T624 cm-11. We also updated 40 CFR 60.17 to cite the current address for obtaining a copy of the method.

VI. Summary of Cost, Environmental, Energy and Economic Impacts

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.

The EPA presented estimates of the impacts for subpart BBa, which revises the performance standards for new, modified or reconstructed emission units at kraft pulp mills, in the preamble to the proposed rule and in the docket for this rulemaking. (See 78 FR 31331–31332, and the memorandum, *Emissions Inventory for Kraft Pulp Mills and Costs/Impacts of the Section 111(b) Review of the Kraft Pulp Mills NSPS*.) These impact estimates have not changed since proposal because we have not changed any rule requirements in a way that would alter the projected number of affected facilities or costs of compliance. While we added language to subpart BBa to clarify that TRS emissions from new, modified or reconstructed pulping emission sources must be delivered to incineration or other controls through a closed-vent collection system as required under 40 CFR 63.450 of subpart S, there is no incremental cost associated with this requirement in subpart BBa because the closed-vent collection system standards are already required for new and existing sources under subpart S.

The EPA estimates that the total increase in nationwide annual cost associated with this final rule is \$389,900 for all of the emission units projected to be constructed, modified or reconstructed between 2013 and 2018. Costs are based on the third quarter of 2012. The impacts are expressed as incremental differences between the impacts of emission units complying with subpart BBa and the baseline (e.g.,

NSPS subpart BB or NESHAP subpart MM) requirements for these sources. The impacts represent emission units at kraft pulp mills projected to commence construction, reconstruction or modification over the 5 years following May 23, 2013. No additional control devices or other equipment are expected to be needed to meet the NSPS requirements beyond those that would already be installed to meet the baseline requirements for these emission units. Thus, no emission reductions, energy impacts or secondary air emission impacts are expected to result from this final rule.

This final 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 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 final rule have been submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501, *et seq.* The information collection requirements are not enforceable until OMB approves them.

These 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 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 IV.A 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 standards 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 final rule, the EPA is considering the affirmative defense in its estimate of burden in the information collection request (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 records 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 emission 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 emission 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/yr. The annual operating and maintenance (O&M) costs are \$155,880/yr. The total annualized capital and O&M costs are \$567,180/yr. Burden is defined in 5 CFR 1320.3(b).

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control

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

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. Small entities include small businesses, small organizations and small governmental jurisdictions.

For purposes of assessing the impacts of this final 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 final rule on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. 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 final rule. The EPA estimates that all affected small entities will have annualized costs of less than 0.1 percent of their sales. Thus, the EPA concludes that this final rule will not have a significant economic impact on a substantial number of small entities.

For more information on the small entity impacts associated with this rule, 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 public docket. Although this final rule will not have a significant economic impact on a substantial number of small entities, the EPA nonetheless tried to reduce the impact of this final rule on small entities. When developing these 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.

D. Unfunded Mandates Reform Act

This final 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 one year. This final rule is not expected to impact state, local or tribal governments. The nationwide annualized cost of this final rule for affected industrial sources is estimated to be \$389,900/yr. Thus, this final rule is not subject to the requirements of sections 202 and 205 of the Unfunded Mandates Reform Act (UMRA).

This final 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 final 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 final rule will supersede state regulations. Thus, Executive Order 13132 does not apply to this rule.

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 final 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 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.

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

The EPA interprets Executive Order 13045 (62 FR 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 an analysis of the degree of emission reduction that is achievable through the application of the best system of emissions reduction, as provided in CAA section 111.

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

This action is not subject to 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 National Technology Transfer and Advancement Act (NTTAA) of 1995, Public Law 104-113 (15 U.S.C. 272 note), directs the EPA to use voluntary consensus standards (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 rulemaking involves technical standards. The EPA has decided to use one VCS in this rulemaking. The VCS, ASME PTC 19.10-1981, "Flue and Exhaust Gas Analyses," is cited in this 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), Two Park Avenue, New York, NY 10016-5990.

The EPA has identified two other VCS as being potentially applicable to this final 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 final rule currently provides the use of COMS as an alternative 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 alternative for only the manual portion and not the instrumental portion of Method 16A, and sources are already allowed four EPA methods for measuring TRS (Methods 16, 16A, 16B and 16C). See the docket for this rule for the reasons for these determinations.

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 final 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 three miles of any source potentially affected by this rulemaking. This segment of the population exceeds the national average by 5 percentage points (18 percent v. 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 with this rule is expected to better inform the agency of the emissions associated with this source category. This will ensure better compliance with this final 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).

K. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801, *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that, before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. The EPA will submit a report containing this final rule and other required information to the U.S. Senate, the U.S. House of Representatives and the Comptroller General of the United States prior to publication of this final rule in the **Federal Register**. A major rule cannot take effect until 60 days after it is published in the **Federal Register**. This action is not a “major rule” as defined by 5 U.S.C. 804(2). This final rule will be effective on April 4, 2014.

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: March 14, 2014.

Gina McCarthy,
Administrator.

As described in the preamble above, the EPA amends 40 CFR part 60 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:
 - a. Revising paragraph (f) introductory text,
 - b. Revising paragraph (f)(14),
 - c. Revising paragraph (o) introductory text, and
 - d. Revising paragraph (o)(1).
- The amendments read as follows:

§ 60.17 Incorporations by reference.

* * * * *

(f) The following material is available for purchase from the American Society of Mechanical Engineers (ASME), Two Park Avenue, New York, NY 10016–5990, Telephone (800) 843–2763, and is also available at the following Web site: <http://www.asme.org>. * * * * *

(14) ASME/ANSI 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), 60.106(e), 60.104a(d), (h), (i), and (j), 60.105a(d), (f), and (g), § 60.106a(a), § 60.107a(a), (c), and (d), tables 1 and 3 to subpart EEEE, tables 2 and 4 to subpart FFFF, table 2 to subpart JJJJ, § 60.285a(f), §§ 60.4415(a), 60.2145(s) and (t), 60.2710(s) (t), and (w), 60.2730(q), 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).

* * * * *

(o) The following material is available for purchase from the Technical Association of the Pulp and Paper Industry (TAPPI), 15 Technology Parkway South, Suite 115, Peachtree Corners, GA 30092, Telephone (800) 332–8686, and is also available at the following Web site: <http://www.tappi.org>.

(1) TAPPI Method T 624 cm-11, (Copyright 2011), IBR approved, for §§ 60.285(d) and 60.285a(d).

* * * * *

- 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.

- 60.280a Applicability and designation of affected facility.
 60.281a Definitions.
 60.282a Standard for filterable particulate matter.
 60.283a Standard for total reduced sulfur (TRS).
 60.284a Monitoring of emissions and operations.
 60.285a Test methods and procedures.
 60.286a Affirmative defense for violations of emission standards during malfunction.
 60.287a Recordkeeping.
 60.288a Reporting.

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. Any facility under paragraph (a) of this section that commenced

construction, reconstruction, or modification after September 24, 1976, and on or before May 23, 2013 is subject to the requirements of subpart BB of this part.

§ 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.

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 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.

Closed-vent system means a system that is not open to the atmosphere and is composed of piping, ductwork, connections, and, if necessary, flow-inducing devices that transport gas or vapor from an emission point to a control device.

Condensable particulate matter, for purposes of this subpart, means particulate matter (PM) measured by EPA Method 202 of Appendix M of 40 CFR part 51 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, total reduced sulfur (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) including chip bins using live steam, 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.

High volume, low concentration (HVLC) closed-vent system means the gas collection and transport system used to convey gases from the brown stock washer system to a control device.

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.

Low volume, high concentration (LVHC) closed-vent system means the gas collection and transport system used to convey gases from the digester system, condensate stripper system, and multiple-effect evaporator system to a control device.

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 shall 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 gram per dry standard cubic meter (g/dscm) (0.044 grain per dry standard cubic foot (gr/dscf)) corrected to 8-percent oxygen.

(ii) Exhibit 20-percent opacity or greater, where an electrostatic precipitator (ESP) emission control device is used, except where it is used in combination with a wet scrubber.

(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, except where it is used in combination with a wet scrubber.

(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 gram per kilogram (g/kg) (0.2 pound per ton (lb/ton)) of 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 (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, except where it is used in combination with a wet scrubber.

(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, except where it is used in combination with a wet scrubber.

(b) These standards apply at all times as specified in §§ 60.284a and 60.285a.

(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 parts per million (ppm) by volume on a dry basis, corrected to 10-percent oxygen, unless one of the following conditions are met:

(i) The gases are collected in an LVHC or HVLC closed-vent system meeting the requirements of § 63.450 and combusted in a lime kiln subject to the provisions of either paragraph (a)(5) of this section or § 60.283(a)(5); or

(ii) The gases are collected in an LVHC or HVLC closed-vent system meeting the requirements of § 63.450 and combusted in a recovery furnace subject to the provisions of either paragraphs (a)(2) or (3) of this section or § 60.283(a)(2) or (3); or

(iii) The gases are collected in an LVHC or HVLC closed-vent system meeting the requirements of § 63.450 and 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 collected in an LVHC or HVLC closed-vent system meeting the requirements of § 63.450 and 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 (0.01 lb/ton) air dried pulp (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 (0.033 lb/ton) of black liquor solids as hydrogen sulfide (H₂S).

(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) These standards apply at all times as specified in §§ 60.284a and 60.285a.

§ 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. You must install, certify, and operate the continuous oxygen monitoring system in accordance with Performance Specification (PS) 3 in Appendix B to 40 CFR part 60. These systems must be located downstream of the control device(s). The range of the continuous monitoring system must encompass all expected concentration values, including the zero and span values used for calibration. 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, 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)(i) 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:

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

Where:

C_{corr} = the concentration corrected for oxygen.

C_{meas} = the 12-hour average of the measured concentrations 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 12-hour average of the measured 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 semiannual 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 average 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 concentrations 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 and an incinerator is used as the combustion device.

(iii) All times when gases are not routed through the closed-vent system to one of the control devices specified in § 60.283a(a)(1)(i) through (iii) and (v).

(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 measurements below the minimum site-specific limit established during performance testing during times when BLS or lime mud is fired (as applicable) including startup and shutdown.

(iv) All 12-hour block average ESP 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) except during startup and shutdown.

(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 the semiannual reporting period does not exceed:

(i) One percent for TRS emissions from straight recovery furnaces, provided that the 12-hour average 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 (or total secondary power) averaged over the semiannual period remained above the minimum operating limits established during the performance test.

(iii) One percent for TRS emissions from lime kilns, provided that the 12-hour average 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 semiannual period remained above the minimum operating limits established during the performance test.

(v) One percent for TRS emissions from cross recovery furnaces, provided that the 12-hour average TRS concentration does not exceed 50 ppm corrected to 8-percent oxygen.

(vi) For closed-vent systems delivering gases to one of the control devices specified in § 60.283a(a)(1)(i) through (iii) and (v), the time of excess emissions divided by the total process operating time in the semiannual reporting period does not exceed:

(A) One percent for LVHC closed-vent systems; or

(B) Four percent for HVLC closed-vent systems or for HVLC and LVHC closed-vent systems combined.

(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 12-hour average TRS concentration uncorrected for oxygen may be considered when determining compliance with the excess emission provisions in paragraphs (e)(1)(i) and (iii) of this section during periods of startup or shutdown when the 12-hour average stack oxygen percentage approaches ambient conditions. If the 12-hour average 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 12-hour average 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. Section 60.8(c) must be read as follows for purposes of this subpart: Performance tests shall be conducted under such conditions as the Administrator shall specify to the plant operator based on representative performance of the affected facility. The owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown and malfunction shall not constitute representative conditions for the purpose of a performance test.

(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 5 years 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 40 CFR part 51.

(c) The owner or operator must determine compliance with the filterable particulate 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, dry standard cubic meter per hour (dscm/hr) (dry standard cubic feet per hour (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 5 years following the previous performance test using the procedures in paragraphs (c)(1) through (3) 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 40 CFR 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) 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 (Na₂O) and substituted into the following equation to determine the green liquor sulfidity:

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

Where:

GLS = green liquor sulfidity, percent.

C_{Na₂S} = concentration of Na₂S as Na₂O, milligrams per liter (mg/L) (grains per gallon (gr/gal)).

C_{NaOH} = concentration of NaOH as Na₂O, mg/L (gr/gal).

C_{Na₂CO₃} = concentration of Na₂CO₃ as Na₂O, mg/L (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 5 years 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(1)(vi) and (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.

C_{TRS} = average combined concentration of TRS, ppm.

F = conversion factor, 0.001417 g H₂S/cubic meter (m³)-ppm (8.846 × 10⁻⁸ lb H₂S/cubic foot (ft³)-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 5 years 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 (incorporated by reference—see § 60.17) 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 emission 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 incinerator 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, or condensate stripper system where the provisions of § 60.283a(a)(1)(iii) apply and an incinerator is used as the combustion device.

(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 (b). At the discretion of the delegated authority, you must also submit these reports, including the CBI, 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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