

**AGENDA  
STATE OF TENNESSEE  
REGULAR MEETING  
AIR POLLUTION CONTROL BOARD  
312 Rosa L. Parks Avenue  
Wednesday April 14, 2021  
9:30 A.M.**

**Location: Remote, via WebEx**

	<b>Item</b>	<b>Presenter</b>	<b>Page</b>
1.	Roll Call		
2.	Approval of the February 10, 2021 Air Pollution Control Board Meeting Minutes		2
3.	CEMS/COMS Rule Making Chapter 1200-03-10	Travis Blake	6
	<b>General Business</b>		
4.	NOx SIP Call source-specific SIP Revisions – PCA and Eastman Chemical	Travis Blake	28
5.	Landfill Rule Changes	Travis Blake	58
6.	Title V Program Financial Update	Mary-Margaret Chandler	
7.	Field Services Program Update	Martie Carpenter	

The meeting will be held in compliance with Tennessee Code Annotated Section 8-44-108, as amended by Chapter 490 of the 1999 Public Acts of the Tennessee General Assembly. The meeting will be conducted permitting participation by electronic or other means of communication. Consequently, some members of the Tennessee Air Pollution Control Board are allowed to and may participate by electronic or other means of communication and may not be physically present at the announced location of the meeting.

The meeting will be held in compliance with Executive Order No. 16, issued by Governor Lee on March 20, 2020 (extended by Executive Orders No. 34, issued by Governor Lee on May 6, 2020; and Executive Order No. 51 issued by Governor Lee on June 29, 2020; and Executive Order No. 60 issued by Governor Lee on August 28, 2020; and Executive Order No. 65 issued by Governor Lee on October 28, 2020; and Executive Order No. 71 issued by Governor Lee on December 22, 2020; and Executive Order No. 78 issued by Governor Lee on Feb. 26, 2021. As required by Executive Order No. 16, the meeting will comply with Tennessee Code Annotated Section 8-44-108(c). The meeting will be conducted through Webex and members of the Tennessee Air Pollution Control Board will participate by electronic or other means of communication.

Individuals with disabilities who require special accommodations or alternate communications formats should contact us at the Tennessee Department of Environment and Conservation, William R. Snodgrass Tennessee Tower, Division of Human Resources, 312 Rosa L. Parks Avenue 22<sup>nd</sup> Floor, Nashville, Tennessee 37243 at (615) 532-0200 (or TDD 1-800-848-0298 for hearing impaired callers) no less than five (5) days prior to the scheduled meeting so reasonable accommodations can be made.

Air Pollution Control Board  
of the  
State of Tennessee  
Regular Meeting

On Wednesday February 10, 2021 at 9:30 A.M., the Air Pollution Control Board of the State of Tennessee, (hereinafter, referred to as the "Board"), began its meeting on the 15th Floor of the Tennessee Tower in Conference Rooms A and B. The following Board members were present via WebEx.

Dr. Ronnè Adkins  
Dr. Joshua Fu  
Mr. Steve Gossett  
Dr. Shawn Hawkins  
Mr. Richard Holland  
Dr. Chunrong Jia  
Ms. Caitlin Jennings  
Mayor Ken Moore  
Ms. Amy Spann  
Mr. Greer Tidwell  
Mayor Larry Waters  
Mr. Jimmy West

The following Board members did not join the meeting.

Dr. John Benitez  
Mr. Mike Haverstick

Ms. Michelle Owenby, Director of Air Pollution Control, served as the Technical Secretary.

The first item was to elect a Vice Chair for 2020. Mayor Larry Waters was nominated for Vice Chair. Mr. Gossett made a motion to approve and Mr. Tidwell seconded the motion.

The Vice-Chair asked for a Roll Call:

Dr. Adkins	present	Dr. Benitez	absent
Dr. Fu	present	Mr. Gossett	present
Mr. Haverstick	absent	Dr. Hawkins	present
Mr. Holland	present	Dr. Jia	present
Ms. Jennings	present	Mayor Moore	present
Ms. Spann	present	Mr. Tidwell	present
Mayor Waters	present	Mr. West	present

The third item on the agenda was the approval of the minutes from the November 12, 2020 Board meeting. Mayor Moore made a motion to approve the minutes and Ms. Spann seconded the motion. The November 12, 2000 minutes were approved as written.

The Vice-Chair called for a roll call and the votes were as follows:

Dr. Adkins	yes	Mr. Holland	yes
Dr. Jia	yes	Dr. Fu	yes
Mr. Tidwell	yes	Mr. Gossett	yes
Ms. Jennings	yes	Mayor Waters	yes
Dr. Hawkins	yes	Mr. West	yes
Mayor Moore	yes	Ms. Spann	yes

The motion carried with twelve (12) affirmative votes.

At this time the Technical secretary welcomed Board members, presenters and attendees to the board meeting for November 12, 2020 and made the following statement. This meeting of the Tennessee Air Pollution Control Board is being held in compliance with Governor Lee's most recent Executive Order 73 issued on In an effort to protect the health, safety and welfare of Tennesseans in light of the COVID-19 outbreak, this meeting is being held electronically via WebEx.

The next item on the agenda was Conflict of Interest presented by Mr. Bill Miller with the Office of General Counsel. Mr. Miller reviewed all Conflict of Interest and made a determination that the majority of the Board qualified to serve. The Vice-Chair asked for a motion to approve. Mayor Moore made the motion and Dr. Fu seconded the motion.

The Vice-Chair called for a roll call and the votes were as follows:

Dr. Adkins	yes	Mr. Holland	yes
Dr. Jia	yes	Dr. Fu	yes
Mr. Tidwell	yes	Mr. Gossett	yes
Ms. Jennings	yes	Mayor Waters	yes
Dr. Hawkins	yes	Mr. West	yes
Mayor Moore	yes	Ms. Spann	yes

The motion carried with twelve (12) affirmative votes.

Mr. Jimmy Johnston with the division presented the Board with the FY2022 Title V Workload Analysis, Board Order 21-025. After discussion Mr. Holland made a motion to approve Board Order 21-025 and Mayor Moore seconded the motion.

The Vice-Chair called for a roll call and the votes were as follows:

Dr. Adkins	yes	Mr. Holland	yes
Dr. Jia	yes	Dr. Fu	yes
Mr. Tidwell	yes	Mr. Gossett	yes
Ms. Jennings	yes	Mayor Waters	yes
Dr. Hawkins	yes	Mr. West	yes
Mayor Moore	yes	Ms. Spann	yes

The motion carried with twelve (12) affirmative votes.

Mr. Travis Blake with the division presented the Board with a variance request for Eastman Chemical, S02 Ambient Monitoring, Board Order 21-014. After discussion Mr. Tidwell made a motion to approve Board Order 21-014 and Mr. Holland seconded the motion.

The Vice-Chair called for a roll call and the votes were as follows:

Dr. Adkins	yes	Mr. Holland	yes
Dr. Jia	yes	Dr. Fu	yes
Mr. Tidwell	yes	Mr. Gossett	abstain
Ms. Jennings	yes	Mayor Waters	yes
Dr. Hawkins	yes	Mr. West	yes
Mayor Moore	yes	Ms. Spann	yes

The motion carried with eleven (11) affirmative votes.

Ms. Mary-Margaret Chandler, business administrator for the Division provided a financial update for the Fiscal Year 2020.

Ms. Chandler stated that Fiscal Year 2020 was an unusual year. While the Division, fared well, we were presented with unprecedented challenges, no different than your respective companies and organizations.

As we noted for the Board in August, the Division faced uncertainty of the potential impacts of the pandemic. State level controls delayed hiring and purchasing, temporarily, as the Department of Finance & Administration navigated through new challenges. The vast majority of our staff worked from home. Non-essential travel has been eliminated, essential travel continues for necessary operation of our monitoring networks, ensuring compliance by regulated facilities, and responding to complaints, which much of this has been altered to minimize potential exposure. The I/M program was shut down for several weeks in 2020 in compliance with an executive order by the Governor, which impacted division non-Title revenue in FY2020. As we move through FY2021, we are returning to more traditionally normal processes for hiring and procurement.

A few of our highlights from this year's budget include:

- We were successful in leveraging technology to maintain necessary training and hold Unit meetings.
- As part of the Division's long-term transition to incorporate Alternative Workplace Solutions in our organization, we were able to reduce our facility cost in the Columbia Environmental Field Office and expect to maintain costs in Columbia below historical levels in the future. To the extent we have further opportunities to reduce facility related costs, the Division will continue to pursue those.
- As expected, the Division covered a portion of TDEC general and administrative expenses.
- The Division was not able to hold the annual staff meeting.

Title V collections covered Title V expenses in Fiscal Year 20, ending with 1.7 million dollars in the reserve to begin FY 2021. Title V facilities who derive their fees from actual emissions, use calendar year 2019 emissions, which pre-date the pandemic. The remaining sources determined 2020 Title V fees based on July 2019 through June 2020, which was partially during the pandemic. We expect revenue impacts from the pandemic on Title V fees for the next two years, considering the structure and basis of how fees are paid. Division operations are returning to pre-pandemic levels. The Division is committed to continue tightly controlling our expenses for business necessary work and providing updates to the Board as we move through this fiscal year and look ahead to what the program need may be in FY22-23.

There being no further business to discuss Mayor Moore made a motion to adjourn and Ms. Spann seconded the motion. The meeting was adjourned at 11:30.

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(Signed) Michelle Owenby, Technical Secretary  
Tennessee Air Pollution Control Board

Approved at Nashville, Tennessee on April 14, 2021.

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(Signed) Mayor Larry Waters, Vice-Chairman  
Tennessee Air Pollution Control Board

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(Signed) David Salyers, Chairman  
Tennessee Air Pollution Control Board

**Department of State  
Division of Publications**

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Sequence Number: \_\_\_\_\_  
Rule ID(s): \_\_\_\_\_  
File Date: \_\_\_\_\_  
Effective Date: \_\_\_\_\_

# Rulemaking Hearing Rule(s) Filing Form

*Rulemaking Hearing Rules are rules filed after and as a result of a rulemaking hearing (Tenn. Code Ann. § 4-5-205).*

*Pursuant to Tenn. Code Ann. § 4-5-229, any new fee or fee increase promulgated by state agency rule shall take effect on July 1, following the expiration of the ninety (90) day period as provided in § 4-5-207. This section shall not apply to rules that implement new fees or fee increases that are promulgated as emergency rules pursuant to § 4-5-208(a) and to subsequent rules that make permanent such emergency rules, as amended during the rulemaking process. In addition, this section shall not apply to state agencies that did not, during the preceding two (2) fiscal years, collect fees in an amount sufficient to pay the cost of operating the board, commission or entity in accordance with § 4-29-121(b).*

<b>Agency/Board/Commission:</b>	Air Pollution Control Board
<b>Division:</b>	Air Pollution Control
<b>Contact Person:</b>	Travis Blake
<b>Address:</b>	William R. Snodgrass Tennessee Tower 312 Rosa L. Parks Avenue, 15th Floor Nashville, TN
<b>Zip:</b>	37243
<b>Phone:</b>	(615) 532-0617
<b>Email:</b>	<a href="mailto:travis.blake@tn.gov">travis.blake@tn.gov</a>

**Revision Type (check all that apply):**

- Amendment  
 New  
 Repeal

**Rule(s)** (ALL chapters and rules contained in filing must be listed here. If needed, copy and paste additional tables to accommodate multiple chapters. Please make sure that **ALL** new rule and repealed rule numbers are listed in the chart below. Please enter only **ONE** Rule Number/Rule Title per row.)

Chapter Number	Chapter Title
1200-03-10	Required Sampling, Recordkeeping, and Reporting
Rule Number	Rule Title
1200-03-10-.02	Monitoring of Source Emissions, Recording, and Reporting of the Same are Required

Place substance of rules and other info here. Please be sure to include a detailed explanation of the changes being made to the listed rule(s). Statutory authority must be given for each rule change. For information on formatting rules go to <https://sos.tn.gov/products/division-publications/rulemaking-guidelines>.

Chapter 1200-03-10  
Required Sampling, Recordkeeping, and Reporting

Amendments

Part 1 of subparagraph (b) of paragraph (1) of Rule 1200-03-10-.02 (Monitoring of Source Emissions, Recording, and Reporting of the Same are Required) is amended by deleting it in its entirety and substituting instead the following:

1. The specific source categories listed below are required to complete the installation and performance testing of the respective equipment and begin maintaining and recording within 18 months of the effective ~~data date~~ of each rule.
  - (i) Fossil fuel-fired steam generators, ~~as defined in Rule 1200-03-16-.02, except as provided in the following items,~~ with an annual average capacity factor of greater than 30 percent, as reported to the Federal Power Commission for calendar year 1974, or as otherwise demonstrated to the Technical Secretary by the owner or operator, shall conform with the following monitoring requirements. For purposes of this rule, "fossil fuel-fired steam generator" means a furnace or boiler used in the process of burning fossil fuel for the purpose of producing steam by heat transfer.
    - (I) A continuous monitoring system for the measurement of opacity shall be installed, calibrated, maintained, and operated by the owner or operator of any such steam generator of greater than 250 million ~~Btu~~ BTU per hour heat input ~~except for generators operated as described in subitem I, II, or III of this item. where:~~
      - I. ~~Gaseous fuel is the only fuel burned, or~~
      - II. Oil or a mixture of gas and oil are the only fuels burned, and the source is able to comply with the applicable particulate matter and opacity regulations without utilization of particulate matter collection equipment, and where the source has never been found, through any administrative or judicial proceedings, to be in violation of any visible emission standard of these regulations.
      - III. The owner or operator installs, certifies, operates, and maintains a particulate matter continuous emissions monitoring system (PM CEMS) or particulate matter continuous parameter monitoring system (PM CPMS) in accordance with the requirements of 40 CFR 63 Subpart UUUUU, and the PM CEMS or PM CPMS is subject to and complies with:
        - A. The filterable particulate matter standards established by § 63.9991(a)(1) and Table 1 or Table 2 of Subpart UUUUU;
        - B. The monitoring requirements established by §§ 63.10010(h) or (i); and
        - C. The work practice standards established by § 63.10007(a)(1) and Table 3 of Subpart UUUUU.
      - IV. The provisions of § 63.9991(a)(1) and Tables 1 and Table 2 of Subpart UUUUU, §§ 63.10010(h) and (i), and § 63.10007(a)(1)

and Table 3 of Subpart UUUUU are hereby adopted by reference as published in the April 6, 2016, edition of the Federal Register (81 FR 20205).

- (ii) Each sulfuric acid plant of greater than 300 tons per day production capacity, the production being expressed as 100 percent acid, shall install, calibrate, maintain, and operate a continuous monitoring system for the measurement of sulfur dioxide for each sulfuric acid producing facility within such plant.
- (iii) Each catalyst regenerator for fluid bed catalytic cracking units of greater than 20,000 barrels per day fresh feed capacity shall install, calibrate, maintain, and operate a continuous monitoring system for the measurement of opacity.

Authority: T.C.A. §§ 4-5-201, et seq.; 4-5-202, et seq.; 68-201-101, et seq.; and 68-201-105.



\* If a roll-call vote was necessary, the vote by the Agency on these rulemaking hearing rules was as follows:

<b>Board Member</b>	<b>Aye</b>	<b>No</b>	<b>Abstain</b>	<b>Absent</b>	<b>Signature (if required)</b>
<b>Dr. Ronné Adkins</b> Commissioner's Designee, Dept. of Environment and Conservation					
<b>Dr. John Benitez</b> Licensed Physician with experience in health effects of air pollutants					
<b>Dr. Chunrong Jia</b> Environmental Interests					
<b>Stephen Gossett</b> Working for Industry with technical experience					
<b>Dr. Shawn A. Hawkins</b> Working in field related to Agriculture or Conservation					
<b>Richard Holland</b> Working for Industry with technical experience					
<b>Caitlin Roberts Jennings</b> Small Generator of Air Pollution representing Automotive Interests					
<b>Ken Moore</b> Working in Municipal Government					
<b>Dr. Joshua Fu</b> Involved with Institution of Higher Learning on air pollution evaluation and control					
<b>Mike Haverstick</b> Working in management in Private Manufacturing					
<b>Amy Spann, PE</b> Registered Professional Engineer					
<b>Greer Tidwell, Jr.</b> Conservation Interest					
<b>Larry Waters</b> County Mayor					
<b>Jimmy West</b> Commissioner's Designee, Dept. of Economic and Community Development					

I certify that this is an accurate and complete copy of rulemaking hearing rules, lawfully promulgated and adopted by the Air Pollution Control Board on 04/14/2021, and is in compliance with the provisions of T.C.A. § 4-5-222.

I further certify the following:

Notice of Rulemaking Hearing filed with the Department of State on: 12/30/2020

Rulemaking Hearing(s) Conducted on: (add more dates). 02/24/2021

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Name of Officer: Michelle W. Owenby

Title of Officer: Technical Secretary

---

Agency/Board/Commission: Air Pollution Control Board

Rule Chapter Number(s): Chapter 1200-03-10

All rulemaking hearing rules provided for herein have been examined by the Attorney General and Reporter of the State of Tennessee and are approved as to legality pursuant to the provisions of the Administrative Procedures Act, Tennessee Code Annotated, Title 4, Chapter 5.

\_\_\_\_\_  
Herbert H. Slatery III  
Attorney General and Reporter

\_\_\_\_\_  
Date

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Filed with the Department of State on: \_\_\_\_\_

Effective on: \_\_\_\_\_

\_\_\_\_\_  
Tre Hargett  
Secretary of State

## Public Hearing Comments

One copy of a document that satisfies T.C.A. § 4-5-222 must accompany the filing.

A public hearing for this rule was held on February 24, 2021. There were no comments received during the public hearing. The U. S. Environmental Protection Agency (“EPA”) submitted the following comment in a letter dated February 26, 2021.

In Rule 1200-03-10-.02(1)(b)1(i), the reference to Rule 1200-03-16-.03 for the definition of “fossil fuel” causes concerns with federal enforceability because Chapter 1200-03-16 is not part of Tennessee’s federally-approved State Implementation Plan. Potential ways to address this concern include adding an “as of” date for the state rule or cross-referencing instead to a federal New Source Performance Standard definition with an “as of” date (e.g., “as defined in 40 CFR 60.41 as of [date]”). Either approach would establish a definition applicable to Rule 1200-03-10-.02(1)(b)1(i) that could not be changed without revising this rule. A third option would be to omit the cross-reference to a definition of the term and rely instead on commonly understood meaning.

**Response to EPA comment:** The final sentence of Rule 1200-03-10-.02(1)(b)1(i) was revised to remove “as defined in Rule 1200-03-16-.03,” so that the sentence reads as follows: “For purposes of this rule, “fossil fuel-fired steam generator” means a furnace or boiler used in the process of burning fossil fuel for the purpose of producing steam by heat transfer.”

There were no other comments received during the public comment period.

## Regulatory Flexibility Addendum

Pursuant to T.C.A. §§ 4-5-401 through 4-5-404, prior to initiating the rule making process, all agencies shall conduct a review of whether a proposed rule or rule affects small business.

- (1) The type or types of small business and an identification and estimate of the number of small businesses subject to the proposed rule that would bear the cost of, or directly benefit from the proposed rule.

The Air Pollution Control Board ("Board") anticipates that no small businesses will bear the cost of, or directly benefit from, these amended rules. None of the existing facilities subject to the amended rules are small businesses. Because this rule affects large emission sources in capital intensive industries, the Board believes that any new source subject to the amended rules would not be owned or operated by small businesses.

- (2) The projected reporting, recordkeeping, and other administrative costs required for compliance with the proposed rule, including the type of professional skills necessary for preparation of the report or record.

With respect to small businesses, the Board anticipates that there would be no reporting, recordkeeping, and other administrative costs required for compliance with the proposed rule, including the type of professional skills necessary for preparation of the report or record.

- (3) A statement of the probable effect on impacted small businesses and consumers.

The Board expects that the proposed rule would have no effect on small businesses and consumers.

- (4) A description of any less burdensome, less intrusive or less costly alternative methods of achieving the purpose and objectives of the proposed rule that may exist, and to what extent the alternative means might be less burdensome to small business.

The proposed rule is not projected to impact small businesses.

- (5) A comparison of the proposed rule with any federal or state counterparts.

The proposed rule does not have a direct counterpart in the federal regulations. 40 CFR Part 61, Subpart K establishes general requirements for State Implementation Plans to provide for legally enforceable testing, monitoring, recordkeeping, and reporting procedures.

- (6) Analysis of the effect of the possible exemption of small businesses from all or any part of the requirements contained in the proposed rule.

The proposed rule is not projected to impact small businesses.

### **Impact on Local Governments**

Pursuant to T.C.A. §§ 4-5-220 and 4-5-228 “any rule proposed to be promulgated shall state in a simple declarative sentence, without additional comments on the merits of the policy of the rules or regulation, whether the rule or regulation may have a projected impact on local governments.” (See Public Chapter Number 1070 (<http://publications.tnsosfiles.com/acts/106/pub/pc1070.pdf>) of the 2010 Session of the General Assembly.)

The Board anticipates that this amended rule will not have a financial impact on local governments.

## Additional Information Required by Joint Government Operations Committee

All agencies, upon filing a rule, must also submit the following pursuant to T.C.A. § 4-5-226(i)(1).

- (A)** A brief summary of the rule and a description of all relevant changes in previous regulations effectuated by such rule;

The rule change allows fossil fuel-fired steam generators to install particulate matter continuous emissions monitoring systems (PM CEMS) in lieu of continuous opacity monitoring systems (COMS) and defines a “fossil fuel-fired steam generator” as a furnace or boiler used in the process of burning fossil fuel for the purpose of producing steam by heat transfer.

- (B)** A citation to and brief description of any federal law or regulation or any state law or regulation mandating promulgation of such rule or establishing guidelines relevant thereto;

The change is not mandated by federal law or regulation.

- (C)** Identification of persons, organizations, corporations or governmental entities most directly affected by this rule, and whether those persons, organizations, corporations or governmental entities urge adoption or rejection of this rule;

Owners and operators of large coal-fired electricity generating units are directly affected by this rule. The rule change was adopted pursuant to a request for rulemaking by one affected facility, but the Tennessee Air Pollution Control Board did not receive specific comments urging adoption or rejection of the rule during the public comment period.

- (D)** Identification of any opinions of the attorney general and reporter or any judicial ruling that directly relates to the rule or the necessity to promulgate the rule;

The Air Pollution Control Board is not aware of any opinions that directly relate to the rulemaking.

- (E)** An estimate of the probable increase or decrease in state and local government revenues and expenditures, if any, resulting from the promulgation of this rule, and assumptions and reasoning upon which the estimate is based. An agency shall not state that the fiscal impact is minimal if the fiscal impact is more than two percent (2%) of the agency's annual budget or five hundred thousand dollars (\$500,000), whichever is less;

No change in state and local government revenues and expenditures is expected to result from these amendments.

- (F)** Identification of the appropriate agency representative or representatives, possessing substantial knowledge and understanding of the rule;

Travis Blake  
Division of Air Pollution Control  
William R. Snodgrass Tennessee Tower  
312 Rosa L. Parks Avenue, 15th Floor  
Nashville, Tennessee 37243  
[travis.blake@tn.gov](mailto:travis.blake@tn.gov)

- (G)** Identification of the appropriate agency representative or representatives who will explain the rule at a scheduled meeting of the committees;

Blair Beaty  
Legislative Liaison  
Office of General Counsel

- (H)** Office address, telephone number, and email address of the agency representative or representatives who will explain the rule at a scheduled meeting of the committees; and

Office of General Counsel  
Tennessee Department of Environment and Conservation

William R. Snodgrass Tennessee Tower  
312 Rosa L. Parks Avenue, 2nd Floor  
Nashville, Tennessee 37243  
(615) 253-1965  
[Blair.Beaty@tn.gov](mailto:Blair.Beaty@tn.gov)

(I) Any additional information relevant to the rule proposed for continuation that the committee requests.

(1) A description of the action proposed, the purpose of the action, the legal authority for the action and the plan for implementing the action.

The rule change allows fossil fuel-fired steam generators to install particulate matter continuous emissions monitoring systems (PM CEMS) in lieu of continuous opacity monitoring systems (COMS) and defines a "fossil fuel-fired steam generator" as a furnace or boiler used in the process of burning fossil fuel for the purpose of producing steam by heat transfer.

Tenn. Code Ann. § 68-201-105 states that the air pollution control board has the power and duty to promulgate rules and regulations to effect the intent and purpose of the Tennessee Air Quality Act. Such rules and regulations may include , but are not limited to, those defining: ambient air quality standards; emission standards; general policies or plans; a system of permits; and a schedule of fees for review of plans and specifications, issuance or renewal of permits or inspection of air contaminant sources.

Tenn. Code Ann. § 4-5-201 states that except where the right to petition for a rule is restricted by statute to a designated group or except where the form of procedure for such petition is otherwise prescribed by statute, any municipality, corporation or any five (5) or more persons having an interest in a rule may petition an agency requesting the adoption, amendment or repeal of such rule. After submission of a petition, the agency shall, as promptly as is consistent with the orderly dispatch of its business, deny the request or grant the same or provide for some modified form of the proposed rule. If the agency grants the petition in whole or in part, it shall proceed to meet the rulemaking requirements set out in this chapter.

(2) A determination that the action is the least-cost method for achieving the stated purpose.

The Board has determined that the rule is the least-costly method for achieving the stated purpose based on one projected savings of about \$20,000 per year each at two coal-fired utilities currently operating PM CEMS. Similar savings could be realized by other facilities that become subject to this rule in the future.

(3) A comparison of the cost-benefit relation of the action to nonaction.

The Board estimates an annual cost of \$40,000 per year (see #2 above) for nonaction. Nonaction could also result in the loss of air quality benefits by reducing the incentive for additional facilities to install PM CEMS (PM CEMS are a better monitoring method than COMS).

Facilities that currently operate PM CEMS would likely continue to do so (PM CEMS are installed for reasons unrelated to this rule), and nonaction is unlikely to produce additional benefits (there is likely no benefit from two redundant and overlapping monitoring methods).

(4) A determination that the action represents the most efficient allocation of public and private resources.

The action represents the most efficient allocation of public and private resources because it allows facilities to discontinue redundant monitoring methods.

(5) A determination of the effect of the action on competition.

The Board expects that this action would have a minimal effect on competition because the regulated community consists of large, capital-intensive industries (electric utilities), which have high barriers to entry without regard to this action.

- (6) A determination of the effect of the action on the cost of living in the geographical area in which the action would occur.
- The Board expects that this action would not affect the cost of living in the geographical area in which the action would occur.
- (7) A determination of the effect of the action on employment in the geographical area in which the action would occur.
- The Board expects that this action would not affect employment in the geographical area in which the action would occur.
- (8) The source of revenue to be used for the action.
- The Board expects that no additional sources of revenue would be required for this action.
- (9) A conclusion as to the economic impact upon all persons substantially affected by the action, including an analysis containing a description as to which persons will bear the costs of the action and which persons will benefit directly and indirectly from the action.
- The Board expects that there would be negligible cost to this action, since the change removes a redundancy in the existing rule. The Board has identified two facilities (Bull Run and Kingston Fossil Plants) that will benefit directly from the removal of redundant monitors and two additional facilities (Cumberland and Gallatin Fossil Plants) that may benefit in the future if PM CEMS are installed.



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Sequence Number: \_\_\_\_\_  
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# Rulemaking Hearing Rule(s) Filing Form

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*Pursuant to Tenn. Code Ann. § 4-5-229, any new fee or fee increase promulgated by state agency rule shall take effect on July 1, following the expiration of the ninety (90) day period as provided in § 4-5-207. This section shall not apply to rules that implement new fees or fee increases that are promulgated as emergency rules pursuant to § 4-5-208(a) and to subsequent rules that make permanent such emergency rules, as amended during the rulemaking process. In addition, this section shall not apply to state agencies that did not, during the preceding two (2) fiscal years, collect fees in an amount sufficient to pay the cost of operating the board, commission or entity in accordance with § 4-29-121(b).*

<b>Agency/Board/Commission:</b>	Air Pollution Control Board
<b>Division:</b>	Air Pollution Control
<b>Contact Person:</b>	Travis Blake
<b>Address:</b>	William R. Snodgrass Tennessee Tower 312 Rosa L. Parks Avenue, 15th Floor Nashville, TN
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**Revision Type (check all that apply):**

- Amendment  
 New  
 Repeal

**Rule(s)** (ALL chapters and rules contained in filing must be listed here. If needed, copy and paste additional tables to accommodate multiple chapters. Please make sure that **ALL** new rule and repealed rule numbers are listed in the chart below. Please enter only **ONE** Rule Number/Rule Title per row.)

Chapter Number	Chapter Title
1200-03-10	Required Sampling, Recordkeeping, and Reporting
Rule Number	Rule Title
1200-03-10-.02	Monitoring of Source Emissions, Recording, and Reporting of the Same are Required

Place substance of rules and other info here. Please be sure to include a detailed explanation of the changes being made to the listed rule(s). Statutory authority must be given for each rule change. For information on formatting rules go to <https://sos.tn.gov/products/division-publications/rulemaking-guidelines>.

Chapter 1200-03-10  
Required Sampling, Recordkeeping, and Reporting

Amendments

Part 1 of subparagraph (b) of paragraph (1) of Rule 1200-03-10-.02 (Monitoring of Source Emissions, Recording, and Reporting of the Same are Required) is amended by deleting it in its entirety and substituting instead the following:

1. The specific source categories listed below are required to complete the installation and performance testing of the respective equipment and begin maintaining and recording within 18 months of the effective date of each rule.
  - (i) Fossil fuel-fired steam generators with an annual average capacity factor of greater than 30 percent, as reported to the Federal Power Commission for calendar year 1974 or as otherwise demonstrated to the Technical Secretary by the owner or operator, shall conform with the following monitoring requirements. For purposes of this rule, "fossil fuel-fired steam generator" means a furnace or boiler used in the process of burning fossil fuel for the purpose of producing steam by heat transfer.
    - (I) A continuous monitoring system for the measurement of opacity shall be installed, calibrated, maintained, and operated by the owner or operator of any such steam generator of greater than 250 million Btu per hour heat input except for generators operated as described in subitem I, II, or III of this item.
      - I. Gaseous fuel is the only fuel burned.
      - II. Oil or a mixture of gas and oil are the only fuels burned, and the source is able to comply with the applicable particulate matter and opacity regulations without utilization of particulate matter collection equipment, and where the source has never been found, through any administrative or judicial proceedings, to be in violation of any visible emission standard of these regulations.
      - III. The owner or operator installs, certifies, operates, and maintains a particulate matter continuous emissions monitoring system (PM CEMS) or particulate matter continuous parameter monitoring system (PM CPMS) in accordance with the requirements of 40 CFR 63 Subpart UUUUU, and the PM CEMS or PM CPMS is subject to and complies with:
        - A. The filterable particulate matter standards established by § 63.9991(a)(1) and Table 1 or Table 2 of Subpart UUUUU;
        - B. The monitoring requirements established by §§ 63.10010(h) or (i); and
        - C. The work practice standards established by § 63.10007(a)(1) and Table 3 of Subpart UUUUU.
      - IV. The provisions of § 63.9991(a)(1) and Tables 1 and Table 2 of Subpart UUUUU, §§ 63.10010(h) and (i), and § 63.10007(a)(1) and Table 3 of Subpart UUUUU are hereby adopted by

reference as published in the April 6, 2016, edition of the Federal Register (81 FR 20205).

- (ii) Each sulfuric acid plant of greater than 300 tons per day production capacity, the production being expressed as 100 percent acid, shall install, calibrate, maintain, and operate a continuous monitoring system for the measurement of sulfur dioxide for each sulfuric acid producing facility within such plant.
- (iii) Each catalyst regenerator for fluid bed catalytic cracking units of greater than 20,000 barrels per day fresh feed capacity shall install, calibrate, maintain, and operate a continuous monitoring system for the measurement of opacity.

Authority: T.C.A. §§ 4-5-201, et seq.; 4-5-202, et seq.; 68-201-101, et seq.; and 68-201-105.

\* If a roll-call vote was necessary, the vote by the Agency on these rulemaking hearing rules was as follows:

<b>Board Member</b>	<b>Aye</b>	<b>No</b>	<b>Abstain</b>	<b>Absent</b>	<b>Signature (if required)</b>
<b>Dr. Ronné Adkins</b> Commissioner's Designee, Dept. of Environment and Conservation					
<b>Dr. John Benitez</b> Licensed Physician with experience in health effects of air pollutants					
<b>Dr. Chunrong Jia</b> Environmental Interests					
<b>Stephen Gossett</b> Working for Industry with technical experience					
<b>Dr. Shawn A. Hawkins</b> Working in field related to Agriculture or Conservation					
<b>Richard Holland</b> Working for Industry with technical experience					
<b>Caitlin Roberts Jennings</b> Small Generator of Air Pollution representing Automotive Interests					
<b>Ken Moore</b> Working in Municipal Government					
<b>Dr. Joshua Fu</b> Involved with Institution of Higher Learning on air pollution evaluation and control					
<b>Mike Haverstick</b> Working in management in Private Manufacturing					
<b>Amy Spann, PE</b> Registered Professional Engineer					
<b>Greer Tidwell, Jr.</b> Conservation Interest					
<b>Larry Waters</b> County Mayor					
<b>Jimmy West</b> Commissioner's Designee, Dept. of Economic and Community Development					

I certify that this is an accurate and complete copy of rulemaking hearing rules, lawfully promulgated and adopted by the Air Pollution Control Board on 04/14/2021, and is in compliance with the provisions of T.C.A. § 4-5-222.

I further certify the following:

Notice of Rulemaking Hearing filed with the Department of State on: 12/30/2020

Rulemaking Hearing(s) Conducted on: (add more dates). 02/24/2021

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Name of Officer: Michelle W. Owenby

Title of Officer: Technical Secretary

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Agency/Board/Commission: Air Pollution Control Board

Rule Chapter Number(s): Chapter 1200-03-10

All rulemaking hearing rules provided for herein have been examined by the Attorney General and Reporter of the State of Tennessee and are approved as to legality pursuant to the provisions of the Administrative Procedures Act, Tennessee Code Annotated, Title 4, Chapter 5.

\_\_\_\_\_  
Herbert H. Slatery III  
Attorney General and Reporter

\_\_\_\_\_  
Date

**Department of State Use Only**

Filed with the Department of State on: \_\_\_\_\_

Effective on: \_\_\_\_\_

\_\_\_\_\_  
Tre Hargett  
Secretary of State

## Public Hearing Comments

One copy of a document that satisfies T.C.A. § 4-5-222 must accompany the filing.

A public hearing for this rule was held on February 24, 2021. There were no comments received during the public hearing. The U. S. Environmental Protection Agency (“EPA”) submitted the following comment in a letter dated February 26, 2021.

In Rule 1200-03-10-.02(1)(b)1(i), the reference to Rule 1200-03-16-.03 for the definition of “fossil fuel” causes concerns with federal enforceability because Chapter 1200-03-16 is not part of Tennessee’s federally-approved State Implementation Plan. Potential ways to address this concern include adding an “as of” date for the state rule or cross-referencing instead to a federal New Source Performance Standard definition with an “as of” date (e.g., “as defined in 40 CFR 60.41 as of [date]”). Either approach would establish a definition applicable to Rule 1200-03-10-.02(1)(b)1(i) that could not be changed without revising this rule. A third option would be to omit the cross-reference to a definition of the term and rely instead on commonly understood meaning.

**Response to EPA comment:** The final sentence of Rule 1200-03-10-.02(1)(b)1(i) was revised to remove “as defined in Rule 1200-03-16-.03,” so that the sentence reads as follows: “For purposes of this rule, “fossil fuel-fired steam generator” means a furnace or boiler used in the process of burning fossil fuel for the purpose of producing steam by heat transfer.”

There were no other comments received during the public comment period.

## Regulatory Flexibility Addendum

Pursuant to T.C.A. §§ 4-5-401 through 4-5-404, prior to initiating the rule making process, all agencies shall conduct a review of whether a proposed rule or rule affects small business.

- (1) The type or types of small business and an identification and estimate of the number of small businesses subject to the proposed rule that would bear the cost of, or directly benefit from the proposed rule.

The Air Pollution Control Board (“Board”) anticipates that no small businesses will bear the cost of, or directly benefit from, these amended rules. None of the existing facilities subject to the amended rules are small businesses. Because this rule affects large emission sources in capital intensive industries, the Board believes that any new source subject to the amended rules would not be owned or operated by small businesses.

- (2) The projected reporting, recordkeeping, and other administrative costs required for compliance with the proposed rule, including the type of professional skills necessary for preparation of the report or record.

With respect to small businesses, the Board anticipates that there would be no reporting, recordkeeping, and other administrative costs required for compliance with the proposed rule, including the type of professional skills necessary for preparation of the report or record.

- (3) A statement of the probable effect on impacted small businesses and consumers.

The Board expects that the proposed rule would have no effect on small businesses and consumers.

- (4) A description of any less burdensome, less intrusive or less costly alternative methods of achieving the purpose and objectives of the proposed rule that may exist, and to what extent the alternative means might be less burdensome to small business.

The proposed rule is not projected to impact small businesses.

- (5) A comparison of the proposed rule with any federal or state counterparts.

The proposed rule does not have a direct counterpart in the federal regulations. 40 CFR Part 61, Subpart K establishes general requirements for State Implementation Plans to provide for legally enforceable testing, monitoring, recordkeeping, and reporting procedures.

- (6) Analysis of the effect of the possible exemption of small businesses from all or any part of the requirements contained in the proposed rule.

The proposed rule is not projected to impact small businesses.

### **Impact on Local Governments**

Pursuant to T.C.A. §§ 4-5-220 and 4-5-228 “any rule proposed to be promulgated shall state in a simple declarative sentence, without additional comments on the merits of the policy of the rules or regulation, whether the rule or regulation may have a projected impact on local governments.” (See Public Chapter Number 1070 (<http://publications.tnsosfiles.com/acts/106/pub/pc1070.pdf>) of the 2010 Session of the General Assembly.)

The Board anticipates that this amended rule will not have a financial impact on local governments.



## Additional Information Required by Joint Government Operations Committee

All agencies, upon filing a rule, must also submit the following pursuant to T.C.A. § 4-5-226(i)(1).

- (A)** A brief summary of the rule and a description of all relevant changes in previous regulations effectuated by such rule;

The rule change allows fossil fuel-fired steam generators to install particulate matter continuous emissions monitoring systems (PM CEMS) in lieu of continuous opacity monitoring systems (COMS) and defines a “fossil fuel-fired steam generator” as a furnace or boiler used in the process of burning fossil fuel for the purpose of producing steam by heat transfer.

- (B)** A citation to and brief description of any federal law or regulation or any state law or regulation mandating promulgation of such rule or establishing guidelines relevant thereto;

The change is not mandated by federal law or regulation.

- (C)** Identification of persons, organizations, corporations or governmental entities most directly affected by this rule, and whether those persons, organizations, corporations or governmental entities urge adoption or rejection of this rule;

Owners and operators of large coal-fired electricity generating units are directly affected by this rule. The rule change was adopted pursuant to a request for rulemaking by one affected facility, but the Tennessee Air Pollution Control Board did not receive specific comments urging adoption or rejection of the rule during the public comment period.

- (D)** Identification of any opinions of the attorney general and reporter or any judicial ruling that directly relates to the rule or the necessity to promulgate the rule;

The Air Pollution Control Board is not aware of any opinions that directly relate to the rulemaking.

- (E)** An estimate of the probable increase or decrease in state and local government revenues and expenditures, if any, resulting from the promulgation of this rule, and assumptions and reasoning upon which the estimate is based. An agency shall not state that the fiscal impact is minimal if the fiscal impact is more than two percent (2%) of the agency's annual budget or five hundred thousand dollars (\$500,000), whichever is less;

No change in state and local government revenues and expenditures is expected to result from these amendments.

- (F)** Identification of the appropriate agency representative or representatives, possessing substantial knowledge and understanding of the rule;

Travis Blake  
Division of Air Pollution Control  
William R. Snodgrass Tennessee Tower  
312 Rosa L. Parks Avenue, 15th Floor  
Nashville, Tennessee 37243  
[travis.blake@tn.gov](mailto:travis.blake@tn.gov)

- (G)** Identification of the appropriate agency representative or representatives who will explain the rule at a scheduled meeting of the committees;

Blair Beaty  
Legislative Liaison  
Office of General Counsel

- (H)** Office address, telephone number, and email address of the agency representative or representatives who will explain the rule at a scheduled meeting of the committees; and

Office of General Counsel  
Tennessee Department of Environment and Conservation

William R. Snodgrass Tennessee Tower  
312 Rosa L. Parks Avenue, 2nd Floor  
Nashville, Tennessee 37243  
(615) 253-1965  
[Blair.Beaty@tn.gov](mailto:Blair.Beaty@tn.gov)

(I) Any additional information relevant to the rule proposed for continuation that the committee requests.

(1) A description of the action proposed, the purpose of the action, the legal authority for the action and the plan for implementing the action.

The rule change allows fossil fuel-fired steam generators to install particulate matter continuous emissions monitoring systems (PM CEMS) in lieu of continuous opacity monitoring systems (COMS) and defines a "fossil fuel-fired steam generator" as a furnace or boiler used in the process of burning fossil fuel for the purpose of producing steam by heat transfer.

Tenn. Code Ann. § 68-201-105 states that the air pollution control board has the power and duty to promulgate rules and regulations to effect the intent and purpose of the Tennessee Air Quality Act. Such rules and regulations may include , but are not limited to, those defining: ambient air quality standards; emission standards; general policies or plans; a system of permits; and a schedule of fees for review of plans and specifications, issuance or renewal of permits or inspection of air contaminant sources.

Tenn. Code Ann. § 4-5-201 states that except where the right to petition for a rule is restricted by statute to a designated group or except where the form of procedure for such petition is otherwise prescribed by statute, any municipality, corporation or any five (5) or more persons having an interest in a rule may petition an agency requesting the adoption, amendment or repeal of such rule. After submission of a petition, the agency shall, as promptly as is consistent with the orderly dispatch of its business, deny the request or grant the same or provide for some modified form of the proposed rule. If the agency grants the petition in whole or in part, it shall proceed to meet the rulemaking requirements set out in this chapter.

(2) A determination that the action is the least-cost method for achieving the stated purpose.

The Board has determined that the rule is the least-costly method for achieving the stated purpose based on one projected savings of about \$20,000 per year each at two coal-fired utilities currently operating PM CEMS. Similar savings could be realized by other facilities that become subject to this rule in the future.

(3) A comparison of the cost-benefit relation of the action to nonaction.

The Board estimates an annual cost of \$40,000 per year (see #2 above) for nonaction. Nonaction could also result in the loss of air quality benefits by reducing the incentive for additional facilities to install PM CEMS (PM CEMS are a better monitoring method than COMS).

Facilities that currently operate PM CEMS would likely continue to do so (PM CEMS are installed for reasons unrelated to this rule), and nonaction is unlikely to produce additional benefits (there is likely no benefit from two redundant and overlapping monitoring methods).

(4) A determination that the action represents the most efficient allocation of public and private resources.

The action represents the most efficient allocation of public and private resources because it allows facilities to discontinue redundant monitoring methods.

(5) A determination of the effect of the action on competition.

The Board expects that this action would have a minimal effect on competition because the regulated community consists of large, capital-intensive industries (electric utilities), which have high barriers to entry without regard to this action.

- (6) A determination of the effect of the action on the cost of living in the geographical area in which the action would occur.
- The Board expects that this action would not affect the cost of living in the geographical area in which the action would occur.
- (7) A determination of the effect of the action on employment in the geographical area in which the action would occur.
- The Board expects that this action would not affect employment in the geographical area in which the action would occur.
- (8) The source of revenue to be used for the action.
- The Board expects that no additional sources of revenue would be required for this action.
- (9) A conclusion as to the economic impact upon all persons substantially affected by the action, including an analysis containing a description as to which persons will bear the costs of the action and which persons will benefit directly and indirectly from the action.
- The Board expects that there would be negligible cost to this action, since the change removes a redundancy in the existing rule. The Board has identified two facilities (Bull Run and Kingston Fossil Plants) that will benefit directly from the removal of redundant monitors and two additional facilities (Cumberland and Gallatin Fossil Plants) that may benefit in the future if PM CEMS are installed.

**To:** Air Pollution Control Board Members  
**From:** Travis Blake  
**Date:** April 6, 2021  
**Subject:** NO<sub>x</sub> SIP Call Permits for Eastman Chemical Company and Packaging Corporation of America

In 1998, the U. S. EPA adopted the NO<sub>x</sub> SIP Call, which required 22 States and the District of Columbia to submit SIP revisions to reduce NO<sub>x</sub> and ozone transport across State boundaries in the eastern half of the United States. In Tennessee, large industrial boilers and combustion turbines are subject to Tennessee Air Pollution Control Regulations (TAPCR) 1200-03-27-.12 (NO<sub>x</sub> SIP Call Requirements for Stationary Boilers and Combustion Turbines). This rule requires affected units to comply with the applicable monitoring, recordkeeping, and reporting requirements provided in 40 CFR Part 75.

On March 8, 2019, EPA published a final rule revising the emissions monitoring provisions required under the NO<sub>x</sub> SIP Call. The revised federal rule allows States to establish monitoring requirements that are different from 40 CFR Part 75 for units subject to the NO<sub>x</sub> SIP Call. States that approve alternatives to Part 75 must continue to include some form of emissions monitoring requirements for these types of sources, consistent with the NO<sub>x</sub> SIP Call's general enforceability and monitoring requirements.

The Division of Air Pollution control has received two requests to allow the use of alternative monitoring for NO<sub>x</sub> emissions, as follows:

1. Eastman Chemical Company requests approval to use 40 CFR Part 75 Appendix E (Optional NO<sub>x</sub> Emissions Estimation Protocol for Gas-Fired Peaking Units and Oil-Fired Peaking Units) as an alternative to the continuous emissions monitoring for five natural gas-fired boilers at Eastman's Kingsport facility. This method uses stack testing to establish NO<sub>x</sub> emission rates at various operating loads and measurement of the fuel flow rate to demonstrate compliance with the NO<sub>x</sub> SIP Call requirements.
2. Packaging Corporation of America requests approval to monitor NO<sub>x</sub> emissions in accordance with 40 CFR Part 60 Appendix B (Performance Specification 2 – Specifications and Test Procedures for SO<sub>2</sub> and NO<sub>x</sub> Continuous Emission Monitoring Systems in Stationary Sources) as an alternative to the requirements of Part 75. Part 60 also uses continuous emissions monitoring to measure the NO<sub>x</sub> concentration, but the NO<sub>x</sub> emission rate is calculated differently<sup>1</sup>.

The Division has reviewed the requested alternatives and will propose approve each alternative as part of a non-regulatory SIP submittal to U. S. EPA.

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<sup>1</sup> Part 75 directly calculates NO<sub>x</sub> emissions from the measured NO<sub>x</sub> concentration and stack flow rate, while Part 60 measures the NO<sub>x</sub> concentration and uses standard conversion factors to calculate NO<sub>x</sub> emissions (i. e., the flow rate through the stack is not measured).

# **First Item**

Eastman Chemical Company – Tennessee Operations  
NO<sub>x</sub> SIP Call Permit 077509 and 110(l) Demonstration  
B-253 Powerhouse (Boilers 25, 26, 27, 28, and 29)

STATE OF TENNESSEE  
AIR POLLUTION CONTROL BOARD  
DEPARTMENT OF ENVIRONMENT AND CONSERVATION  
NASHVILLE, TENNESSEE 37243



**OPERATING PERMIT** Issued Pursuant to Tennessee Air Quality Act

Issue Date: **\*\*\*\*\*DRAFT\*\*\*\*\*** Permit Number: 077509

Issued To: Eastman Chemical Company  
Facility ID: 82-0003  
Installation Address  
200 South Wilcox Drive  
Kingsport

Installation Description: Natural Gas-Fired Boilers 25-29 (PES B-253-1)  
Emission Source Reference No.: 82-0003-01  
SIP

The holder of this permit shall comply with the conditions contained in this permit as well as all applicable provisions of the Tennessee Air Pollution Control Regulations (TAPCR).

**CONDITIONS:**

1. Pursuant to 40 CFR §51.121(i)(1), upon issuance of this permit and approval of this permit into Tennessee's State Implementation Plan by U. S. EPA, the permittee may demonstrate compliance with TAPCR 1200-03-27-.11 by monitoring nitrogen oxides (NO<sub>x</sub>) emissions from PES B-253-1, Boilers 25 through 29, using the alternative NO<sub>x</sub> monitoring provisions contained in **Conditions 2 through 18** of this permit.

Tennessee Air Pollution Control Regulations (TAPCR) 1200-03-09-.03(8), 40 CFR §51.121(i)(1)

\_\_\_\_\_  
TECHNICAL SECRETARY

No Authority is Granted by this Permit to Operate, Construct, or Maintain any Installation in Violation of any Law, Statute, Code, Ordinance, Rule, or Regulation of the State of Tennessee or any of its Political Subdivisions.

**POST AT INSTALLATION ADDRESS**

#### 40 CFR Part 75 Appendix E Requirements: Optional NO<sub>x</sub> Emissions Estimation Protocol (Conditions 2 through 14)

2. **Certification:** Complete all testing requirements to certify use of this protocol in lieu of a NO<sub>x</sub> continuous emission monitoring system and apply to the Technical Secretary for certification to use this method no later than 60 days prior to May 1 of the first control period in which the alternative method will be used. Whenever the monitoring method is to be changed, reapply to the Technical Secretary for certification of the new monitoring method.
3. **Initial Performance Testing:** Use the following procedures for: measuring NO<sub>x</sub> emission rates at heat input rate levels corresponding to different load levels; measuring heat input rate; and plotting the correlation between heat input rate and NO<sub>x</sub> emission rate, in order to determine the emission rate of the unit(s). The requirements of 40 CFR 75 Appendix A, section 6.1.2, shall apply to any stack testing performed to obtain oxygen (O<sub>2</sub>) and NO<sub>x</sub> concentration measurements under this condition.
4. **Load Selection:** Establish at least four approximately equally spaced operating load points, ranging from the maximum operating load to the minimum operating load. Select the maximum and minimum operating load from the operating history of the unit during the most recent two years. If projections indicate that the unit's maximum or minimum operating load during the next five years will be significantly different from the most recent two years, select the maximum and minimum operating load based on the projected dispatched load of the unit.
5. **NO<sub>x</sub> and O<sub>2</sub> Concentration Measurements:** Use the following procedures to measure NO<sub>x</sub> and O<sub>2</sub> concentration in order to determine NO<sub>x</sub> emission rate.
  - (a) Select an excess O<sub>2</sub> level to be combusted that is representative for each load level.
  - (b) Operate the boiler at a normal or conservatively high excess oxygen level in conjunction with these tests. Measure the NO<sub>x</sub> and O<sub>2</sub> at each load point for each fuel or consistent fuel combination (and, optionally, for each combination of fuels) to be combusted.
  - (c) Measure the NO<sub>x</sub> and O<sub>2</sub> concentrations according to methods 7E and 3A in 40 CFR 60 Appendix A. Use a minimum of 12 sample points, located according to Method 1 in 40 CFR 60 Appendix A-1.
  - (d) Allow the unit to stabilize for a minimum of 15 minutes (or longer, if needed for the NO<sub>x</sub> and O<sub>2</sub> readings to stabilize) prior to commencing NO<sub>x</sub>, O<sub>2</sub>, and heat input measurements. Determine the measurement system response time according to sections 8.2.5 and 8.2.6 of method 7E in 40 CFR 60 Appendix A-4. When inserting the probe into the flue gas for the first sampling point in each traverse, sample for at least one minute plus twice the measurement system response time (or longer, if necessary, to obtain a stable reading). For all other sampling points in each traverse, sample for at least one minute plus the measurement system response time (or longer, if necessary, to obtain a stable reading). Perform three test runs at each load condition and obtain an arithmetic average of the runs for each load condition. During each test run on a boiler, record the boiler excess oxygen level at five-minute intervals.
6. **Heat Input:** Measure the total heat input (MMBtu) and heat input rate during testing (MMBtu/hr) as follows: When the unit is combusting fuel, measure and record the flow of fuel consumed. Measure the flow of fuel with in-line flow meters and automatically record the data. If a portion of the flow is diverted from the unit without being burned, and that diversion occurs downstream of the fuel flow meter, an in-line flow meter is required to account for the unburned fuel. Install and calibrate in-line flow meters using the procedures and specifications contained in 40 CFR 75 Appendix D (see **Conditions 15 and 16**). Correct any gaseous fuel flow rate measured at actual temperature and pressure to standard conditions of 68 °F and 29.92 inches of mercury.
7. **Tabulation of Results:** Tabulate the results of each baseline correlation test for each fuel or, as applicable, combination of fuels, listing: time of test, duration, operating loads, heat input rate (MMBtu/hr), F-factors, excess oxygen levels, and NO<sub>x</sub> concentrations (ppm) on a dry basis (at actual excess oxygen level). Convert the NO<sub>x</sub> concentrations (ppm) to NO<sub>x</sub> emission rates (to the nearest 0.001 lb/MMBtu) according to equation F-5 of 40 CFR 75 Appendix F or equation 19-3 in method 19 of 40 CFR 60 Appendix A, as appropriate. Calculate the NO<sub>x</sub> emission rate in lb/MMBtu for each sampling point and determine the arithmetic average NO<sub>x</sub> emission rate of each test run. Calculate the arithmetic average of the boiler excess oxygen readings for each test run. Record the arithmetic average of the three test runs as the NO<sub>x</sub> emission rate and the boiler excess oxygen level for the heat input/load condition.
8. **Plotting of Results:** Plot the tabulated results as an x-y graph for each fuel and (as applicable) combination of fuels combusted according to the following procedures: Plot the heat input rate (MMBtu/hr) as the independent (or x) variable and the NO<sub>x</sub>

emission rates (lb/MMBtu) as the dependent (or y) variable for each load point. Construct the graph by drawing straight line segments between each load point. Draw a horizontal line to the y-axis from the minimum heat input (load) point.

9. **Periodic NO<sub>x</sub> Emission Rate Testing:** Retest the NO<sub>x</sub> emission rate at least once every 20 calendar quarters. If a required retest is not completed by the end of the 20<sup>th</sup> calendar quarter following the quarter of the last test, use the missing data substitution procedures in **Condition 12**, beginning with the first unit operating hour after the end of the 20<sup>th</sup> calendar quarter. Continue using the missing data procedures until the required retest has been passed. Each time that a new fuel-specific correlation curve is derived from retesting, the new curve shall be used to report NO<sub>x</sub> emission rate, beginning with the first operating hour in which the fuel is combusted, following the completion of the retest, or, if the NO<sub>x</sub> emission rate testing is performed outside the ozone season, the new correlation curve may be used beginning with the first unit operating hour in the ozone season immediately following the testing.
10. **Other Quality Assurance/Quality Control-Related NO<sub>x</sub> Emission Rate Testing:** When the operating levels of certain parameters exceed the limits specified below, or where the Technical Secretary issues a notice requesting retesting because the NO<sub>x</sub> emission rate data availability is less than 90.0 percent, complete retesting of the NO<sub>x</sub> emission rate by the earlier of:
- (a) 30 unit operating days (as defined in 40 CFR §72.2); or
  - (b) 180 calendar days after exceeding the limits or after the date of issuance of a notice from the Technical Secretary to re-verify the unit's NO<sub>x</sub> emission rate. Submit test results in accordance with 40 CFR §75.60 within 45 days of completing the retesting.

For boilers using the procedures in this permit, the NO<sub>x</sub> emission rate and heat input correlation shall be redetermined if the excess oxygen level at any heat input rate (or unit operating load) continuously exceeds by more than two percentage points O<sub>2</sub> from the boiler excess oxygen level recorded at the same operating heat input rate during the previous NO<sub>x</sub> emission rate test for one or more successive operating periods totaling more than 16 unit operating hours.

11. **Procedures for Determining Hourly NO<sub>x</sub> Emission Rate:**
- (a) Record the time (hr. and min.), load (MWge or steam load in 1,000 lb/hr, or MMBtu/hr thermal output), fuel flow rate and heat input rate (using the procedures in **Condition 6**) for each hour during which the unit combusts fuel. Calculate the total hourly heat input using equation E-1 of **Condition 13(a)**. Record the heat input rate for each fuel to the nearest 0.1 MMBtu/hr. During partial unit operating hours or during hours where more than one fuel is combusted, heat input must be represented as an hourly rate in MMBtu/hr, as if the fuel were combusted for the entire hour at that rate (and not as the actual, total heat input during that partial hour or hour) in order to ensure proper correlation with the NO<sub>x</sub> emission rate graph.
  - (b) Use the graph of the baseline correlation results (appropriate for the fuel or fuel combination) to determine the NO<sub>x</sub> emissions rate (lb/MMBtu) corresponding to the heat input rate (MMBtu/hr). Input this correlation into the data acquisition and handling system for the unit. Linearly interpolate to 0.1 MMBtu/hr heat input rate and 0.001 lb/MMBtu NO<sub>x</sub>. Calculate NO<sub>x</sub> emission rate using the baseline correlation results from the most recent test with that fuel, beginning with the date and hour of the completion of the most recent test.
  - (c) For each hour, record the critical quality assurance parameters, as identified in the monitoring plan, and as required by **Condition 10** from the date and hour of the completion of the most recent test for each type of fuel.
12. **Missing Data Procedures:** Provide substitute data for each unit electing to use this alternative procedure whenever a valid quality-assured hour of NO<sub>x</sub> emission rate data has not been obtained according to the procedures and specifications of this appendix. For the purpose of providing substitute data, calculate the maximum potential NO<sub>x</sub> emission rate, as defined in 40 CFR §72.2.
- (a) Use the procedures of this condition whenever any of the quality assurance/quality control parameters exceeds the limits in **Condition 10** or whenever any of the quality assurance/quality control parameters are not available.
  - (b) Substitute missing NO<sub>x</sub> emission rate data using the highest NO<sub>x</sub> emission rate tabulated during the most recent set of baseline correlation tests, except as provided in **Conditions 12(c), 12(d), and 12(f)**.



- (c) If the measured heat input rate during any unit operating hour is higher than the highest heat input rate from the baseline correlation tests, the NO<sub>x</sub> emission rate for the hour is considered to be missing. Provide substitute data for each such hour, according to the following procedures, as applicable. Either:
  - (i) Substitute the higher of: the NO<sub>x</sub> emission rate obtained by linear extrapolation of the correlation curve, or the maximum potential NO<sub>x</sub> emission rate (MER) (as defined in §72.2), specific to the type of fuel being combusted; or
  - (ii) Substitute 1.25 times the highest NO<sub>x</sub> emission rate from the baseline correlation tests for the fuel (or fuel mixture) being combusted in the unit, not to exceed the MER for that fuel (or mixture).
- (d) Whenever 20 full calendar quarters have elapsed following the quarter of the last baseline correlation test for a particular type of fuel (or fuel mixture), without a subsequent baseline correlation test being done, substitute the fuel-specific NO<sub>x</sub> MER (as defined in 40 CFR §72.2) for each hour in which that fuel is combusted until a new baseline correlation test for that fuel has been successfully completed.
- (e) Maintain a record indicating which data are substitute data and the reasons for the failure to provide a valid quality-assured hour of NO<sub>x</sub> emission rate data according to the procedures and specifications of this permit.
- (f) Substitute missing data from a fuel flow meter using the procedures in **Condition 18**.
- (g) Substitute missing data for gross calorific value of fuel using the procedures in **Condition 17**.

13. **Calculations.**

- (a) Calculate the total heat input by summing the product of heat input rate and fuel usage time of each fuel, as in the following equation:

$$H_T = HI_{fuel1} t_1 + HI_{fuel2} t_2 + HI_{fuel3} t_3 + \dots + HI_{lastfuel} t_{last} \quad (\text{Eq. E-1})$$

Where:

$H_T$  = Total heat input of fuel flow or a combination of fuel flows to a unit, MMBtu.

$HI_{fuel1,2,3,\dots,last}$  = Heat input rate from each fuel, in MMBtu/hr as determined using Equation F-19 or F-20 in section 5.5 of 40 CFR 75 Appendix F.

$t_{1,2,3,\dots,last}$  = Fuel usage time for each fuel (rounded up to the nearest fraction of an hour (in equal increments that can range from one hundredth to one quarter of an hour, at the option of the owner or operator)).

- (b) Use the F-factors in Table 13-1 as applicable.

Table 13-1: F- and F <sub>c</sub> -Factors <sup>1</sup>		
Fuel	F-factor (dscf/MMBtu)	F <sub>c</sub> -factor (scf CO <sub>2</sub> /MMBtu)
Natural Gas	8,710	1,040

<sup>1</sup>Determined at standard conditions: 20 °C (68 °F) and 29.92 inches of mercury.

- (c) Convert the NO<sub>x</sub> concentrations (ppm) and O<sub>2</sub> concentrations to NO<sub>x</sub> emission rates to the nearest 0.001 lb/MMBtu, according to the appropriate one of the following equations: F-5 in 40 CFR 75 Appendix F for dry basis concentration measurements or 19-3 in Method 19 of 40 CFR 60 Appendix A for wet basis concentration measurements.
- (d) Report the quarterly average emission rate (lb/MMBtu) as required in 40 CFR 75 Subpart G. Calculate the quarterly average NO<sub>x</sub> emission rate according to equation F-9 in 40 CFR 75 Appendix F.
- (e) Report the average emission rate (lb/MMBtu) for the calendar year as required in 40 CFR 75 Subpart G. Calculate the average NO<sub>x</sub> emission rate according to equation F-10 in 40 CFR 75 Appendix F.

14. **Quality assurance/quality control:**

- (a) Include a section on the NO<sub>x</sub> emission rate determination as part of the monitoring quality assurance/quality control plan required under §75.21 and 40 CFR 75 Appendix B for each unit, including: (1) a copy of all data and results from the initial NO<sub>x</sub> emission rate testing, including the values of quality assurance parameters specified in **Condition 10**; (2) a copy of all data and results from the most recent NO<sub>x</sub> emission rate load correlation testing; (3) a copy of the recommended range of quality assurance- and quality control-related operating parameters.
- (b) Submit a copy of the recommended range of operating parameter values, and the range of operating parameter values recorded during the previous NO<sub>x</sub> emission rate test that determined the unit's NO<sub>x</sub> emission rate, along with the unit's revised monitoring plan submitted with the certification application.
- (c) Keep records of these operating parameters for each hour of operation in order to demonstrate that a unit is remaining within the recommended operating range.

**40 CFR Part 75 Appendix D Requirements: Optional NO<sub>x</sub> Emissions Estimation Protocol (Conditions 15 through 18)**

15. For each hour when the unit is combusting fuel, measure and record the flow rate of fuel combusted by the unit, measure the flow rate of fuel with an in-line fuel flow meter, and automatically record the data with a data acquisition and handling system. Install and use fuel flow meters in a pipe going to each unit or install and use a fuel flow meter in a common pipe header (as defined in 40 CFR §72.2). When a fuel flow meter is installed in a common pipe header, proceed as follows:
- (a) Apportion the heat input rate measured at the common pipe to the individual units, using Equation F-21a, F-21b, or F-21d in 40 CFR 75 Appendix F.
  - (b) For a gas-fired unit or an oil-fired unit that continuously or frequently combusts a supplemental fuel for flame stabilization or safety purposes, measure the flow rate of the supplemental fuel with a fuel flow meter meeting the requirements of this permit.
16. **Initial Certification Requirement for all Fuel Flow Meters:** For the purposes of initial certification, each fuel flow meter shall meet a flow meter accuracy of 2.0 percent of the upper range value (i.e. maximum fuel flow rate measurable by the flow meter) across the range of fuel flow rate to be measured at the unit. Flow meter accuracy may be determined under **Condition 16(a)** for initial certification in any of the following ways (as applicable): by design (orifice, nozzle, and venturi-type flow meters, only) or by measurement under laboratory conditions; by the manufacturer; by an independent laboratory; or by the owner or operator. Flow meter accuracy may also be determined under **Condition 16(b)** by in-line comparison against a reference flow meter.
- (a) Use the procedures in the following standards to verify flow meter accuracy or design, as appropriate to the type of flow meter: ASME MFC-3M-2004, Measurement of Fluid Flow in Pipes Using Orifice, Nozzle, and Venturi; ASME MFC-4M-1986 (Reaffirmed 1997), Measurement of Gas Flow by Turbine Meters; American Gas Association Report No. 3, Orifice Metering of Natural Gas and Other Related Hydrocarbon Fluids Part 1: General Equations and Uncertainty Guidelines (October 1990 Edition), Part 2: Specification and Installation Requirements (February 1991 Edition), and Part 3: Natural Gas Applications (August 1992 edition) (excluding the modified flow-calculation method in part 3); Section 8, Calibration from American Gas Association Transmission Measurement Committee Report No. 7: Measurement of Gas by Turbine Meters (Second Revision, April 1996); ASME-MFC-5M-1985 (Reaffirmed 1994), Measurement of Liquid Flow in Closed Conduits Using Transit-Time Ultrasonic Flow meters; ASME MFC-6M-1998, Measurement of Fluid Flow in Pipes Using Vortex Flow meters; ASME MFC-7M-1987 (Reaffirmed 1992), Measurement of Gas Flow by Means of Critical Flow Venturi Nozzles; ISO 8316: 1987(E) Measurement of Liquid Flow in Closed Conduits—Method by Collection of the Liquid in a Volumetric Tank; American Petroleum Institute (API) Manual of Petroleum Measurement Standards, Chapter 4—Proving Systems, Section 2—Pipe Provers (Provers Accumulating at Least 10,000 Pulses), Second Edition, March 2001, Section 3—Small Volume Provers, First Edition, July 1988, Reaffirmed October 1993, and Section 5—Master-Meter Provers, Second Edition, May 2000; American Petroleum Institute (API) Manual of Petroleum Measurement Standards, Chapter 22—Testing Protocol, Section 2—Differential Pressure Flow Measurement Devices, First Edition, August 2005; or ASME MFC-9M-1988 (Reaffirmed 2001), Measurement of Liquid Flow in Closed Conduits by Weighing Method, for all other flow meter types (all incorporated by reference under §75.6 of this part). The Administrator may also approve other procedures that use equipment traceable to National Institute of Standards and Technology standards. Document such procedures, the

equipment used, and the accuracy of the procedures in the monitoring plan for the unit, and submit a petition signed by the designated representative under §75.66(c). If the flow meter accuracy exceeds 2.0 percent of the upper range value, the flow meter does not qualify for use under this part.

- (b) Determine the flow meter accuracy of a fuel flow meter used for the purposes of this part by comparing it to the measured flow from a reference flow meter
- (i) The reference flow meter must be designed according to the specifications of American Gas Association Report No. 3 or ASME MFC-3M-1989 or tested for accuracy using a standard listed in **Condition 16(a)** during the previous 365 days. Any secondary elements, such as pressure and temperature transmitters, must be calibrated immediately prior to the comparison. Perform the comparison over a period of no more than seven consecutive unit operating days. Compare the average of three fuel flow rate readings over 20 minutes or longer for each meter at each of three different flow rate levels. The three flow rate levels shall correspond to:
- (A) Normal full unit operating load,
- (B) Normal minimum unit operating load,
- (C) A load point approximately equally spaced between the full and minimum unit operating loads, and
- (ii) Calculate the flow meter accuracy at each of the three flow levels using the following equation:

$$ACC = \frac{|R - A|}{URV} \times 100 \quad (\text{Eq. D-1})$$

Where:

ACC = Flow meter accuracy at a particular load level, as a percentage of the upper range value.

R = Average of the three flow measurements of the reference flow meter.

A = Average of the three measurements of the flow meter being tested.

URV = Upper range value of fuel flow meter being tested (i.e. maximum measurable flow).

- (iii) When an in-place reference meter or prover is used for quality assurance under **Condition 16(b)**, the reference meter calibration requirement (calibrate within 365 days prior to an accuracy test) may be waived if, during the previous in-place accuracy test with that reference meter, the reference flow meter and the flow meter being tested agreed to within ±1.0 percent of each other at all levels tested. This exception shall apply for periods of no longer than 20 consecutive calendar quarters.
- (c) If the flow meter accuracy exceeds 2.0%, the flow meter does not qualify for use for this appendix. Either recalibrate the flow meter until the flow meter accuracy is within the performance specification or replace the flow meter with another one that is demonstrated to meet the performance specification. Substitute for fuel flow rate using the missing data procedures in **Condition 18** until quality-assured fuel flow data become available.
- (d) For purposes of initial certification, when a flow meter is tested against a reference fuel flow rate (i.e., fuel flow rate from another fuel flow meter under **Condition 16(b)** or flow rate from a procedure performed according to a standard incorporated by reference under **Condition 16(a)**), report the results of flow meter accuracy tests in a manner consistent with **Table 16-1**.

Table 16-1—Table of Flow meter Accuracy Results					
Test number: _____		Test completion date <sup>1</sup> : _____		Test completion time <sup>1</sup> : _____	
Reinstallation date <sup>2</sup> (for testing under 2.1.5.1 only): _____			Reinstallation time <sup>2</sup> : _____		
Unit or pipe ID: _____		Component/System ID: _____			
Flow meter serial number: _____		Upper range value: _____			
Units of measure for flow meter and reference flow readings:					
Measurement level (percent of URV)	Run No.	Time of run (HHMM)	Candidate flow meter reading	Reference flow reading	Percent accuracy (percent of URV)
Low (Minimum) level _____ percent <sup>3</sup> of URV	1				
	2				
	3				
	Average				
Mid-level _____ percent <sup>3</sup> of URV	1				
	2				
	3				
	Average				
High (Maximum) level _____ percent <sup>3</sup> of URV	1				
	2				
	3				
	Average				
<sup>1</sup> Report the date, hour, and minute that all test runs were completed. <sup>2</sup> For laboratory tests not performed inline, report the date and hour that the fuel flow meter was reinstalled following the test. <sup>3</sup> It is required to test at least at three different levels: (1) normal full unit operating load, (2) normal minimum unit operating load, and (3) a load point approximately equally spaced between the full and minimum unit operating loads.					

17. When gross calorific value data are missing or invalid for a gas sample, substitute the maximum potential gross calorific value of that fuel (110,000 Btu per 100 standard cubic feet for pipeline natural gas). This value shall be reported whenever the results of a required GCV is missing or invalid.
18. Whenever data are missing from any primary fuel flow meter system (as defined in §72.2) and there is no backup system available to record the fuel flow rate, then substitute for each hour of missing data using the maximum potential fuel flow rate. The maximum potential fuel flow rate is the lesser of the following:
  - (a) The maximum fuel flow rate the unit is capable of combusting; or
  - (b) The maximum flow rate that the fuel flow meter can measure (i.e., the upper range value of the flow meter).
19. **Reporting:** The permittee shall submit reports in accordance with 40 CFR 75 Subpart G, as applicable.

## **Proposed Approval of Alternative Monitoring and Clean Air Act §110(I) Demonstration**

### **Eastman Chemical Company, B-253 Powerhouse, Boilers 25-29 Tennessee Air Pollution Control Regulations 1200-03-27-.12(11)**

On September 17, 2019, Eastman Chemical Company submitted a petition to request approval of alternative monitoring, recordkeeping, and reporting requirements for five boilers subject to the NO<sub>x</sub> SIP Call (Boilers 25, 26, 27, 28, and 29) at Eastman's B-253 powerhouse. The Tennessee Department of Environment and Conservation, Division of Air Pollution Control, is proposing to approve Eastman's petition, subject to the limitations and exceptions identified herein.

The specific monitoring requirements for the B-253 powerhouse will be implemented via operating permit 077509. The Division proposes to issue this permit after appropriate notice and comment and to submit the final permit to U. S. EPA for adoption into Tennessee's State Implementation Plan.

#### **I. Background**

On October 27, 1998 (63 FR 57356), EPA adopted the *Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone* (NO<sub>x</sub> SIP Call), which required 22 States and the District of Columbia to submit State Implementation Plan (SIP) revisions to prohibit specified amounts of NO<sub>x</sub> emissions for the purpose of reducing NO<sub>x</sub> and ozone transport across State boundaries in the eastern half of the United States. This rule also established the NO<sub>x</sub> Budget Trading Program, which allowed States to comply with the required emissions reductions via an interstate cap-and-trade program for electric generating units (EGUs) and for large industrial boilers and combustion turbines (i. e., non-EGUs). Tennessee implemented the NO<sub>x</sub> Budget Trading Program between 2003 and 2008, when the program was superseded by the Clean Air Interstate Rule (CAIR) Ozone Season NO<sub>x</sub> Trading Program.

EPA replaced CAIR with the Cross-State Air Pollution Rule (CSAPR) NO<sub>x</sub> trading programs on January 1, 2015. The applicability provisions of the CSAPR ozone season trading programs cover EGUs only, and non-EGU boilers are not covered under CSAPR. To preserve the NO<sub>x</sub> reductions established by the NO<sub>x</sub> SIP Call, the Tennessee Air Pollution Control Board approved Tennessee Air Pollution Control Regulations (TAPCR) 1200-03-27-.12 (NO<sub>x</sub> SIP Call Requirements for Stationary Boilers and Combustion Turbines). Tennessee submitted the rule to EPA's Region 4 office on February 27, 2017 and requested that EPA approve the rule into Tennessee's SIP.

TAPCR 1200-03-27-.12(11)(a) requires the owners and operators of an affected unit to comply with the applicable monitoring, recordkeeping, and reporting requirements provided in 40 CFR part 75 for each control period. On March 8, 2019, EPA published a final rule revising the emissions monitoring provisions required under the NO<sub>x</sub> SIP Call (84 FR 8422). This rule allows States to amend their SIPs to establish emissions monitoring alternatives to Part 75 for units subject to the NO<sub>x</sub> SIP Call<sup>1</sup>. In approving this rule, EPA stated that the Part 75 monitoring requirements were applied to non-EGU sources in the context of regional emission trading programs, including the NO<sub>x</sub> Budget Trading Program and the CAIR NO<sub>x</sub> Ozone Season Trading

<sup>1</sup> This revision does not include EGUs or other units subject to the Acid Rain Program or the CSAPR emission trading programs.

Program, which have been discontinued<sup>2</sup>. EPA also noted the substantial margins by which NO<sub>x</sub> SIP Call States are complying with their emissions budgets – overall seasonal NO<sub>x</sub> emissions from NO<sub>x</sub> SIP Call States are less than 40% of the States’ NO<sub>x</sub> budgets, and no State reported NO<sub>x</sub> emissions exceeding 71% of its budget<sup>3</sup>.

SIPs that approve alternatives to Part 75 must continue to include some form of emissions monitoring requirements for these types of sources, consistent with the NO<sub>x</sub> SIP Call’s general enforceability and monitoring requirements at § 51.121(f)(1) and (i)(1).

**II. Current Monitoring Requirements**

§ 75.10 requires affected sources to install, certify, operate, and maintain, in accordance with all the requirements of Part 75, a NO<sub>x</sub>-diluent continuous emission monitoring system (CEMS), consisting of a NO<sub>x</sub> pollutant concentration monitor and an O<sub>2</sub> or CO<sub>2</sub> diluent gas monitor, with an automated data acquisition and handling system for measuring and recording NO<sub>x</sub> concentration (in ppm), O<sub>2</sub> or CO<sub>2</sub> concentration (in percent O<sub>2</sub> or CO<sub>2</sub>) and NO<sub>x</sub> emission rate (in lb/MMBtu) discharged to the atmosphere, except as provided in §§75.12 and 75.17 and Subpart E of Part 75. Pursuant to §75.12(c), hourly, quarterly, and annual NO<sub>x</sub> emission rates must be calculated from the NO<sub>x</sub> concentration, diluent concentration, and percent moisture (if applicable) measurements using the procedures established in Appendix F to Part 75.

**III. Requested Alternative Monitoring**

The petition requests approval to use 40 CFR Part 75 Appendix E (Optional NO<sub>x</sub> Emissions Estimation Protocol for Gas-Fired Peaking Units and Oil-Fired Peaking Units) as an alternative to the CEMS requirements of Part 75. Appendix E establishes the following methodology:

1. Establish at least four approximately equally spaced operating load points, ranging from the maximum operating load to the minimum operating load based on the operating history of the unit during the most recent two years or on the projected dispatched load of the unit.
2. Select an excess O<sub>2</sub> level for each fuel that is representative of each load level. Operate the boiler at a normal or conservatively high excess oxygen level in conjunction with these tests. Measure the NO<sub>x</sub> and O<sub>2</sub> concentrations at each load point using the test methods specified in Section 2.1.2 of Appendix E.
3. Measure the total heat input (MMBtu) and heat input rate (MMBtu/hr) using the test methods specified in Section 2.1.3 of Appendix E.

<sup>2</sup> EPA notes that Part 75 monitoring is necessary for emission trading programs, because these programs can function only with timely reporting of consistent, quality-assured mass emissions data by all participating units.

<sup>3</sup> For Tennessee, EPA reported the following numbers for 2019:

2019 Ozone Season non-EGU NO <sub>x</sub> Emissions (tons)		
NO <sub>x</sub> Emissions (tons)	NO <sub>x</sub> Budget	Total Emissions (% of Budget)
1,870	5,666 (3,928*)	34% (48%*)
* The non-EGU portion of Tennessee’s NO <sub>x</sub> budget is 5,666 tons. Of this total, 1,738 tons are set aside for new source growth, leaving 3,928 tons of NO <sub>x</sub> emissions allocated to existing units. The 2018 non-EGU NO <sub>x</sub> emissions, as a percentage of Tennessee’s NO <sub>x</sub> budget, were calculated using both numbers.		

4. Calculate the NO<sub>x</sub> emission rate in lb/MMBtu for each sampling point and determine the arithmetic average NO<sub>x</sub> emission rates and boiler excess oxygen readings for each test run. Tabulate the results of each baseline correlation test, listing: time of test, duration, operating loads, heat input rate (MMBtu/hr), F-factors, excess oxygen levels, and NO<sub>x</sub> concentrations (ppm, dry basis at actual excess oxygen level).
5. Plot the heat input rate (MMBtu/hr) as the independent variable and the NO<sub>x</sub> emission rates (lb/MMBtu) as the dependent variable for each load point. Construct the graph by drawing straight line segments between each load point. Draw a horizontal line to the y-axis from the minimum heat input (load) point.
6. Record the time, load, fuel flow rate, and heat input rate for each hour during which the unit combusts fuel. Use the graph of the baseline correlation results (appropriate for the fuel or fuel combination) to determine the NO<sub>x</sub> emissions rate (lb/MMBtu) corresponding to the heat input rate (MMBtu/hr). Use the data substitution procedures required by Section 2.5 of Appendix E whenever a valid quality-assured hour of NO<sub>x</sub> emission rate data is not obtained.
7. Develop and implement a quality assurance/quality control (QA/QC) plan for the monitoring systems as specified in Appendix B to Part 75. Make all procedures, maintenance records, and ancillary supporting documentation available for review upon request from the permitting authority.
8. Retest the NO<sub>x</sub> emission rate of the gas-fired peaking unit or the oil-fired peaking unit while combusting each type of fuel (or fuel mixture) for which a NO<sub>x</sub> emission rate versus heat input rate correlation curve was derived, at least once every 20 calendar quarters. If a required retest is not completed by the end of the 20<sup>th</sup> calendar quarter following the quarter of the last test, use the missing data substitution procedures in Section 2.5 of Appendix E.

Earlier retesting is required as specified in Section 2.3, under the circumstances indicated below. Test results must be submitted in accordance with §75.60 within 45 days of completing the retesting.

- (a) The NO<sub>x</sub> emission rate heat input correlation must be redetermined if the excess oxygen level at any heat input rate (or unit operating load) continuously exceeds by more than 2 percentage points O<sub>2</sub> from the boiler excess oxygen level recorded at the same operating heat input rate during the previous NO<sub>x</sub> emission rate test for one or more successive operating periods totaling more than 16 unit operating hours.
- (b) Retesting is required if the NO<sub>x</sub> emission rate data availability since the last test is less than 90.0% and the Administrator issues a notice requesting retesting.

#### **IV. Justification for Alternative Monitoring**

The petition states that NO<sub>x</sub> emission rates from Eastman's B-253 boilers, which were converted from coal to natural gas operation between 2013 and 2018, are approximately 20% of the pre-conversion emission rates. As a result, Eastman operates with a substantial margin of compliance relative to the facility's NO<sub>x</sub> allocation.

Eastman’s allocation is 3,047 tons, and the petition states that Eastman emitted 70% of its allocation during the 2018 ozone season. The petition also notes that if Boiler 26 had been converted to gas for the 2018 control period, Eastman would have emitted approximately 60% of its allocation. The petition indicates that these boilers burn only pipeline quality natural gas and that the units have similar average NO<sub>x</sub> emission rates over the history to-date (Table 1).

<b>Table 1: Comparison of B-253 Boiler Ozone Season NO<sub>x</sub> Emission Rates</b>			
<b>Boiler</b>	<b>Average NO<sub>x</sub> Emission Rate (lb/MMBtu)</b>		
	<b>2016</b>	<b>2017</b>	<b>2018</b>
253-25	0.086	0.086	0.085
253-26	N/A*	N/A	N/A
253-27	0.089	0.097	0.093
253-28	N/A	0.083	0.077
253-29	N/A	N/A	0.087

\* NO<sub>x</sub> emission rates are listed as N/A for boilers that combusted coal during a specific ozone season.

**V. Review of Eastman’s Alternative Monitoring Request, Clean Air Act §110(l) Requirements**

The Division of Air Pollution Control reviewed Eastman’s alternative monitoring request, giving consideration to emissions from the affected unit and the adequacy of the proposed monitoring method.

Attainment and maintenance plans in Tennessee rely upon control of NO<sub>x</sub> emissions. Section 110(l) of the Clean Air Act (CAA)<sup>4</sup> prohibits revision of a SIP that would interfere with attainment or maintenance of a NAAQS, reasonable further progress toward attainment of a NAAQS, or any other applicable requirement of the CAA. Because this rule is part of Tennessee’s SIP, the requirements of CAA §110(l) must be satisfied before changing the existing monitoring requirements.

The Division proposes to approve Eastman’s request. The proposed revision would not interfere with any applicable requirement concerning attainment or maintenance of a NAAQS or reasonable further progress toward attainment of a NAAQS.

- NO<sub>x</sub> emissions from Eastman’s affected units, including B-253 Boilers 25 through 29, are substantially below the facility’s NO<sub>x</sub> budget established pursuant to 1200-03-27-.12, and the change would not result in an increase in NO<sub>x</sub> emissions. The proposed monitoring alternative would not alter the NO<sub>x</sub> SIP Call budget that limits emissions from the affected unit.
- The alternate monitoring requirements are permanent, enforceable and sufficient to determine whether the source is in compliance with the NO<sub>x</sub> SIP Call emissions requirements.
- The work practice requirements of 40 CFR 63 Subpart DDDDD (periodic tune-ups) will provide additional assurance of proper boiler operation

<sup>4</sup>“Each revision to an implementation plan submitted by a State under this chapter shall be adopted by such State after reasonable notice and public hearing. The Administrator shall not approve a revision of a plan if the revision would interfere with any applicable requirement concerning attainment and reasonable further progress (as defined in section 7501 of this title), or any other applicable requirement of this chapter.”



## V.1. Emissions

EPA's proposed approval of NO<sub>x</sub> SIP Call monitoring alternatives (83 FR 48751) notes the substantial margin by which NO<sub>x</sub> SIP Call states are complying with the portions of their statewide emissions budgets assigned to large EGUs and large non-EQU boilers and turbines, averaging less than 40% of the statewide NO<sub>x</sub> budgets in 2017.

Eastman's B-253 boilers were converted from coal to natural gas operations between 2014 and 2018, as indicated in Table 2. Eastman's NO<sub>x</sub> SIP Call allowance allocation is 3,047 tons, and EPA's Clean Air Markets database (Table 3)<sup>5</sup> indicates that Eastman emitted 54% of its allocation during the 2019 ozone season. EPA's data demonstrate a substantial decline in Eastman's ozone season NO<sub>x</sub> emissions since 2017, which was driven primarily by repowering of Eastman's B-253 Boilers (Table 4).

<b>Boiler</b>	<b>Startup Date Burning Natural Gas</b>
253-25	4/23/2014
253-26	10/4/2018
253-27	4/23/2016
253-28	10/2/2016
253-29	3/30/2018

<b>Year</b>	<b>Program</b>	<b>NO<sub>x</sub> Emissions (tons)</b>	<b>Heat Input (MMBtu)</b>	<b>NO<sub>x</sub> Emission Rate (lb/MMBtu)</b>
2003	NBP	2,931	16,546,038	0.354
2004	NBP	2,488	13,627,131	0.365
2005	NBP	2,730	17,031,695	0.321
2006	NBP	2,833	16,943,526	0.334
2007	NBP	2,623	15,755,547	0.333
2008	CAIROS	2,639	16,086,750	0.328
2009	CAIROS	2,634	14,817,086	0.356
2010	CAIROS	2,961	16,921,905	0.350
2011	CAIROS	2,978	17,021,743	0.350
2012	CAIROS	2,950	16,902,058	0.349
2013	CAIROS	2,930	17,481,472	0.335
2014	CAIROS	2,949	17,106,922	0.345
2015	SIPNOX	3,012	17,350,946	0.347
2016	SIPNOX	2,796	17,279,303	0.324
2017	SIPNOX	2,224	17,593,154	0.253
2018	SIPNOX	2,145	18,346,901	0.234
2019	SIPNOX	1,656	17,585,764	0.188

<sup>5</sup> <https://ampd.epa.gov/ampd/>

**Table 3: Clean Air Markets Emissions Data, 2003-2019**  
**Eastman Chemical Company, B-253 Powerhouse**

Year	Program(s)	NO <sub>x</sub> Emissions (tons)					NO <sub>x</sub> Emission Rate (MMBtu)				
		253-25	253-26	253-27	253-28	253-29	253-25	253-26	253-27	253-28	253-29
2003	NBP	385.1	324.1	330.6	348.1	182.0	0.376	0.324	0.329	0.321	0.327
2004	NBP	286.2	294.4	349.2	282.5	268.5	0.335	0.369	0.362	0.342	0.340
2005	NBP	304.3	297.8	340.2	304.6	314.0	0.327	0.311	0.319	0.312	0.299
2006	NBP	330.8	316.9	342.7	241.6	329.1	0.330	0.322	0.321	0.306	0.320
2007	NBP	306.9	304.2	313.2	314.7	259.5	0.341	0.327	0.338	0.335	0.307
2008	CAIROS	330.1	327.1	283.8	283.0	274.0	0.332	0.339	0.303	0.317	0.307
2009	CAIROS	283.4	314.1	372.0	292.7	299.2	0.367	0.371	0.398	0.383	0.347
2010	CAIROS	352.6	309.1	356.2	282.6	417.8	0.351	0.320	0.353	0.345	0.452
2011	CAIROS	380.6	381.2	381.7	363.5	364.7	0.387	0.354	0.360	0.371	0.476
2012	CAIROS	329.6	342.1	354.3	368.9	378.8	0.345	0.350	0.350	0.434	0.393
2013	CAIROS	411.0	329.0	309.4	303.2	284.9	0.434	0.318	0.309	0.301	0.315
2014	CAIROS	91.1	266.9	467.7	511.5	342.3	0.086	0.374	0.461	0.521	0.326
2015	SIPNOX	86.6	355.6	427.5	504.3	294.5	0.082	0.332	0.455	0.537	0.343
2016	SIPNOX	79.4	453.2	108.4	424.8	408.7	0.086	0.497	0.089	0.502	0.453
2017	SIPNOX	97.4	410.6	119.9	100.7	247.0	0.086	0.461	0.097	0.083	0.338
2018	SIPNOX	94.4	403.3	96.6	90.0	103.9	0.084	0.553	0.093	0.077	0.087
2019	SIPNOX	92.7	99.7	93.5	74.6	86.8	0.086	0.085	0.085	0.076	0.086

Table 5 shows Tennessee’s NO<sub>x</sub> emissions for all affected non-EGU sources subject to the NO<sub>x</sub> Budget Trading Program (2003 – 2008), CAIR NO<sub>x</sub> Ozone Season Trading Program (2009 – 2014), and State NO<sub>x</sub> SIP Call regulation (2015 – 2019). Since the implementation of the NO<sub>x</sub> Budget Trading Program in 2004, Tennessee’s ozone season NO<sub>x</sub> emissions from these affected sources have decreased from 59.8% of Tennessee’s non-EGU NO<sub>x</sub> Budget in 2004 to 33.0% of Tennessee’s non-EGU NO<sub>x</sub> Budget in 2019.

<b>Year</b>	<b>Total NO<sub>x</sub> Emissions (tons)</b>	<b>Non-EGU NO<sub>x</sub> Budget (tons)</b>	<b>% of NO<sub>x</sub> Budget</b>
2003	5,804	5,666	102.4%
2004	3,389	5,666	59.8%
2005	3,879	5,666	68.5%
2006	3,833	5,666	67.6%
2007	3,737	5,666	66.0%
2008	3,661	5,666	64.6%
2009	3,524	5,666	62.2%
2010	3,454	5,666	61.0%
2011	3,476	5,666	61.4%
2012	3,305	5,666	58.3%
2013	3,222	5,666	56.9%
2014	3,241	5,666	57.2%
2015	3,298	5,666	58.2%
2016	3,134	5,666	55.3%
2017	2,350	5,666	41.5%
2018	2,286	5,666	40.4%
2019	1,870	5,666	33.0%

**Data source:** U. S. EPA Air Markets Program Database (<https://ampd.epa.gov/ampd/>)

Table 6 shows the emissions from specific facilities subject to the NO<sub>x</sub> SIP Call since 2003. Of the twelve facilities identified in Table 3, four facilities (Cargill, DOE Oak Ridge, DuPont Old Hickory, and Liberty Fibers) shut down their NO<sub>x</sub> SIP Call units and three facilities (TVA Cumberland<sup>6</sup>, TVA Johnsonville<sup>7</sup>, and Valero) added NO<sub>x</sub> SIP Call units. One facility (Domtar) is identified in EPA’s Clean Air Markets database but has never been granted an allowance allocation or otherwise subjected to the NO<sub>x</sub> SIP Call<sup>8</sup>. Of the remaining facilities,

<sup>6</sup> TVA’s Cumberland Fossil Plant includes one non-EGU auxiliary boiler. This boiler was operating prior to 2015 but appears to have been counted with TVA’s EGU emissions.

<sup>7</sup> TVA’s Johnsonville cogeneration facility includes two non-EGU boilers that began operation in 2018.

<sup>8</sup> Domtar’s Kingsport facility includes a biomass boiler with a design heat input of 544 MMBtu/hr, but Condition E6-10 of Title Operating Permit 573622 limits the annual capacity factor for other fuels (natural gas and fuel oils) to 10%. The biomass boiler does not meet the definition of an “affected unit” pursuant to TAPCR 1200-03-27-.12(1)(c)1 (a unit with a maximum design heat input greater than 250

Eastman Chemical, Resolute Forest Products, and Tate & Lyle had significant decreases in NO<sub>x</sub> emissions due to full or partial conversions from coal to natural gas operation.

Facility Name	Years Subject to the NO <sub>x</sub> SIP Call		NO <sub>x</sub> Emissions (tons)		NO <sub>x</sub> Emission Rate (lb/MMBtu)	
	First Year	Last Year	First Year	Last Year	First Year	Last Year
Cargill Corn Milling	2003	2014	5	5	0.039	0.049
TVA Cumberland (non-EGU Boiler)	2015	2019	2	8	0.055	0.058
DOE Oak Ridge Y-12	2003	2009	126	126	0.653	0.582
Domtar Paper Co., LLC	2003	2003	177	177	0.667	0.667
DuPont Old Hickory	2003	2011	366	3	0.586	0.197
Eastman Chemical Company	2003	2019	2,931	1,656	0.354	0.188
TVA Johnsonville (non-EGU Boiler)	2018	2019	1	1	0.005	0.006
Liberty Fibers Corporation	2004	2005	250	206	0.800	0.784
Packaging Corporation of America	2003	2019	14	55	0.172	0.195
Resolute Forest Products	2003	2019	1,304	74	0.886	0.297
Tate & Lyle-Loudon	2003	2019	881	67	0.509	0.054
Valero Refining Company	2013	2019	18	9	0.033	0.038

**V.2. Adequacy of Eastman’s Proposed Monitoring Method**

Eastman’s request for approval of alternative monitoring is determined to be acceptable, as follows:

- Appendix E to 40 CFR Part 75<sup>9</sup> establishes sufficient periodic testing requirements to establish the NO<sub>x</sub> emission rate for each boiler.
- The monitoring and calculation procedures specified by Appendix E are sufficient to measure NO<sub>x</sub> emissions across the range of operating conditions. Continuous monitoring of the oxygen concentration in the boiler duct will assure that the boilers are operated in a manner that is representative of the performance test. The requested alternative includes provisions for additional performance testing if the boiler does not meet the quality assurance requirements established by Appendix E.
- The work practice requirements of 40 CFR 63 Subpart DDDDD (periodic tune-ups) will provide additional assurance of proper boiler operation

MMBtu/hr that combusts, or will combust during any year, fossil fuel alone or in combination with any other fuel, where fossil fuel is projected to comprise more than 50% of the annual heat input on a Btu basis).

<sup>9</sup> Eastman’s request to require periodic testing for a single boiler is discussed in Section VI.

### **V.2.1. Periodic Testing**

Section 2.1 of Appendix E requires periodic testing to establish the NO<sub>x</sub> emission rate at varying load levels (minimum of four load levels) and at an excess oxygen concentration that is representative of each load level. The source must measure the fuel flow rate during the performance test to demonstrate that the boiler is operating in accordance with the selected load levels during each performance test. The NO<sub>x</sub> performance test must be repeated at least every 20 calendar quarters, or whenever the quality assurance requirements are not met (see Section V.2.2).

### **V.2.2. Continuous Monitoring and Quality Assurance**

Continuous emissions monitoring systems (CEMS) provide the most reliable and timely information for determining compliance, but other methods, including periodic stack testing combined with continuous parametric monitoring, are adequate under many circumstances. When periodic testing and continuous parameter monitoring are used in lieu of CEMS, monitoring must be sufficient to ensure that that performance does not degrade after the initial performance test.

For natural gas-fired boilers, Appendix E specifies excess oxygen level as a critical quality assurance parameter and requires monitoring of the excess oxygen level during each hour of boiler operation. The NO<sub>x</sub> emission rate and heat input correlation must be redetermined if the excess oxygen level at any heat input rate (or unit operating load) is more than 2 percentage points above the excess oxygen level recorded at the same heat input rate during the performance test "for one or more successive operating periods totaling more than 16 consecutive<sup>10</sup> unit operating hours".

The Division considered whether additional parametric monitoring is required for quality assurance and determined that the monitoring specified by Appendix E is sufficient to assure that boiler performance remains consistent with the performance test.

NO<sub>x</sub> emissions are dependent upon fuel nitrogen content, burner temperature, and excess air. The fuel nitrogen content of pipeline natural gas is low and is not expected to vary. Excess air is measured via the oxygen concentration, and the burner temperature is directly proportional to the excess air flow at a given heat input. No other parameters were identified that could affect NO<sub>x</sub> emissions.

### **V.2.3. Periodic Tune-Up Requirements**

These boilers are also subject to 40 CFR 63 Subpart DDDDD (National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters).

For boilers that use a continuous oxygen trim system to maintain an optimum air-to-fuel ratio, §§63.7540(a)(10) and (12) require a tune-up of the boiler or process heater every 5 years. The tune-up must include, as applicable, inspection, cleaning, and replacement of burner components; inspection and optimization of the flame pattern; inspection and calibration of the system controlling the air-to-fuel ratio; and optimizing total CO emissions, consistent with any NO<sub>x</sub> requirement to which the unit is subject.

<sup>10</sup> See U. S. EPA, *Part 75 Emissions Monitoring Policy Manual* (2013), Question 24.8. "Consecutive" can include periods of non-operation, but the clock resets if the parameter returns to normal for even one hour prior to the 16<sup>th</sup> hour.

## **VI. Conclusion**

The proposed change would not increase NO<sub>x</sub> emissions from Eastman's B-253 boilers and would not alter the NO<sub>x</sub> SIP Call budget that limits emissions from the affected units because: (1) Eastman's NO<sub>x</sub> emissions remain substantially below the facility's NO<sub>x</sub> budget established pursuant to 1200-03-27-.12; (2) Tennessee's review of all non-EGUs subject to the NO<sub>x</sub> SIP Call demonstrates that NO<sub>x</sub> emissions for the collection of affected facilities are operating well below the state's NO<sub>x</sub> budget; (3) the alternative monitoring requirements would be permanent, enforceable and sufficient to determine whether the source is in compliance with the NO<sub>x</sub> SIP Call emissions requirements; and (4) the work practice requirements of 40 CFR 63 Subpart DDDDD (periodic tune-ups) will provide additional assurance that the boilers are operating properly.

Tennessee requests that EPA adopt the specific monitoring, recordkeeping and reporting requirements/conditions associated with B-253 Boilers 25 through 29 as identified in Conditions 1 through 19 of operating permit 077509. In a separate action, Tennessee is proposing to amend the monitoring requirements TAPCR 1200-03-27-.12(11) by allowing affected units to monitor NO<sub>x</sub> emissions in accordance with 40 CFR 60 Subpart D, 40 CFR 60 Subpart Db, or an alternative method approved by the Technical Secretary in a revision to the State Implementation Plan in lieu of the existing requirement to monitor NO<sub>x</sub> emissions in accordance with 40 CFR Part 75. Therefore, Tennessee requests conditional approval of the source-specific SIP revision and commits to completion of the amendments to TAPCR 1200-03-27-.12(11) not later than one year after the date of approval of the plan revision. Tennessee understands that any such conditional approval shall be treated as a disapproval if the State fails to comply with such commitment.

## **Second Item**

Packaging Corporation of America  
NO<sub>x</sub> SIP Call Permit 078563 and 110(l) Demonstration  
Combination Boiler #1

STATE OF TENNESSEE  
 AIR POLLUTION CONTROL BOARD  
 DEPARTMENT OF ENVIRONMENT AND CONSERVATION  
 NASHVILLE, TENNESSEE 37243



**OPERATING PERMIT** Issued Pursuant to Tennessee Air Quality Act

Issue Date:	***** <b>DRAFT</b> *****	Permit Number: 078563
Issued To:	Packaging Corporation of America	Facility ID: 36-0002
Installation Description:	Combination Boiler #1	Installation Address Highway 57 Counce
		Emission Source Reference No. 36-0002-17 SIP

The holder of this permit shall comply with the conditions contained in this permit as well as all applicable provisions of the Tennessee Air Pollution Control Regulations (TAPCR).

**CONDITIONS:**

1. Pursuant to 40 CFR §51.121(i)(1), upon issuance of this permit, approval of this permit into Tennessee’s State Implementation Plan by U. S. EPA, and approval of the monitoring program specified in **Condition 3** of this permit, the permittee may demonstrate compliance with TAPCR 1200-03-27-.12 by monitoring nitrogen oxides (NO<sub>x</sub>) emissions from Combination Boiler #1 using the alternative NO<sub>x</sub> monitoring provisions contained in **Conditions 2 through 5** of this permit in lieu of the requirements established by TAPCR 1200-03-27-.12(11)(a).

Tennessee Air Pollution Control Regulations (TAPCR) 1200-03-09-.03(8), 40 CFR §51.121(i)(1)

\_\_\_\_\_  
 TECHNICAL SECRETARY

No Authority is Granted by this Permit to Operate, Construct, or Maintain any Installation in Violation of any Law, Statute, Code, Ordinance, Rule, or Regulation of the State of Tennessee or any of its Political Subdivisions.

**POST AT INSTALLATION ADDRESS**



2. Pursuant to 40 CFR §51.121(i)(1), upon issuance of this permit and approval of this permit into Tennessee's State Implementation Plan by U.S. EPA, the permittee may demonstrate compliance with TAPCR 1200-03-27-.12 by monitoring NO<sub>x</sub> emissions from Combination Boiler #1 using the monitoring methodologies for NO<sub>x</sub> emission rate set forth in 40 CFR Part 60, Appendix B in combination with monitoring of heat input. The permittee must continue to monitor NO<sub>x</sub> emissions in accordance with TAPCR 1200-03-27-.12(11)(a) and 40 CFR Part 75 until the monitoring plan required by **Condition 3** is approved and all required certification testing is performed and approved by the Technical Secretary.

TAPCR 1200-03-09-.03(8), 40 CFR §51.121(i)(1)

3. The permittee shall submit a program for conducting continuous in-stack monitoring for NO<sub>x</sub> mass emissions for approval. To be approvable the program shall address the following:
- (a) A description of the overall monitoring program;
  - (b) Specifications demonstrating that the proposed monitoring instruments will meet the requirements of 40 CFR 60, Appendix B;
  - (c) Specifications for the proposed fuel flow meter and a discussion of how the fuel Btu content will be determined;
  - (d) Proposed location(s) of the monitoring instruments on the boiler effluent gas stream;
  - (e) Proposed procedures for conducting performance specification testing of the monitoring instruments in units of the applicable standard (i.e. NO<sub>x</sub> mass emissions);
  - (f) Proposed ongoing monitoring instrument quality assurance procedures (40 CFR 60, Appendix F or approved alternative);
  - (g) Procedures for addressing missing data (40 CFR 75, Appendix C, Appendix F or approved alternative); and
  - (h) Proposed format for the reporting of data.

The report shall be submitted to the Technical Secretary at the following address:

Division of Air Pollution Control  
Attn: Compliance Validation Program  
William R. Snodgrass Tennessee Tower  
312 Rosa L. Parks Avenue, 15<sup>th</sup> Floor  
Nashville, TN 37243  
e-mail (PDF): [Air.Pollution.Control@tn.gov](mailto:Air.Pollution.Control@tn.gov)

**Note:** The permittee has previously submitted documentation for paragraphs (b), (d), and (e) of this condition, and no further action is required for these items as long as the currently certified monitoring system continues to be used as previously approved.

TAPCR 1200-03-09-.03(8), 40 CFR §51.121(i)(1)

4. The permittee shall calculate NO<sub>x</sub> mass emissions (in tons) for each control period and report the total to the Technical Secretary no later than December 31 following the end of the control period. NO<sub>x</sub> emissions shall be calculated from continuous emissions monitoring system (CEMS) measurements using Method 19 in Appendix A to 40 CFR Part 60.

- (a) For each hour in the control period:
  - (i) Calculate the NO<sub>x</sub> emission rate in lb/MMBtu;
  - (ii) Measure fuel flow rate and calculate the heat input in MMBtu; and
  - (iii) Calculate NO<sub>x</sub> emissions as the NO<sub>x</sub> emission rate in lb/MMBtu multiplied by the heat input in MMBtu.
- (b) At the end of the control period, calculate the total NO<sub>x</sub> emissions as the sum of the hourly NO<sub>x</sub> emissions for each hour. Divide the total NO<sub>x</sub> emissions by 2,000 to calculate the total NO<sub>x</sub> emissions in tons, and report the total NO<sub>x</sub> emissions to the Technical Secretary at the following address:

Division of Air Pollution Control  
Attn: Emissions Inventory and Special Projects  
William R. Snodgrass Tennessee Tower  
312 Rosa L. Parks Avenue, 15<sup>th</sup> Floor  
Nashville, TN 37243  
e-mail (PDF): [Air.Pollution.Control@tn.gov](mailto:Air.Pollution.Control@tn.gov)

TAPCR 1200-03-09-.03(8), 40 CFR §51.121(i)(1)

- 5. The permittee shall maintain records of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this part recorded in a permanent form suitable for inspection. These records shall be retained for at least five years following the end of the control period in which the such measurements, maintenance, reports, and records were collected.

TAPCR 1200-03-09-.03(8), 40 CFR §51.121(i)(1)

## **Proposed Approval of Alternative Monitoring and Clean Air Act §110(l) Demonstration**

### **Packaging Corporation of America, Combination Boiler #1 Tennessee Air Pollution Control Regulations 1200-03-27-.12(11)**

On September 16, 2020, Packaging Corporation of America (PCA) submitted a petition to request approval of alternative monitoring, recordkeeping, and reporting requirements for one boiler subject to the NO<sub>x</sub> SIP Call (Combination Boiler #1) at PCA's Counce Mill. The Tennessee Department of Environment and Conservation, Division of Air Pollution Control, is proposing to approve PCA's petition, subject to the limitations and exceptions identified herein.

The specific monitoring requirements for Combination Boiler #1 will be implemented via operating permit 078563. The Division proposes to issue this permit after appropriate notice and comment and to submit the final permit to U. S. EPA for adoption into Tennessee's State Implementation Plan.

#### **I. Background**

On October 27, 1998 (63 FR 57356), EPA adopted the *Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone* (NO<sub>x</sub> SIP Call), which required 22 States and the District of Columbia to submit State Implementation Plan (SIP) revisions to prohibit specified amounts of NO<sub>x</sub> emissions for the purpose of reducing NO<sub>x</sub> and ozone transport across State boundaries in the eastern half of the United States. This rule also established the NO<sub>x</sub> Budget Trading Program, which allowed States to comply with the required emissions reductions via an interstate cap-and-trade program for electric generating units (EGUs) and for large industrial boilers and combustion turbines (i. e., non-EGUs). Tennessee implemented the NO<sub>x</sub> Budget Trading Program between 2003 and 2008, when the program was superseded by the Clean Air Interstate Rule (CAIR) Ozone Season NO<sub>x</sub> Trading Program.

EPA replaced CAIR with the Cross-State Air Pollution Rule (CSAPR) NO<sub>x</sub> trading programs on January 1, 2015. The applicability provisions of the CSAPR ozone season trading programs cover EGUs only, and non-EGU boilers are not covered under CSAPR. To preserve the NO<sub>x</sub> reductions established by the NO<sub>x</sub> SIP Call, the Tennessee Air Pollution Control Board approved Tennessee Air Pollution Control Regulations (TAPCR) 1200-03-27-.12 (NO<sub>x</sub> SIP Call Requirements for Stationary Boilers and Combustion Turbines). Tennessee submitted the rule to EPA's Region 4 office on February 27, 2017 and requested that EPA approve the rule into Tennessee's SIP.

TAPCR 1200-03-27-.12(11)(a) requires the owners and operators of an affected unit to comply with the applicable monitoring, recordkeeping, and reporting requirements provided in 40 CFR part 75 for each control period. On March 8, 2019, EPA published a final rule revising the emissions monitoring provisions required under the NO<sub>x</sub> SIP Call (84 FR 8422). This rule allows States to amend their SIPs to establish emissions monitoring alternatives to Part 75 for units subject to the NO<sub>x</sub> SIP Call<sup>1</sup>. In approving this rule, EPA stated that the Part 75 monitoring requirements were applied to non-EGU sources in the context of regional emission trading programs, including the NO<sub>x</sub> Budget Trading Program and the CAIR NO<sub>x</sub> Ozone Season Trading

<sup>1</sup> This revision does not include EGUs or other units subject to the Acid Rain Program or the CSAPR emission trading programs.

Program, which have been discontinued<sup>2</sup>. EPA also noted the substantial margins by which NO<sub>x</sub> SIP Call States are complying with their emissions budgets – overall seasonal NO<sub>x</sub> emissions from NO<sub>x</sub> SIP Call States are less than 40% of the States’ NO<sub>x</sub> budgets, and no State reported NO<sub>x</sub> emissions exceeding 71% of its budget<sup>3</sup>.

SIPs that approve alternatives to Part 75 must continue to include some form of emissions monitoring requirements for these types of sources, consistent with the NO<sub>x</sub> SIP Call’s general enforceability and monitoring requirements at § 51.121(f)(1) and (i)(1).

**II. Current Monitoring Requirements**

§ 75.10 requires affected sources to install, certify, operate, and maintain, in accordance with all the requirements of Part 75, a NO<sub>x</sub>-diluent continuous emission monitoring system (CEMS), consisting of a NO<sub>x</sub> pollutant concentration monitor and an O<sub>2</sub> or CO<sub>2</sub> diluent gas monitor, with an automated data acquisition and handling system for measuring and recording NO<sub>x</sub> concentration (in ppm), O<sub>2</sub> or CO<sub>2</sub> concentration (in percent O<sub>2</sub> or CO<sub>2</sub>) and NO<sub>x</sub> emission rate (in lb/MMBtu) discharged to the atmosphere, except as provided in §§75.12 and 75.17 and Subpart E of Part 75. Pursuant to §75.12(c), hourly, quarterly, and annual NO<sub>x</sub> emission rates must be calculated from the NO<sub>x</sub> concentration, diluent concentration, and percent moisture (if applicable) measurements using the procedures established in Appendix F to Part 75.

**III. Requested Alternative Monitoring**

The petition requests approval to use 40 CFR Part 60 Appendix B (Performance Specification 2—Specifications and Test Procedures for SO<sub>2</sub> and NO<sub>x</sub> Continuous Emission Monitoring Systems in Stationary Sources) as an alternative to the CEMS requirements of Part 75.

**IV. Justification for Alternative Monitoring**

The petition states that PCA uses NO<sub>x</sub> CEMS to demonstrate compliance with the Counce Mill’s Plantwide Applicability Limit (PAL) permit. Combination Boiler #1 is the only monitor within the mill that is subject to the requirements of 40 CFR Part 75, and the other NO<sub>x</sub> sources at the mill operate CEMS in accordance with 40 CFR Part 60. The petition states that PCA wishes to streamline the monitoring requirements among the sources at the mill.

<sup>2</sup> EPA notes that Part 75 monitoring is necessary for emission trading programs, because these programs can function only with timely reporting of consistent, quality-assured mass emissions data by all participating units.

<sup>3</sup> For Tennessee, EPA reported the following numbers for 2019:

2019 Ozone Season non-EGU NO <sub>x</sub> Emissions (tons)		
NO <sub>x</sub> Emissions (tons)	NO <sub>x</sub> Budget	Total Emissions (% of Budget)
1,870	5,666 (3,928*)	34% (48%*)
* The non-EGU portion of Tennessee’s NO <sub>x</sub> budget is 5,666 tons. Of this total, 1,738 tons are set aside for new source growth, leaving 3,928 tons of NO <sub>x</sub> emissions allocated to existing units. The 2018 non-EGU NO <sub>x</sub> emissions, as a percentage of Tennessee’s NO <sub>x</sub> budget, were calculated using both numbers.		

## **V. Review of PCA's Alternative Monitoring Request, Clean Air Act §110(l) Requirements**

The Division of Air Pollution Control reviewed PCA's alternative monitoring request, giving consideration to emissions from the affected unit and the adequacy of the proposed monitoring method.

Attainment and maintenance plans in Tennessee rely upon control of NO<sub>x</sub> emissions. Section 110(l) of the Clean Air Act (CAA)<sup>4</sup> prohibits revision of a SIP that would interfere with attainment or maintenance of a NAAQS, reasonable further progress toward attainment of a NAAQS, or any other applicable requirement of the CAA. Because this rule is part of Tennessee's SIP, the requirements of CAA §110(l) must be satisfied before changing the existing monitoring requirements.

The Division proposes to approve PCA's request. The proposed revision would not interfere with any applicable requirement concerning attainment or maintenance of a NAAQS or reasonable further progress toward attainment of a NAAQS.

- NO<sub>x</sub> emissions from PCA's Combination Boiler #1 are substantially below the facility's NO<sub>x</sub> budget established pursuant to 1200-03-27-.12, and the change would not result in an increase in NO<sub>x</sub> emissions. The proposed monitoring alternative would not alter the NO<sub>x</sub> SIP Call budget that limits emissions from the affected unit.
- The alternate monitoring requirements are permanent, enforceable and sufficient to determine whether the source is in compliance with the NO<sub>x</sub> SIP Call emissions requirements.
- The work practice requirements of 40 CFR 63 Subpart DDDDD (periodic tune-ups) will provide additional assurance of proper boiler operation

### **V.1. Emissions**

EPA's proposed approval of NO<sub>x</sub> SIP Call monitoring alternatives (83 FR 48751) notes the substantial margin by which NO<sub>x</sub> SIP Call states are complying with the portions of their statewide emissions budgets assigned to large EGUs and large non-EGU boilers and turbines, averaging less than 40% of the statewide NO<sub>x</sub> budgets in 2017.

PCA's NO<sub>x</sub> SIP Call allowance allocation is 85 tons, and EPA's Clean Air Markets database<sup>5</sup> indicates that PCA emitted 65% of its allocation during the 2019 ozone season. PCA's ozone season NO<sub>x</sub> emissions are shown in Table 1.

<sup>4</sup>"Each revision to an implementation plan submitted by a State under this chapter shall be adopted by such State after reasonable notice and public hearing. The Administrator shall not approve a revision of a plan if the revision would interfere with any applicable requirement concerning attainment and reasonable further progress (as defined in section 7501 of this title), or any other applicable requirement of this chapter."

<sup>5</sup> <https://ampd.epa.gov/ampd/>

<b>Year</b>	<b>Program(s) Selected</b>	<b>NO<sub>x</sub> Emissions (tons)</b>	<b>Heat Input (MMBtu)</b>	<b>NO<sub>x</sub> Emission Rate (lb/MMBtu)</b>
2003	NBP	14.0	163,405	0.172
2004	NBP	13.6	204,977	0.133
2005	NBP	8.4	107,977	0.156
2006	NBP	8.9	118,124	0.151
2007	NBP	15.3	159,124	0.192
2008	NBP	10.6	148,577	0.142
2008	CAIROS	10.6	148,577	0.142
2009	CAIROS	2.3	37,142	0.125
2010	CAIROS	3.1	62,548	0.099
2011	CAIROS	13.0	230,968	0.112
2012	CAIROS	2.9	42,189	0.138
2013	CAIROS	4.5	58,403	0.155
2014	CAIROS	1.2	19,604	0.122
2015	SIPNOX	0.8	8,716	0.180
2016	SIPNOX	21.4	393,778	0.109
2017	SIPNOX	37.5	612,969	0.122
2018	SIPNOX	45.5	683,515	0.133
2019	SIPNOX	55.2	565,415	0.195

PCA is also subject to a Plantwide Applicability Limit (PAL) for NO<sub>x</sub> of 1,665.5 tons during all intervals of 12 consecutive months. The PAL applies to 18 emission sources at the facility<sup>6</sup>, including Combination Boiler #1. PALs are enforceable as a practical matter and are established source-wide in accordance with Tennessee’s PSD regulations (TAPCR 1200-03-09-.01(4) (s)1 through 15). Any physical change in or change in the method of operation of the PAL source that causes it to emit the PAL pollutant at a level equal to or greater than the PAL is a major modification, and the Technical Secretary may increase the PAL only if the major stationary source complies with TAPCR 1200-03-09-.01(4)(s)11<sup>7</sup>.

<sup>6</sup> The sources covered by the NO<sub>x</sub> PAL are Recovery Furnace #3 (36-0002-01); Recovery Furnace #1 (36-0002-02); Recovery Furnace #2 (36-0002-03); Lime Kiln #1 (36-0002-07); Lime Kiln #2 (36-0002-08); Combination Boiler #1 (36-0002-17); Combination Boiler #2 (36-0002-18); #2 and #4Woodyards Diesel Engine (36-0002-22/23); Kiln 1 Auxiliary Drive Diesel-Fired Engine (36-0002-37); Kiln 2 Auxiliary Drive Diesel-Fired Engine (36-0002-38); Compression Ignition Emergency Stationary ICE for Caustic Area Stand-by Generator (36-0002-40); Compression Ignition Emergency Stationary ICE for Emergency Fire Pond Pump (36-0002-41); Spark Ignition Emergency Stationary ICE for TG-2 Lube Oil Pumps Back Up Power (36-0002-42); Spark Ignition Emergency Stationary ICE for Admin Building Stand-By Generator (36-0002-43); Spark Ignition Emergency Stationary ICE for Operations Building PI Computer Stand-By Generator (36-0002-44); Spark Ignition Emergency Stationary ICE for Shipping Computer Room Stand-By Generator (36-0002-45); Spark Ignition Emergency Stationary ICE for TG-1 Lube Oil Pumps Back Up Power (36-0002-46); and Spark Ignition Emergency Stationary ICE for Off-Site Railway Scale Stand-By Generator (36-0002-47).

<sup>7</sup> The owner or operator of the major stationary source must submit a complete application to request an increase in the PAL limit for a PAL major modification. The application requirements are:

- Identify the emissions unit(s) contributing to the increase in emissions so as to cause the major stationary source’s emissions to equal or exceed its PAL.
- Demonstrate that the sum of the baseline actual emissions (calculated separately for small emissions units and for significant and major emissions units assuming application of BACT equivalent controls), plus the sum of the allowable emissions of the new or modified emissions unit(s), exceeds the PAL.

Table 2 shows Tennessee’s NO<sub>x</sub> emissions for all affected non-EGU sources subject to the NO<sub>x</sub> Budget Trading Program (2003 – 2008), CAIR NO<sub>x</sub> Ozone Season Trading Program (2009 – 2014), and State NO<sub>x</sub> SIP Call regulation (2015 – 2019). Since the implementation of the NO<sub>x</sub> Budget Trading Program in 2004, Tennessee’s ozone season NO<sub>x</sub> emissions from these affected sources have decreased from 59.8% of Tennessee’s non-EGU NO<sub>x</sub> Budget in 2004 to 33.0% of Tennessee’s non-EGU NO<sub>x</sub> Budget in 2019.

<b>Year</b>	<b>Total NO<sub>x</sub> Emissions (tons)</b>	<b>Non-EGU NO<sub>x</sub> Budget (tons)</b>	<b>% of NO<sub>x</sub> Budget</b>
2003	5,804	5,666	102.4%
2004	3,389	5,666	59.8%
2005	3,879	5,666	68.5%
2006	3,833	5,666	67.6%
2007	3,737	5,666	66.0%
2008	3,661	5,666	64.6%
2009	3,524	5,666	62.2%
2010	3,454	5,666	61.0%
2011	3,476	5,666	61.4%
2012	3,305	5,666	58.3%
2013	3,222	5,666	56.9%
2014	3,241	5,666	57.2%
2015	3,298	5,666	58.2%
2016	3,134	5,666	55.3%
2017	2,350	5,666	41.5%
2018	2,286	5,666	40.4%
2019	1,870	5,666	33.0%

**Data source:** U. S. EPA Air Markets Program Database (<https://ampd.epa.gov/ampd/>)

Table 3 shows the emissions from specific facilities subject to the NO<sub>x</sub> SIP Call since 2003. Of the twelve facilities identified in Table 3, four facilities (Cargill, DOE Oak Ridge, DuPont Old Hickory, and Liberty Fibers) shut down their NO<sub>x</sub> SIP Call units and three facilities (TVA Cumberland<sup>8</sup>, TVA Johnsonville<sup>9</sup>, and Valero) added

- Conduct a new BACT analysis to determine the required level of control on each significant or major emissions unit, unless the emissions unit is currently required to comply with a BACT or LAER requirement that was established within the preceding 10 years.

The owner or operator must obtain a major NSR permit for all emissions units, regardless of the magnitude of the emissions increase resulting from them (any emissions increase above the PAL is significant). These emissions units must comply with any emissions requirements resulting from the major NSR process (e. g., BACT), even though they have also become (or continue to be) subject to the PAL.

<sup>8</sup> TVA’s Cumberland Fossil Plant includes one non-EGU auxiliary boiler. This boiler was operating prior to 2015 but appears to have been counted with TVA’s EGU emissions.

<sup>9</sup> TVA’s Johnsonville cogeneration facility includes two non-EGU boilers that began operation in 2018.

NO<sub>x</sub> SIP Call units. One facility (Domtar) is identified in EPA's Clean Air Markets database but has never been granted an allowance allocation or otherwise subjected to the NO<sub>x</sub> SIP Call<sup>10</sup>. Of the remaining facilities, Eastman Chemical, Resolute Forest Products, and Tate & Lyle had significant decreases in NO<sub>x</sub> emissions due to full or partial conversions from coal to natural gas operation.

**Table 2: Change in NO<sub>x</sub> Emissions by Facility**

Facility Name	Years Subject to the NO <sub>x</sub> SIP Call		NO <sub>x</sub> Emissions (tons)		NO <sub>x</sub> Emission Rate (lb/MMBtu)	
	First Year	Last Year	First Year	Last Year	First Year	Last Year
Cargill Corn Milling	2003	2014	5	5	0.039	0.049
TVA Cumberland (non-EGU Boiler)	2015	2019	2	8	0.055	0.058
DOE Oak Ridge Y-12	2003	2009	126	126	0.653	0.582
Domtar Paper Co., LLC	2003	2003	177	177	0.667	0.667
DuPont Old Hickory	2003	2011	366	3	0.586	0.197
Eastman Chemical Company	2003	2019	2,931	1,656	0.354	0.188
TVA Johnsonville (non-EGU Boiler)	2018	2019	1	1	0.005	0.006
Liberty Fibers Corporation	2004	2005	250	206	0.800	0.784
Packaging Corporation of America	2003	2019	14	55	0.172	0.195
Resolute Forest Products	2003	2019	1,304	74	0.886	0.297
Tate & Lyle-Loudon	2003	2019	881	67	0.509	0.054
Valero Refining Company	2013	2019	18	9	0.033	0.038

**V.2. Alternative Monitoring Requirements**

Upon approval of the requested alternative into the SIP, PCA would be allowed to demonstrate compliance with TAPCR 1200-03-27-.12 by monitoring NO<sub>x</sub> emissions from Combination Boiler #1 using the monitoring methodologies set forth in 40 CFR Part 60, Appendix B. PCA would continue to monitor NO<sub>x</sub> emissions in accordance with 40 CFR Part 75 until all required certification testing is performed and approved by the Technical Secretary.

Tennessee will require PCA to calculate NO<sub>x</sub> mass emissions (in tons) for each ozone season using NO<sub>x</sub> emission rate data obtained in accordance with the applicable NSPS subpart and to report the total to the Division of Air Pollution Control no later than December 31 following that ozone season. The NO<sub>x</sub> emission rate will be calculated from Part 60 CEMS measurements using Method 19 in Appendix A to 40 CFR Part 60.

Following receipt of PCA's report, Tennessee will review PCA's total emissions and the emissions from other affected units in the state, including any emissions from new affected units, to verify that Tennessee's ozone-season NO<sub>x</sub> budget has not been exceeded. Should the total emissions from any affected unit (at PCA or any

<sup>10</sup> Domtar's Kingsport facility includes a biomass boiler with a design heat input of 544 MMBtu/hr, but Condition E6-10 of Title Operating Permit 573622 limits the annual capacity factor for other fuels (natural gas and fuel oils) to 10%. The biomass boiler does not meet the definition of an "affected unit" pursuant to TAPCR 1200-03-27-.12(1)(c)1 (a unit with a maximum design heat input greater than 250 MMBtu/hr that combusts, or will combust during any year, fossil fuel alone or in combination with any other fuel, where fossil fuel is projected to comprise more than 50% of the annual heat input on a Btu basis).



other facility) exceed its allowance allocation, Tennessee will pursue appropriate action in accordance with TAPCR 1200-03-27-.12(7)(c), including the deduction of allowances for the following control period and the assessment of civil penalties or other remedies.

### **V.3. Periodic Tune-Up Requirements**

Combination Boiler #1 is also subject to 40 CFR 63 Subpart DDDDD (National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters). Subpart DDDDD requires boilers and process heaters with a heat input capacity of 10 MMBtu/hr or greater that do not use a continuous oxygen trim system to maintain an optimum air-to-fuel ratio to perform an annual tune-up of the boiler or process heater as specified in §63.7540(a)(10)(i) through (vi). Boilers and process heaters that use a continuous oxygen trim system to maintain an optimum air-to-fuel ratio must perform tune-ups every five years.

Tune-ups must be performed while burning the fuel(s) that provided the majority of the heat input to the boiler or process heater over the 12 months prior to the tune-up. The tune-ups must include, as applicable, inspection, cleaning, and replacement of burner components; inspection and optimization of the flame pattern; inspection and calibration of the system controlling the air-to-fuel ratio; and optimizing total CO emissions, consistent with any NO<sub>x</sub> requirement to which the unit is subject.

## **VI. Conclusion**

The proposed change would not increase NO<sub>x</sub> emissions from PCA's Combination Boiler #1 and would not alter the NO<sub>x</sub> SIP Call budget that limits emissions from the affected unit because: (1) PCA's NO<sub>x</sub> emissions remain substantially below the facility's NO<sub>x</sub> budget established pursuant to 1200-03-27-.12; (2) Tennessee's review of all non-EGUs subject to the NO<sub>x</sub> SIP Call demonstrates that NO<sub>x</sub> emissions for the collection of affected facilities are operating well below the state's NO<sub>x</sub> budget; (3) the alternative monitoring requirements would be permanent, enforceable and sufficient to determine whether the source is in compliance with the NO<sub>x</sub> SIP Call emissions requirements; and (4) the work practice requirements of 40 CFR 63 Subpart DDDDD (periodic tune-ups) will provide additional assurance that the boiler is operating properly.

Tennessee requests that EPA adopt the specific monitoring, recordkeeping and reporting requirements/conditions associated with Combination Boiler #1 at PCA as identified in Conditions 1 through 5 of operating permit 078563. In a separate action, Tennessee is proposing to amend the monitoring requirements TAPCR 1200-03-27-.12(11) by allowing affected units to monitor NO<sub>x</sub> emissions in accordance with 40 CFR 60 Subpart D, 40 CFR 60 Subpart Db, or an alternative method approved by the Technical Secretary in a revision to the State Implementation Plan in lieu of the existing requirement to monitor NO<sub>x</sub> emissions in accordance with 40 CFR Part 75. Therefore, Tennessee requests conditional approval of the source-specific SIP revision and commits to completion of the amendments to TAPCR 1200-03-27-.12(11) not later than one year after the date of approval of the plan revision. Tennessee understands that any such conditional approval shall be treated as a disapproval if the State fails to comply with such commitment.

**To:** Air Pollution Control Board Members  
**From:** Travis Blake  
**Date:** April 6, 2021  
**Subject:** Proposed Landfill Rule 0400-30-39-.03

On August 29, 2016, the U. S. EPA adopted 40 CFR 60 Subpart XXX (Standards of Performance for Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, or Modification After July 17, 2014) and 40 CFR 60 Subpart Cf (Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills). These rules updated the control requirements to reduce air emissions from solid waste landfills to require controls at lower emission rates and to update existing requirements for monitoring of landfill gas collection system wellheads and surface emissions. Section 111(d) of the Clean Air Act authorizes EPA to promulgate emission guidelines for source categories and requires states to adopt state plans to implement the emission guidelines. If a state does not implement the emission guidelines, facilities in the source category must comply with a federal plan.

The Division of Air Pollution Control is proposing to add a new rule at Tennessee Air Pollution Control Regulations (TAPCR) 0400-30-39-.03 (Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills). This rule would implement 40 CFR 60 Subpart Cf and would apply to municipal solid waste landfills that commenced construction, reconstruction, or modification on or before July 17, 2014. The rule would also adopt by reference the provisions of 40 CFR 60 Subpart XXX, as published in the August 29, 2016 and March 26, 2020 editions of the Federal Register.

The Division will also propose to repeal TAPCR 1200-03-07-.07(7) and 1200-03-07-07(9). These rules incorporated the landfill requirements established by 40 CFR 60 Subpart WWW (Standards of Performance for Municipal Solid Waste Landfills) and 40 CFR 60 Subpart Cc (Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills). The requirements established by Subparts WWW and Cc have been superseded by Subparts XXX and Cf.

**Department of State  
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Notice ID(s): \_\_\_\_\_  
File Date: \_\_\_\_\_

# Notice of Rulemaking Hearing

*Hearings will be conducted in the manner prescribed by the Uniform Administrative Procedures Act, T.C.A. § 4-5-204. For questions and copies of the notice, contact the person listed below.*

<b>Agency/Board/Commission:</b>	Air Pollution Control Board
<b>Division:</b>	Air Pollution Control
<b>Contact Person:</b>	Travis Blake
<b>Address:</b>	William R. Snodgrass Tennessee Tower 312 Rosa L. Parks Avenue, 15th Floor Nashville, TN 37243
<b>Phone:</b>	(615) 532-0617
<b>Email:</b>	<a href="mailto:travis.blake@tn.gov">travis.blake@tn.gov</a>

*Any Individuals with disabilities who wish to participate in these proceedings (to review these filings) and may require aid to facilitate such participation should contact the following at least 10 days prior to the hearing:*

<b>ADA Contact:</b>	ADA Coordinator
<b>Address:</b>	William R. Snodgrass Tennessee Tower 312 Rosa L. Parks Avenue, 22nd Floor Nashville, Tennessee 37243
<b>Phone:</b>	1-866-253-5827 (toll free) or 615-532-0200 Hearing impaired callers may use the TN Relay Service 1-800-848-0298
<b>Email:</b>	<a href="mailto:Jennifer.Katzenmiller@tn.gov">Jennifer.Katzenmiller@tn.gov</a>

**Hearing Location(s)** (for additional locations, copy and paste table)

Address 1:	Conference Room 15A		
Address 2:	William R. Snodgrass Tennessee Tower 312 Rosa L. Parks Avenue, 15th Floor		
City:	Nashville, Tennessee		
Zip:	37243		
Hearing Date:	mm/dd/yyyy		
Hearing Time:		___ CST/CDT	___ EST/EDT

*The Department of Environment and Conservation is committed to the Tennessee Pledge and reopening responsibly. All individuals planning to attend this hearing are asked to follow the current recommended guidelines for social distancing, hygiene, and wearing protective equipment when appropriate.*

**Alternate Hearing Option (An electronic participation option is also available. If the In-Person Hearing is Prohibited or Otherwise Inappropriate the Hearing will be Electronic-Only)**

<b>Method 1:</b>	<b>To be determined</b>
<b>Method 2:</b>	<b>To be determined</b>

**Additional Hearing Information:**

<i>If it is hard for you to read, speak, or understand English, TDEC may be able to provide translation or</i>		
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*interpretation services free of charge. Please contact Lida Warden at 615-532-0554 for more information.*

There will be a public hearing before the Technical Secretary of the Tennessee Air Pollution Control Board to consider the promulgation of amendments to the Tennessee Air Pollution Control Regulations and the State Implementation Plan pursuant to Tennessee Code Annotated section 68-201-105. The comments received at this hearing will be presented to the Tennessee Air Pollution Control Board for their consideration in regard to the proposed regulatory amendments. The hearing will be conducted in the manner prescribed by the Uniform Administrative Procedures Act, Tennessee Code Annotated Title 4, Chapter 5, Part 2 and will take place in the 15<sup>th</sup> Floor Conference Room A, William R. Snodgrass Tennessee Tower, located at 312 Rosa L. Parks Avenue, Nashville, Tennessee 37243 at 9:30 AM Central Time on \_\_\_\_\_. Written comments will be included in the hearing records if received by the close of business on \_\_\_\_\_, at the office of the Technical Secretary, Tennessee Air Pollution Control Board, William R. Snodgrass Tennessee Tower, located at 312 Rosa L. Parks Avenue 15<sup>th</sup> Floor, Nashville, Tennessee 37243. Additionally, comments may be submitted via attachments through electronic mail until the close of business on \_\_\_\_\_. Comments may be submitted via e-mail to [Air.Pollution.Control@tn.gov](mailto:Air.Pollution.Control@tn.gov).

Any individuals with disabilities who wish to participate in these proceedings or to review these filings should contact the Department of Environment and Conservation to discuss any auxiliary aids or services needed to facilitate such participation. Such initial contact may be in person, by writing, telephone, or other means, and should be made no less than 10 days prior to \_\_\_\_\_, or the date such party intends to review such filings, to allow time to provide such aid or service. Contact the Department of Environment and Conservation ADA Coordinator, William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue 22<sup>nd</sup> Floor, Nashville, TN 37243, (866) 253-5827. Hearing impaired callers may use the Tennessee Relay Service, (800) 848-0298.

If you have any questions about the origination of these rule changes, you may contact Travis Blake at (615) 532-0617. For complete copies of the text of the notice, please contact Travis Blake, Department of Environment and Conservation, William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue 15<sup>th</sup> Floor, Nashville, TN 37243 or via e-mail at [travis.blake@tn.gov](mailto:travis.blake@tn.gov).

The Tennessee Air Pollution Control Board proposes to amend Chapter 0400-30-39 (Standards of Performance for New Stationary Sources) by adding new rule 0400-30-39-.03 (Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills). The proposed rule would implement 40 C.F.R. Part 60 Subpart Cf (Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills) and would apply to municipal solid waste landfills that commenced construction, reconstruction, or modification on or before July 17, 2014. The proposed rule would also adopt by reference the provisions of 40 C.F.R. Part 60 Subpart XXX (Standards of Performance for Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, or Modification After July 17, 2014), as published in the August 29, 2016, edition of the Federal Register (81 FR 59368) and amended in the March 26, 2020, edition of the Federal Register (85 FR 17261).

Tennessee also proposes to repeal Rules 1200-03-07-.07(7) and 1200-03-07-07(9). These rules incorporated the landfill requirements established by 40 C.F.R. 60 Subpart WWW (Standards of Performance for Municipal Solid Waste Landfills) and 40 C.F.R. 60 Subpart Cc (Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills). The requirements established by Subparts WWW and Cc have been superseded by Subparts XXX and Cf.

Specific changes are indicated in a redline/strikeout version available at <http://www.tn.gov/environment/topic/ppo-air>. Interested parties may submit comments on these proposed revisions.

Revisions considered at this hearing may be adopted by the Tennessee Air Pollution Control Board under Tennessee Code Annotated section 68-201-105, the Board's general authority to promulgate rules. All persons interested in the air quality of the State of Tennessee are urged to attend and will be afforded the opportunity to present testimony to the hearing officer regarding the proposed revisions to the State Implementation Plan. Any person desiring to present lengthy comments should be prepared at the hearing to offer a written statement to be incorporated into the record. Written statements not presented at the hearings will only be considered part of the records if received by 4:30 PM on \_\_\_\_\_, at the office of the Technical Secretary, Tennessee Air Pollution Control Board, William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue 15<sup>th</sup> Floor, Nashville, TN 37243.

**Revision Type (check all that apply):**

Amendment

New

\_\_\_\_ Repeal

**Rule(s)** (ALL chapters and rules contained in filing must be listed. If needed, copy and paste additional tables to accommodate more than one chapter. Please enter only **ONE** Rule Number/Rule Title per row.)

<b>Chapter Number</b>	<b>Chapter Title</b>
0400-30-39	Standards of Performance for New Stationary Sources
<b>Rule Number</b>	<b>Rule Title</b>
0400-30-39-.03	Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills

<b>Chapter Number</b>	<b>Chapter Title</b>
1200-03-07	Process Emission Standards
<b>Rule Number</b>	<b>Rule Title</b>
1200-03-07-.07	General Provisions and Applicability for Process Gaseous Emission Standards

Place substance of rules and other info here. Statutory authority must be given for each rule change. For information on formatting rules go to <https://sos.tn.gov/products/division-publications/rulemaking-guidelines>.

Chapter 0400-30-39  
Standards of Performance for New Stationary Sources

New Rule

Chapter 0400-30-39 Standards of Performance for New Stationary Sources is amended by adding a new rule to read as follows:

0400-30-39-.03 Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills

- (1) Each municipal solid waste landfill for which construction, reconstruction, or modification was commenced on or before July 17, 2014, that has accepted waste at any time since November 8, 1987, or has additional design capacity available for future waste deposition, shall satisfy the standards and requirements as follow:
  - (a) For the purpose of this paragraph, the definitions listed in 40 C.F.R. Part 60 Subpart XXX, § 60.761 apply, except as follows:
    1. "Administrator" means the Technical Secretary of the Tennessee Air Pollution Control Board in those cases for which authority to implement and enforce provisions of the rule have been delegated to the State of Tennessee. Otherwise, "Administrator" means the Administrator of the United States Environmental Protection Agency.
    2. "State" means the State of Tennessee.
  - (b) All facilities subject to this paragraph shall comply with the provisions of 40 C.F.R. Part 60 Subpart XXX, §§ 60.762 through 60.769, except as listed in parts 1 through 3 of this subparagraph.
    1. For any facility subject to this paragraph on the effective date of this rule, the initial design capacity report required by 40 C.F.R. § 60.767(a) and the initial nonmethane organic compounds (NMOC) emission rate report required by 40 C.F.R. § 60.767(b) are due 90 days after the effective date of EPA approval of the state's plan under section 111(d) of the Clean Air Act.
    2. When an MSW landfill subject to this paragraph is in the closed landfill subcategory, as defined in 40 C.F.R. § 60.41f, the owner or operator is not subject to the following reports, provided the owner or operator submitted these reports on or before July 17, 2014, under the provisions of 40 C.F.R. Part 60 Subpart WWW; 40 C.F.R. Part 62 Subpart GGG; or a state plan implementing 40 C.F.R. Part 60 Subpart Cc:
      - (i) Initial design capacity report specified in 40 C.F.R. § 60.38f(a).
      - (ii) Initial or subsequent NMOC emission rate report specified in 40 C.F.R. § 60.38f(c), provided that the most recent NMOC emission rate report indicated the NMOC emissions were below 50 Mg/yr.
      - (iii) Collection and control system design plan specified in 40 C.F.R. § 60.38f(d).
      - (iv) Closure report specified in 40 C.F.R. § 60.38f(f).
      - (v) Equipment removal report specified in 40 C.F.R. § 60.38f(g).
      - (vi) Initial annual report specified in 40 C.F.R. § 60.38f(h).
      - (vii) Initial performance test report in 40 C.F.R. § 60.38f(i).

3. For any affected facility for which higher operating temperatures were previously approved at one or more wellheads pursuant to 40 C.F.R. § 60.753(c):
  - (i) Pursuant to 40 C.F.R. § 60.767(c)(2), the established higher operating temperatures must be submitted in the gas collection and control system (GCCS) design plan as alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions of 40 C.F.R. §§ 60.763 through 60.768.
  - (ii) The facility must provide the data required by 40 C.F.R. § 60.763(c) to support the higher operating temperature.
  - (iii) The Technical Secretary will review the information and approve or disapprove the higher operating temperatures, or request that additional information be submitted.
  - (iv) Any higher operating temperatures established pursuant to 40 C.F.R. § 60.753(c) will remain valid until:
    - (I) Final disapproval of any requested alternatives by the Technical Secretary, or
    - (II) The design plan due date, if higher operating temperatures are not requested in the design plan.
- (c) The provisions of 40 C.F.R. Part 60 Subpart XXX (Standards of Performance for Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, or Modification After July 17, 2014) are hereby adopted by reference as published in the August 29, 2016, edition of the Federal Register (81 FR 59368) and amended in the March 26, 2020, edition of the Federal Register (85 FR 17261). If the definitions in 40 C.F.R. Part 60 Subpart XXX, as incorporated, conflict with the definitions in subparagraph (a) of this paragraph, the definitions in subparagraph (a) of this paragraph shall apply.
- (d) For any facility subject to this paragraph, compliance with 40 C.F.R. Part 60 Subpart XXX, as adopted herein, ensures compliance with the requirements codified in 40 C.F.R. Part 60 Subparts Cc, Cf, and WWW.

Authority: T.C.A. §§ 4-5-201 et seq. and 68-201-101 et seq.

Chapter 1200-03-07  
Process Emission Standards

Amendments

Paragraph (7) of Rule 1200-03-07-.07 General Provisions and Applicability for Process Gaseous Emission Standards is amended by deleting it in its entirety and substituting instead the following:

- (7) ~~Reserved. (See Rule 0400-30-39-.03.) Each municipal solid waste landfill for which construction, reconstruction or modification was commenced before July 17, 2014 that has accepted waste at any time since November 8, 1987 and each municipal solid waste landfill for which construction, reconstruction or modification was commenced before May 30, 1991 that has additional design capacity available for future waste deposition, shall satisfy the standards and requirements as follow:~~
  - ~~(a) For what follows, "Administrator" means the Technical Secretary of the Tennessee Air Pollution Control Board in those cases for which Authority to implement and enforce provisions of the rule have been delegated to Tennessee. Otherwise, "Administrator" means the Administrator of the United States Environmental Protection Agency. "State" means the State of Tennessee."~~
  - ~~(b) For the purpose of this paragraph, the definitions listed in 40 CFR Part 60 Subpart WWW, § 60.751 apply.~~

~~(c) All facilities subject to this paragraph shall comply with the provisions of 40 CFR Part 60 Subpart WWW, §§ 60.752 through 60.759, except as listed in Parts 1 and 2 of this subparagraph.~~

~~1. The initial design capacity report required by § 60.757(a) shall be submitted no later than March 28, 1999. This submittal date shall replace the submittal dates listed in § 60.757(a)(1)(i) through (ii).~~

~~2. The initial NMOC emission rate report required by § 60.757(b) shall be submitted with the initial design capacity report required under Part 1 of this subparagraph. The date for the submittal of the initial NMOC emission rate report as listed in § 60.757(b)(1)(i) shall be replaced by the requirement to submit this report no later than March 28, 1999.~~

~~(d) Adopted herein by reference are the Federal regulations in Paragraph (9) of this rule as appearing in Subpart WWW of 40 CFR Part 60. Source: (published in the Federal Register / Vol. 61, No. 49 / Tuesday, March 12, 1996 / Rules and Regulations 9919), unless otherwise noted and as amended at 63 FR 32750 - 32753, June 16, 1998; 64 FR 9262, February 24, 1999; 65 FR 18908 and 18909, April 10, 2000; 65 FR 61778, October 17, 2000; 71 FR 55127, September 21, 2006.~~

Authority: T.C.A. §§ 4-5-201 et seq. and 68-201-101 et seq.

Paragraph (9) of Rule 1200-03-07-07 General Provisions and Applicability for Process Gaseous Emission Standards is amended by deleting it in its entirety and substituting instead the following:

(9) Reserved. (See Rule 0400-30-39-.03.) Subpart WWW – Standards of Performance for Municipal Solid Waste Landfills

~~Sec.~~

~~60.750 Applicability, designation of affected facility, and delegation of authority.~~

~~60.751 Definitions.~~

~~60.752 Standards for air emissions from municipal solid waste landfills.~~

~~60.753 Operational standards for collection and control systems.~~

~~60.754 Test methods and procedures.~~

~~60.755 Compliance provisions.~~

~~60.756 Monitoring of operations.~~

~~60.757 Reporting requirements.~~

~~60.758 Recordkeeping requirements.~~

~~60.759 Specifications for active collection systems.~~

~~Authority: 42 U.S.C. 7401, 7411, 7414, 7416 and 7601.~~

~~Subpart WWW – Standards of Performance for Municipal Solid Waste Landfills~~

~~§ 60.750 Applicability, designation of affected facility, and delegation of authority.~~

~~(a) The provisions of this subpart apply to each municipal solid waste landfill that commenced construction, reconstruction or modification or began accepting waste on or after May 30, 1991. Physical or operational changes made to an existing MSW landfill solely to comply with Subpart Cc of this part are not considered construction, reconstruction, or modification for the purposes of this section.~~

~~(b) The following authorities shall be retained by the Administrator and not transferred to the State: §60.754(a)(5).~~

~~(c) Activities required by or conducted pursuant to a CERCLA, RCRA, or State remedial action are not considered construction, reconstruction, or modification for purposes of this subpart.~~

~~§ 60.751 Definitions.~~

~~As used in this subpart, all terms not defined herein shall have the meaning given them in the Act or in subpart A of this part.~~



~~“Active collection system” means a gas collection system that uses gas mover equipment.~~

~~“Active landfill” means a landfill in which solid waste is being placed or a landfill that is planned to accept waste in the future.~~

~~“Closed landfill” means a landfill in which solid waste is no longer being placed, and in which no additional solid wastes will be placed without first filing a notification of modification as prescribed under § 60.7(a)(4). Once a notification of modification has been filed, and additional solid waste is placed in the landfill, the landfill is no longer closed.~~

~~“Closure” means that point in time when a landfill becomes a closed landfill.~~

~~“Commercial solid waste” means all types of solid waste generated by stores, offices, restaurants, warehouses, and other nonmanufacturing activities, excluding residential and industrial wastes.~~

~~“Controlled landfill” means any landfill at which collection and control systems are required under this subpart as a result of the nonmethane organic compounds emission rate. The landfill is considered controlled at the time a collection and control system design plan is submitted in compliance with § 60.752(b)(2)(i).~~

~~“Design capacity” means the maximum amount of solid waste a landfill can accept, as indicated in terms of volume or mass in the most recent permit issued by the State, local, or Tribal agency responsible for regulating the landfill, plus any in-place waste not accounted for in the most recent permit. If the owner or operator chooses to convert the design capacity from volume to mass or from mass to volume to demonstrate its design capacity is less than 2.5 million megagrams or 2.5 million cubic meters, the calculation must include a site specific density, which must be recalculated annually.~~

~~“Disposal facility” means all contiguous land and structures, other appurtenances, and improvements on the land used for the disposal of solid waste.~~

~~“Emission rate cutoff” means the threshold annual emission rate to which a landfill compares its estimated emission rate to determine if control under the regulation is required.~~

~~“Enclosed combustor” means an enclosed firebox which maintains a relatively constant limited peak temperature generally using a limited supply of combustion air. An enclosed flare is considered an enclosed combustor.~~

~~“Flare” means an open combustor without enclosure or shroud.~~

~~“Gas mover equipment” means the equipment (i.e., fan, blower, compressor) used to transport landfill gas through the header system.~~

~~“Household waste” means any solid waste (including garbage, trash, and sanitary waste in septic tanks) derived from households (including, but not limited to, single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas).~~

~~“Industrial solid waste” means solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under Subtitle C of the Resource Conservation and Recovery Act, parts 264 and 265 of this title. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: electric power generation; fertilizer/agricultural chemicals; food and related products/by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste or oil and gas waste.~~

~~“Interior Well” means any well or similar collection component located inside the perimeter of the landfill. A perimeter well located outside the landfilled waste is not an interior well.~~

~~“Landfill” means an area of land or an excavation in which wastes are placed for permanent disposal, and that is not a land application unit, surface impoundment, injection well, or waste pile as those terms are defined under § 257.2 of this title.~~

~~“Lateral expansion” means a horizontal expansion of the waste boundaries of an existing MSW landfill. A lateral~~

~~expansion is not a modification unless it results in an increase in the design capacity of the landfill.~~

~~“Modification” means an increase in the permitted volume design capacity of the landfill by either horizontal or vertical expansion based on its permitted design capacity as of May 30, 1991. Modification does not occur until the owner or operator commences construction on the horizontal or vertical expansion.~~

~~“Municipal solid waste landfill” or “MSW landfill” means an entire disposal facility in a contiguous geographical space where household waste is placed in or on land. An MSW landfill may also receive other types of RCRA Subtitle D wastes (§ 257.2 of this title) such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. Portions of an MSW landfill may be separated by access roads. An MSW landfill may be publicly or privately owned. An MSW landfill may be a new MSW landfill, an existing MSW landfill, or a lateral expansion.~~

~~“Municipal solid waste landfill emissions” or “MSW landfill emissions” means gas generated by the decomposition of organic waste deposited in an MSW landfill or derived from the evolution of organic compounds in the waste.~~

~~“NMOC” means nonmethane organic compounds, as measured according to the provisions of § 60.754.~~

~~“Nondegradable waste” means any waste that does not decompose through chemical breakdown or microbiological activity. Examples are, but are not limited to, concrete, municipal waste combustor ash, and metals.~~

~~“Passive collection system” means a gas collection system that solely uses positive pressure within the landfill to move the gas rather than using gas mover equipment.~~

~~“Sludge” means any solid, semisolid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility, exclusive of the treated effluent from a wastewater treatment plant.~~

~~“Solid waste” means any garbage, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges that are point sources subject to permits under 33 U.S.C. 1342, or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended (42 U.S.C 2011 et seq.).~~

~~“Sufficient density” means any number, spacing, and combination of collection system components, including vertical wells, horizontal collectors, and surface collectors, necessary to maintain emission and migration control as determined by measures of performance set forth in this part.~~

~~“Sufficient extraction rate” means a rate sufficient to maintain a negative pressure at all wellheads in the collection system without causing air infiltration, including any wellheads connected to the system as a result of expansion or excess surface emissions, for the life of the blower.~~

~~§ 60.752 Standards for air emissions from municipal solid waste landfills.~~

~~(a) Each owner or operator of an MSW landfill having a design capacity less than 2.5 million megagrams by mass or 2.5 million cubic meters by volume shall submit an initial design capacity report to the Administrator as provided in § 60.757(a). The landfill may calculate design capacity in either megagrams or cubic meters for comparison with the exemption values. Any density conversions shall be documented and submitted with the report. Submittal of the initial design capacity report shall fulfill the requirements of this subpart except as provided for in paragraphs (a)(1) and (a)(2) of this section.~~

~~1. The owner or operator shall submit to the Administrator an amended design capacity report, as provided for in § 60.757(a)(3).~~

~~2. When an increase in the maximum design capacity of a landfill exempted from the provisions of § 60.752(b) through § 60.759 of this subpart on the basis of the design capacity exemption in paragraph (a) of this section results in a revised maximum design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, the owner or operator shall comply with~~

~~the provision of paragraph (b) of this section.~~

~~(b) Each owner or operator of an MSW landfill having a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, shall either comply with paragraph (b)(2) of this section or calculate an NMOC emission rate for the landfill using the procedures specified in § 60.754. The NMOC emission rate shall be recalculated annually, except as provided in § 60.757(b)(1)(ii) of this subpart. The owner or operator of an MSW landfill subject to this subpart with a design capacity greater than or equal to 2.5 million megagrams and 2.5 million cubic meters is subject to part 70 or 71 permitting requirements.~~

~~1. If the calculated NMOC emission rate is less than 50 megagrams per year, the owner or operator shall:~~

~~(i) Submit an annual emission report to the Administrator, except as provided for in § 60.757(b)(1)(ii); and~~

~~(ii) Recalculate the NMOC emission rate annually using the procedures specified in § 60.754(a)(1) until such time as the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, or the landfill is closed.~~

~~(A) If the NMOC emission rate, upon recalculation required in paragraph (b)(1)(ii) of this section, is equal to or greater than 50 megagrams per year, the owner or operator shall install a collection and control system in compliance with paragraph (b)(2) of this section.~~

~~(B) If the landfill is permanently closed, a closure notification shall be submitted to the Administrator as provided for in § 60.757(d).~~

~~2. If the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, the owner or operator shall:~~

~~(i) Submit a collection and control system design plan prepared by a professional engineer to the Administrator within 1 year:~~

~~(A) The collection and control system as described in the plan shall meet the design requirements of paragraph (b)(2)(ii) of this section.~~

~~(B) The collection and control system design plan shall include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions of §§ 60.753 through 60.758 proposed by the owner or operator.~~

~~(C) The collection and control system design plan shall either conform with specifications for active collection systems in § 60.759 or include a demonstration to the Administrator's satisfaction of the sufficiency of the alternative provisions to § 60.759.~~

~~(D) The Administrator shall review the information submitted under paragraphs (b)(2)(i)(A), (B) and (C) of this section and either approve it, disapprove it, or request that additional information be submitted. Because of the many site-specific factors involved with landfill gas system design, alternative systems may be necessary. A wide variety of system designs are possible, such as vertical wells, combination horizontal and vertical collection systems, or horizontal trenches only, leachate collection components, and passive systems.~~

~~(ii) Install a collection and control system that captures the gas generated within the landfill as required by paragraphs (b)(2)(ii)(A) or (B) and (b)(2)(iii) of this section within 30 months after the first annual report in which the emission rate equals or exceeds 50 megagrams per year, unless Tier 2 or Tier 3 sampling demonstrates that the emission rate is less than 50 megagrams per year, as specified in &60.757(c)(1) or (2).~~

~~(A) An active collection system shall:~~

- ~~(1) Be designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control or treatment system equipment;~~
- ~~(2) Collect gas from each area, cell, or group of cells in the landfill in which the initial solid waste has been placed for a period of:
 
  - ~~(i) 5 years or more if active; or~~
  - ~~(ii) 2 years or more if closed or at final grade;~~~~
- ~~(3) Collect gas at a sufficient extraction rate;~~
- ~~(4) Be designed to minimize off-site migration of subsurface gas.~~
- ~~(B) A passive collection system shall:
 
  - ~~(1) Comply with the provisions specified in paragraphs (b)(2)(ii)(A)(1),(2), and (2)(ii)(A)(4) of this section.~~
  - ~~(2) Be installed with liners on the bottom and all sides in all areas in which gas is to be collected. The liners shall be installed as required under § 258.40 of this title.~~~~
- ~~(iii) Route all the collected gas to a control system that complies with the requirements in either paragraph (b)(2)(iii)(A), (B) or (C) of this section.
 
  - ~~(A) An open flare designed and operated in accordance with § 60.18 except as noted in §60.754(e);~~
  - ~~(B) A control system designed and operated to reduce NMOC by 98 weight percent, or, when an enclosed combustion device is used for control, to either reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as hexane at 3 percent oxygen. The reduction efficiency or parts per million by volume shall be established by an initial performance test to be completed no later than 180 days after the initial startup of the approved control system using the test methods specified in § 60.754(d).
 
    - ~~(1) If a boiler or process heater is used as the control device, the landfill gas stream shall be introduced into the flame zone.~~
    - ~~(2) The control device shall be operated within the parameter ranges established during the initial or most recent performance test. The operating parameters to be monitored are specified in § 60.756;~~~~
  - ~~(C) Route the collected gas to a treatment system that processes the collected gas for subsequent sale or use. All emissions from any atmospheric vent from the gas treatment system shall be subject to the requirements of paragraph (b)(2)(iii)(A) or (B) of this section.~~~~
- ~~(iv) Operate the collection and control device installed to comply with this subpart in accordance with the provisions of § § 60.753, 60.755 and 60.756.~~
- ~~(v) The collection and control system may be capped or removed provided that all the conditions of paragraphs (b)(2)(v)(A), (B), and (C) of this section are met:
 
  - ~~(A) The landfill shall be a closed landfill as defined in §60.751 of this subpart. A closure report shall be submitted to the Administrator as provided in § 60.757(d);~~~~

~~(B) — The collection and control system shall have been in operation a minimum of 15 years; and~~

~~(C) — Following the procedures specified in § 60.754(b) of this subpart, the calculated NMOC gas produced by the landfill shall be less than 50 megagrams per year on three successive test dates. The test dates shall be no less than 90 days apart, and no more than 180 days apart.~~

~~(c) — For purposes of obtaining an operating permit under title V of the Act, the owner or operator of a MSW landfill subject to this subpart with a design capacity less than 2.5 million megagrams or 2.5 million cubic meters is not subject to the requirement to obtain an operating permit for the landfill under part 70 or 71 of this chapter, unless the landfill is otherwise subject to either part 70 or 71. For purposes of submitting a timely application for an operating permit under part 70 or 71, the owner or operator of a MSW landfill subject to this subpart with a design capacity greater than or equal to 2.5 million megagrams and 2.5 million cubic meters, and not otherwise subject to either part 70 or 71, becomes subject to the requirements of §§70.5(a)(1)(i) or 71.5(a)(1)(i) of this chapter, regardless of when the design capacity report is actually submitted, no later than:~~

~~1. — June 10, 1996 for MSW landfills that commenced construction, modification, or reconstruction on or after May 30, 1991 but before March 12, 1996;~~

~~2. — Ninety days after the date of commenced construction, modification, or reconstruction for MSW landfills that commence construction, modification, or reconstruction on or after March 12, 1996.~~

~~(d) — When a MSW landfill subject to this subpart is closed, the owner or operator is no longer subject to the requirement to maintain an operating permit under part 70 or 71 of this chapter for the landfill if the landfill is not otherwise subject to the requirements of either part 70 or 71 and if either of the following conditions are met:~~

~~1. — The landfill was never subject to the requirement for a control system under paragraph (b)(2) of this section; or~~

~~2. — The owner or operator meets the conditions for control system removal specified in paragraph (b)(2)(v) of this section.~~

#### ~~§ 60.753 Operational standards for collection and control systems.~~

~~Each owner or operator of an MSW landfill gas collection and control system used to comply with the provisions of § 60.752(b)(2)(ii) of this subpart shall:~~

~~(a) — Operate the collection system such that gas is collected from each area, cell, or group of cells in the MSW landfill in which solid waste has been in place for:~~

~~1. — 5 years or more if active; or~~

~~2. — 2 years or more if closed or at final grade;~~

~~(b) — Operate the collection system with negative pressure at each wellhead except under the following conditions:~~

~~1. — A fire or increased well temperature. The owner or operator shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports as provided in § 60.757(f)(1);~~

~~2. — Use of a geomembrane or synthetic cover. The owner or operator shall develop acceptable pressure limits in the design plan;~~

~~3. — A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes shall be approved by the Administrator;~~

~~(c) — Operate each interior wellhead in the collection system with a landfill gas temperature less than 55°C and~~

with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent. The owner or operator may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.

- ~~1. The nitrogen level shall be determined using Method 3C, unless an alternative test method is established as allowed by § 60.752(b)(2)(i) of this subpart.~~
- ~~2. Unless an alternative test method is established as allowed by § 60.752(b)(2)(i) of this subpart, the oxygen shall be determined by an oxygen meter using Method 3A or 3C except that:
 
  - ~~(i) The span shall be set so that the regulatory limit is between 20 and 50 percent of the span;~~
  - ~~(ii) A data recorder is not required;~~
  - ~~(iii) Only two calibration gases are required, a zero and span, and ambient air may be used as the span;~~
  - ~~(iv) A calibration error check is not required;~~
  - ~~(v) The allowable sample bias, zero drift, and calibration drift are ± 10 percent.~~~~
- ~~(d) Operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill. To determine if this level is exceeded, the owner or operator shall conduct surface testing around the perimeter of the collection area along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The owner or operator may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing.~~
- ~~(e) Operate the system such that all collected gases are vented to a control system designed and operated in compliance with § 60.752(b)(2)(iii). In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within 1 hour; and~~
- ~~(f) Operate the control or treatment system at all times when the collected gas is routed to the system.~~
- ~~(g) If monitoring demonstrates that the operational requirements in paragraphs (b), (c), or (d) of this section are not met, corrective action shall be taken as specified in § 60.755(a)(3) through (5) or § 60.755(c) of this subpart. If corrective actions are taken as specified in § 60.755, the monitored exceedance is not a violation of the operational requirements in this section.~~

~~§ 60.754 Test methods and procedures.~~

- ~~(a) 1. The landfill owner or operator shall calculate the NMOC emission rate using either the equation provided in paragraph (a)(1)(i) of this section or the equation provided in paragraph (a)(1)(ii) of this section. Both equations may be used if the actual year-to-year solid waste acceptance rate is known, as specified in paragraph (a)(1)(i), for part of the life of the landfill and the actual year-to-year solid waste acceptance rate is unknown, as specified in paragraph (a)(1)(ii), for part of the life of the landfill. The values to be used in both equations are 0.05 per year for k, 170 cubic meters per megagram for L<sub>0</sub>, and 4,000 parts per million by volume as hexane for the C<sub>NMOC</sub>.
 
  - ~~(i) The following equation shall be used if the actual year-to-year solid waste acceptance rate is known:~~~~

$$M_{NMOC} = \sum_{i=1}^n 2kL_o M_i (e^{-kt_i}) (C_{NMOC}) (3.6 \times 10^{-9})$$

where,

$M_{NMOC}$  = Total NMOC emission rate from the landfill, megagrams per year  
 $k$  = methane generation rate constant, year<sup>-1</sup>  
 $L_0$  = methane generation potential, cubic meters per megagram solid waste  
 $M_i$  = mass of solid waste in the  $i^{th}$  section, megagrams  
 $t_i$  = age of the  $i^{th}$  section, years  
 $C_{NMOC}$  = concentration of NMOC, parts per million by volume as hexane  
 $3.6 \times 10^{-9}$  = conversion factor

The mass of nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value for  $M_i$  if documentation of the nature and amount of such wastes is maintained.

(ii) The following equation shall be used if the actual year-to-year solid waste acceptance rate is unknown.

$$M_{NMOC} = 2L_0 R (e^{-kc} - e^{-kt}) (C_{NMOC})(3.6 \times 10^{-9})$$

where,

$M_{NMOC}$  = mass emission rate of NMOC, megagrams per year  
 $L_0$  = methane generation potential, cubic meters per megagram solid waste  
 $R$  = average annual acceptance rate, megagrams per year  
 $k$  = methane generation rate constant, year<sup>-1</sup>  
 $t$  = age of landfill, years  
 $C_{NMOC}$  = concentration of NMOC, parts per million by volume as hexane  
 $c$  = time since closure, years. For active landfill  $c = 0$  and  $e^{-kc} = 1$   
 $3.6 \times 10^{-9}$  = conversion factor

The mass of nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating a value for  $R$ , if documentation of the nature and amount of such wastes is maintained.

2. Tier 1. The owner or operator shall compare the calculated NMOC mass emission rate to the standard of 50 megagrams per year.

(i) If the NMOC emission rate calculated in paragraph (a)(1) of this section is less than 50 megagrams per year, then the landfill owner shall submit an emission rate report as provided in § 60.757(b)(1), and shall recalculate the NMOC mass emission rate annually as required under § 60.752(b)(1).

(ii) If the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, then the landfill owner shall either comply with § 60.752(b)(2), or determine a site-specific NMOC concentration and recalculate the NMOC emission rate using the procedures provided in paragraph (a)(3) of this section.

3. Tier 2. The landfill owner or operator shall determine the NMOC concentration using the following sampling procedure. The landfill owner or operator shall install at least two sample probes per hectare of landfill surface that has retained waste for at least 2 years. If the landfill is larger than 25 hectares in area, only 50 samples are required. The sample probes should be located to avoid known areas of nondegradable solid waste. The owner or operator shall collect and analyze one sample of landfill gas from each probe to determine the NMOC concentration using Method 25 or 25C of appendix A of this part. Method 18 of appendix A of this part may be used to analyze the samples collected by the Method 25 or 25C sampling procedure. Taking composite samples from different probes into a single cylinder is allowed; however, equal sample

~~volumes must be taken from each probe. For each composite, the sampling rate, collection times, beginning and ending cylinder vacuums, or alternate volume measurements must be recorded to verify that composite volumes are equal. Composite sample volumes should not be less than one liter unless evidence can be provided to substantiate the accuracy of smaller volumes. Terminate compositing before the cylinder approaches ambient pressure where measurement accuracy diminishes. If using Method 18 of appendix A of this part, the owner or operator must identify all compounds in the sample and, as a minimum, test for those compounds published in the most recent Compilation of Air Pollutant Emission Factors (AP-42), minus carbon monoxide, hydrogen sulfide, and mercury. As a minimum, the instrument must be calibrated for each of the compounds on the list. Convert the concentration of each Method 18 compound to CNMOC as hexane by multiplying by the ratio of its carbon atoms divided by six. If more than the required number of samples are taken, all samples shall be used in the analysis. The landfill owner or operator shall divide the NMOC concentration from Method 25 or 25C of Appendix A of this part by six to convert from CNMOC as carbon to CNMOC as hexane. If the landfill has an active or passive gas removal system in place, Method 25 or 25C samples may be collected from these systems instead of surface probes provided the removal system can be shown to provide sampling as representative at the two sampling probe per hectare requirement. For active collection systems, samples may be collected from the common header pipe before the gas moving or condensate removal equipment. For these systems, a minimum of three samples must be collected from the header pipe.~~

- ~~(i) The landfill owner or operator shall recalculate the NMOC mass emission rate using the equations provided in paragraph (a)(1)(i) or (a)(1)(ii) of this section and using the average NMOC concentration from the collected samples instead of the default value in the equation provided in paragraph (a)(1) of this section.~~
  - ~~(ii) If the resulting mass emission rate calculated using the site-specific NMOC concentration is equal to or greater than 50 megagrams per year, then the landfill owner or operator shall either comply with § 60.752(b)(2), or determine the site-specific methane generation rate constant and recalculate the NMOC emission rate using the site-specific methane generation rate using the procedure specified in paragraph (a)(4) of this section.~~
  - ~~(iii) If the resulting NMOC mass emission rate is less than 50 megagrams per year, the owner or operator shall submit a periodic estimate of the emission rate report as provided in § 60.757(b)(1) and retest the site-specific NMOC concentration every 5 years using the methods specified in this section.~~
- ~~4. Tier 3. The site-specific methane generation rate constant shall be determined using the procedures provided in Method 2E of appendix A of this part. The landfill owner or operator shall estimate the NMOC mass emission rate using equations in paragraph (a)(1)(i) or (a)(1)(ii) of this section and using a site-specific methane generation rate constant  $k$ , and the site-specific NMOC concentration as determined in paragraph (a)(3) of this section instead of the default values provided in paragraph (a)(1) of this section. The landfill owner or operator shall compare the resulting NMOC mass emission rate to the standard of 50 megagrams per year.~~
- ~~(i) If the NMOC mass emission rate as calculated using the site-specific methane generation rate and concentration of NMOC is equal to or greater than 50 megagrams per year, the owner or operator shall comply with § 60.752(b)(2).~~
  - ~~(ii) If the NMOC mass emission rate is less than 50 megagrams per year, then the owner or operator shall submit a periodic emission rate report as provided in § 60.757(b)(1) and shall recalculate the NMOC mass emission rate annually, as provided in § 60.757(b)(1) using the equations in paragraph (a)(1) of this section and using the site-specific methane generation rate constant and NMOC concentration obtained in paragraph (a)(3) of this section. The calculation of the methane generation rate constant is performed only once, and the value obtained is used in all subsequent annual NMOC emission rate calculations.~~
- ~~5. The owner or operator may use other methods to determine the NMOC concentration or a site-specific  $k$  as an alternative to the methods required in paragraphs (a)(3) and (a)(4) of this section if the method has been approved by the Administrator.~~



~~(b) After the installation of a collection and control system in compliance with § 60.755, the owner or operator shall calculate the NMOC emission rate for purposes of determining when the system can be removed as provided in § 60.752(b)(2)(v), using the following equation:~~

$$\text{M}_{\text{NMOC}} = 1.89 \times 10^{-3} \cdot \text{Q}_{\text{LFG}} \cdot \text{C}_{\text{NMOC}}$$

~~where,~~

~~M<sub>NMOC</sub> = mass emission rate of NMOC, megagrams per year~~

~~Q<sub>LFG</sub> = flow rate of landfill gas, cubic meters per minute~~

~~C<sub>NMOC</sub> = NMOC concentration, parts per million by volume as hexane~~

~~1. The flow rate of landfill gas, Q<sub>LFG</sub>, shall be determined by measuring the total landfill gas flow rate at the common header pipe that leads to the control device using a gas flow measuring device calibrated according to the provisions of section 4 of Method 2E of appendix A of this part.~~

~~2. The average NMOC concentration, C<sub>NMOC</sub>, shall be determined by collecting and analyzing landfill gas sampled from the common header pipe before the gas moving or condensate removal equipment using the procedures in Method 25C or Method 18 of appendix A of this part. If using Method 18 of appendix A of this part, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The sample location on the common header pipe shall be before any condensate removal or other gas refining units. The landfill owner or operator shall divide the NMOC concentration from Method 25C of appendix A of this part by six to convert from C<sub>NMOC</sub> as carbon to C<sub>NMOC</sub> as hexane.~~

~~3. The owner or operator may use another method to determine landfill gas flow rate and NMOC concentration if the method has been approved by the Administrator.~~

~~(c) When calculating emissions for PSD purposes, the owner or operator of each MSW landfill subject to the provisions of this subpart shall estimate the NMOC emission rate for comparison to the PSD major source and significance levels in §§ 51.166 or 52.21 of this chapter using AP-42 or other approved measurement procedures.~~

~~(d) For the performance test required in § 60.752(b)(2)(iii)(B), Method 25, 25C, or Method 18 of appendix A of this part shall be used to determine compliance with 98 weight-percent efficiency or the 20 ppmv outlet concentration level, unless another method to demonstrate compliance has been approved by the Administrator as provided by § 60.752(b)(2)(i)(B). Method 3 or 3A shall be used to determine oxygen for correcting the NMOC concentration as hexane to 3 percent. In cases where the outlet concentration is less than 50 ppm NMOC as carbon (8 ppm NMOC as hexane), Method 25A should be used in place of Method 25. If using Method 18 of appendix A of this part, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The following equation shall be used to calculate efficiency:~~

$$\text{Control Efficiency} = (\text{NMOC}_{\text{in}} - \text{NMOC}_{\text{out}}) / (\text{NMOC}_{\text{in}})$$

~~where,~~

~~NMOC<sub>in</sub> = mass of NMOC entering control device~~

~~NMOC<sub>out</sub> = mass of NMOC exiting control device~~

~~(e) For the performance test required in § 60.752(b)(2)(iii)(A), the net heating value of the combusted landfill gas as determined in § 60.18(f)(3) is calculated from the concentration of methane in the landfill gas as measured by Method 3C. A minimum of three 30-minute Method 3C samples are determined. The measurement of other organic compounds, hydrogen, and carbon monoxide is not applicable. Method 3C may be used to determine the landfill gas molecular weight for calculating the flare gas exit velocity under § 60.18(f)(4).~~

~~§ 60.755 Compliance provisions.~~

~~(a) Except as provided in § 60.752(b)(2)(i)(B), the specified methods in paragraphs (a)(1) through (a)(6) of this section shall be used to determine whether the gas collection system is in compliance with § 60.752(b)(2)(ii).~~

~~1. For the purposes of calculating the maximum expected gas generation flow rate from the landfill to determine compliance with § 60.752(b)(2)(ii)(A)(1), one of the following equations shall be used. The k and L<sub>0</sub> kinetic factors should be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42) or other site specific values demonstrated to be appropriate and approved by the Administrator. If k has been determined as specified in § 60.754(a)(4), the value of k determined from the test shall be used. A value of no more than 15 years shall be used for the intended use period of the gas mover equipment. The active life of the landfill is the age of the landfill plus the estimated number of years until closure.~~

~~(i) For sites with unknown year-to-year solid waste acceptance rate:~~

~~$$Q_m = 2L_0 R (e^{-kc} - e^{-kt})$$~~

~~where,~~

~~Q<sub>m</sub> = maximum expected gas generation flow rate, cubic meters per year~~

~~L<sub>0</sub> = methane generation potential, cubic meters per megagram solid waste~~

~~R = average annual acceptance rate, megagrams per year~~

~~k = methane generation rate constant, year<sup>-1</sup>~~

~~t = age of the landfill at equipment installation plus the time the owner or operator intends to use the gas mover equipment or active life of the landfill, whichever is less. If the equipment is installed after closure, t is the age of the landfill at installation, years~~

~~c = time since closure, years (for an active landfill c=0 and e<sup>-kc</sup>=1)~~

~~(ii) For sites with known year-to-year solid waste acceptance rate:~~

~~$$Q_M = \sum_{i=1}^n 2kL_0 M_i (e^{-kt_i})$$~~

~~where,~~

~~Q<sub>M</sub> = maximum expected gas generation flow rate, cubic meters per year~~

~~k = methane generation rate constant, year<sup>-1</sup>~~

~~L<sub>0</sub> = methane generation potential, cubic meters per megagram solid waste~~

~~M<sub>i</sub> = mass of solid waste in the i<sup>th</sup> section, megagrams~~

~~t<sub>i</sub> = age of the i<sup>th</sup> section, years~~

~~(iii) If a collection and control system has been installed, actual flow data may be used to project the maximum expected gas generation flow rate instead of, or in conjunction with, the equations in paragraphs (a)(1)(i) and (ii) of this section. If the landfill is still accepting waste, the actual measured flow data will not equal the maximum expected gas generation rate, so calculations using the equations in paragraphs (a)(1)(i) or (ii) or other methods shall be used to predict the maximum expected gas generation rate over the intended period of use of the gas control system equipment.~~

~~2. For the purposes of determining sufficient density of gas collectors for compliance with § 60.752(b)(2)(ii)(A)(2), the owner or operator shall design a system of vertical wells, horizontal collectors, or other collection devices, satisfactory to the Administrator, capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operational and performance standards.~~

- ~~3. For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with § 60.752(b)(2)(ii)(A)(3), the owner or operator shall measure gauge pressure in the gas collection header at each individual well, monthly. If a positive pressure exists, action shall be initiated to correct the exceedance within 5 calendar days, except for the three conditions allowed under § 60.753(b). If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternate timeline for correcting the exceedance may be submitted to the Administrator for approval.~~
  - ~~4. Owners or operators are not required to install additional wells as required in paragraph (a)(3) of this section during the first 180 days after gas collection system start-up.~~
  - ~~5. For the purpose of identifying whether excess air infiltration into the landfill is occurring, the owner or operator shall monitor each well monthly for temperature and nitrogen or oxygen as provided in § 60.753(c). If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternate timeline for correcting the exceedance may be submitted to the Administrator for approval.~~
  - ~~6. An owner or operator seeking to demonstrate compliance with § 60.752(b)(2)(ii)(A)(4) through the use of a collection system not conforming to the specifications provided in § 60.759 shall provide information satisfactory to the Administrator as specified in § 60.752(b)(2)(i)(C) demonstrating that off-site migration is being controlled.~~
- ~~(b) For purposes of compliance with § 60.753(a), each owner or operator of a controlled landfill shall place each well or design component as specified in the approved design plan as provided in § 60.752(b)(2)(i). Each well shall be installed within 60 days of the date in which the initial solid waste has been in place for a period of:~~
- ~~1. 5 years or more if active; or~~
  - ~~2. 2 years or more if closed or at final grade;~~
- ~~(c) The following procedures shall be used for compliance with the surface methane operational standard as provided in § 60.753(d).~~
- ~~1. After installation of the collection system, the owner or operator shall monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals (or a site-specific established spacing) for each collection area on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in paragraph (d) of this section.~~
  - ~~2. The background concentration shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells.~~
  - ~~3. Surface emission monitoring shall be performed in accordance with section 4.3.1 of Method 21 of appendix A of this part, except that the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions.~~
  - ~~4. Any reading of 500 parts per million or more above background at any location shall be recorded as a monitored exceedance and the actions specified in paragraphs (c)(4)(i) through (v) of this section shall be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements of § 60.753(d).~~
- ~~(i) The location of each monitored exceedance shall be marked and the location recorded.~~

- ~~(ii) — Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance shall be made and the location shall be re-monitored within 10 calendar days of detecting the exceedance.~~
- ~~(iii) — If the re-monitoring of the location shows a second exceedance, additional corrective action shall be taken and the location shall be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action specified in paragraph (c)(4)(v) of this section shall be taken, and no further monitoring of that location is required until the action specified in paragraph (c)(4)(v) has been taken.~~
- ~~(iv) — Any location that initially showed an exceedance but has a methane concentration less than 500 ppm methane above background at the 10-day re-monitoring specified in paragraph (c)(4)(ii) or (iii) of this section shall be re-monitored 1 month from the initial exceedance. If the 1-month remonitoring shows a concentration less than 500 parts per million above background, no further monitoring of that location is required until the next quarterly monitoring period. If the 1 month remonitoring shows an exceedance, the actions specified in paragraph (c)(4)(iii) or (v) shall be taken.~~
- ~~(v) — For any location where monitored methane concentration equals or exceeds 500 parts per million above background three times within a quarterly period, a new well or other collection device shall be installed within 120 calendar days of the initial exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted to the Administrator for approval.~~

~~5. — The owner or operator shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis.~~

~~(d) — Each owner or operator seeking to comply with the provisions in paragraph (c) of this section shall comply with the following instrumentation specifications and procedures for surface emission monitoring devices:~~

- ~~1. — The portable analyzer shall meet the instrument specifications provided in section 3 of Method 21 of appendix A of this part, except that "methane" shall replace all references to VOC.~~
- ~~2. — The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air.~~
- ~~3. — To meet the performance evaluation requirements in section 3.1.3 of Method 21 of appendix A of this part, the instrument evaluation procedures of section 4.4 of Method 21 of appendix A of this part shall be used.~~
- ~~4. — The calibration procedures provided in section 4.2 of Method 21 of appendix A of this part shall be followed immediately before commencing a surface monitoring survey.~~

~~(e) — The provisions of this subpart apply at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction shall not exceed 5 days for collection systems and shall not exceed 1 hour for treatment or control devices.~~

~~§ 60.756 Monitoring of operations:~~

~~Except as provided in § 60.752(b)(2)(i)(B),~~

~~(a) — Each owner or operator seeking to comply with § 60.752(b)(2)(ii)(A) for an active gas collection system shall install a sampling port and a thermometer, other temperature measuring device, or an access port for temperature measurements at each wellhead and:~~

- ~~1. — Measure the gauge pressure in the gas collection header on a monthly basis as provided in § 60.755(a)(3); and~~

- ~~2. Monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis as provided in § 60.755(a)(5); and~~
  - ~~3. Monitor temperature of the landfill gas on a monthly basis as provided in § 60.755(a)(5).~~
- ~~(b) Each owner or operator seeking to comply with § 60.752(b)(2)(iii) using an enclosed combustor shall calibrate, maintain, and operate according to the manufacturer's specifications, the following equipment:~~
- ~~1. A temperature monitoring device equipped with a continuous recorder and having an accuracy of  $\pm 1$  percent of the temperature being measured expressed in degrees Celsius or  $\pm 0.5$  °C, whichever is greater. A temperature monitoring device is not required for boilers or process heaters with design heat input capacity greater than 44 megawatts.~~
  - ~~2. A device that records flow to or bypass of the control device. The owner or operator shall either:
    - ~~(i) Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or~~
    - ~~(ii) Secure the bypass line valve in the closed position with a car seal or a lock and key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.~~~~
- ~~(c) Each owner or operator seeking to comply with § 60.752(b)(2)(iii) using an open flare shall install, calibrate, maintain, and operate according to the manufacturer's specifications the following equipment:~~
- ~~1. A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame.~~
  - ~~2. A device that records flow to or bypass of the flare. The owner or operator shall either:
    - ~~(i) Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or~~
    - ~~(ii) Secure the bypass line valve in the closed position with a car seal or a lock and key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.~~~~
- ~~(d) Each owner or operator seeking to demonstrate compliance with § 60.752(b)(2)(iii) using a device other than an open flare or an enclosed combustor shall provide information satisfactory to the Administrator as provided in § 60.752(b)(2)(i)(B) describing the operation of the control device, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The Administrator shall review the information and either approve it, or request that additional information be submitted. The Administrator may specify additional appropriate monitoring procedures.~~
- ~~(e) Each owner or operator seeking to install a collection system that does not meet the specifications in § 60.759 or seeking to monitor alternative parameters to those required by § 60.753 through § 60.756 shall provide information satisfactory to the Administrator as provided in § 60.752(b)(2)(i)(B) and (C) describing the design and operation of the collection system, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The Administrator may specify additional appropriate monitoring procedures.~~
- ~~(f) Each owner or operator seeking to demonstrate compliance with § 60.755(c), shall monitor surface concentrations of methane according to the instrument specifications and procedures provided in § 60.755(d). Any closed landfill that has no monitored exceedances of the operational standard in three consecutive quarterly monitoring periods may skip to annual monitoring. Any methane reading of 500 ppm or more above background detected during the annual monitoring returns the frequency for that landfill to quarterly monitoring.~~

#### ~~§ 60.757 Reporting requirements.~~

Except as provided in § 60.752(b)(2)(i)(B),

~~(a) Each owner or operator subject to the requirements of this subpart shall submit an initial design capacity report to the Administrator.~~

~~1. The initial design capacity report shall fulfill the requirements of the notification of the date construction is commenced as required under § 60.7(a)(1) and shall be submitted no later than:~~

~~(i) June 10, 1996, for landfills that commenced construction, modification, or reconstruction on or after May 30, 1991 but before March 12, 1996, or~~

~~(ii) Ninety days after the date of commenced construction, modification, or reconstruction for landfills that commence construction, modification, or reconstruction on or after March 12, 1996.~~

~~2. The initial design capacity report shall contain the following information:~~

~~(i) A map or plot of the landfill, providing the size and location of the landfill, and identifying all areas where solid waste may be landfilled according to the permit issued by the State, local, or Tribal agency responsible for regulating the landfill.~~

~~(ii) The maximum design capacity of the landfill. Where the maximum design capacity is specified in the permit issued by the State, local, or Tribal agency responsible for regulating the landfill, a copy of the permit specifying the maximum design capacity may be submitted as part of the report. If the maximum design capacity of the landfill is not specified in the permit, the maximum design capacity shall be calculated using good engineering practices. The calculations shall be provided, along with the relevant parameters as part of the report. The State, Tribal, local agency or Administrator may request other reasonable information as may be necessary to verify the maximum design capacity of the landfill.~~

~~3. An amended design capacity report shall be submitted to the Administrator providing notification of an increase in the design capacity of the landfill, within 90 days of an increase in the maximum design capacity of the landfill to above 2.5 million megagrams and 2.5 million cubic meters. This increase in design capacity may result from an increase in the permitted volume of the landfill or an increase in the density as documented in the annual recalculation required in § 60.758(f).~~

~~(b) Each owner or operator subject to the requirements of this subpart shall submit an NMOC emission rate report to the Administrator initially and annually thereafter, except as provided for in paragraphs (b)(1)(ii) or (b)(3) of this section. The Administrator may request such additional information as may be necessary to verify the reported NMOC emission rate.~~

~~1. The NMOC emission rate report shall contain an annual or 5-year estimate of the NMOC emission rate calculated using the formula and procedures provided in § 60.754(a) or (b), as applicable.~~

~~(i) The initial NMOC emission rate report may be combined with the initial design capacity report required in paragraph (a) of this section and shall be submitted no later than indicated in paragraphs (b)(1)(i)(A) and (B) of this section. Subsequent NMOC emission rate reports shall be submitted annually thereafter, except as provided for in paragraphs (b)(1)(ii) and (b)(3) of this section.~~

~~(A) June 10, 1996, for landfills that commenced construction, modification, or reconstruction on or after May 30, 1991, but before March 12, 1996, or~~

~~(B) Ninety days after the date of commenced construction, modification, or reconstruction for landfills that commence construction on or after March 12, 1996.~~

~~(ii) If the estimated NMOC emission rate as reported in the annual report to the Administrator~~

~~is less than 50 megagrams per year in each of the next 5 consecutive years, the owner or operator may elect to submit an estimate of the NMOC emission rate for the next 5-year period in lieu of the annual report. This estimate shall include the current amount of solid waste in-place and the estimated waste acceptance rate for each year of the 5 years for which an NMOC emission rate is estimated. All data and calculations upon which this estimate is based shall be provided to the Administrator. This estimate shall be revised at least once every 5 years. If the actual waste acceptance rate exceeds the estimated waste acceptance rate in any year reported in the 5-year estimate, a revised 5-year estimate shall be submitted to the Administrator. The revised estimate shall cover the 5-year period beginning with the year in which the actual waste acceptance rate exceeded the estimated waste acceptance rate.~~

- ~~2. The NMOC emission rate report shall include all the data, calculations, sample reports and measurements used to estimate the annual or 5-year emissions.~~
  - ~~3. Each owner or operator subject to the requirements of this subpart is exempted from the requirements of paragraphs (b)(1) and (2) of this section, after the installation of a collection and control system in compliance with § 60.752(b)(2), during such time as the collection and control system is in operation and in compliance with §§ 60.753 and 60.755.~~
- ~~(c) Each owner or operator subject to the provisions of § 60.752(b)(2)(i) shall submit a collection and control system design plan to the Administrator within 1 year of the first report, required under paragraph (b) of this section, in which the emission rate exceeds 50 megagrams per year, except as follows:~~
- ~~1. If the owner or operator elects to recalculate the NMOC emission rate after Tier 2 NMOC sampling and analysis as provided in § 60.754(a)(3) and the resulting rate is less than 50 megagrams per year, annual periodic reporting shall be resumed, using the Tier 2 determined site-specific NMOC concentration, until the calculated emission rate is equal to or greater than 50 megagrams per year or the landfill is closed. The revised NMOC emission rate report, with the recalculated emission rate based on NMOC sampling and analysis, shall be submitted within 180 days of the first calculated exceedance of 50 megagrams per year.~~
  - ~~2. If the owner or operator elects to recalculate the NMOC emission rate after determining a site-specific methane generation rate constant (k), as provided in Tier 3 in § 60.754(a)(4), and the resulting NMOC emission rate is less than 50 Mg/yr, annual periodic reporting shall be resumed. The resulting site-specific methane generation rate constant (k) shall be used in the emission rate calculation until such time as the emissions rate calculation results in an exceedance. The revised NMOC emission rate report based on the provisions of § 60.754(a)(4) and the resulting site-specific methane generation rate constant (k) shall be submitted to the Administrator within 1 year of the first calculated emission rate exceeding 50 megagrams per year.~~
- ~~(d) Each owner or operator of a controlled landfill shall submit a closure report to the Administrator within 30 days of waste acceptance cessation. The Administrator may request additional information as may be necessary to verify that permanent closure has taken place in accordance with the requirements of 40 CFR 258.60 of this title. If a closure report has been submitted to the Administrator, no additional wastes may be placed into the landfill without filing a notification of modification as described under § 60.7(a)(4).~~
- ~~(e) Each owner or operator of a controlled landfill shall submit an equipment removal report to the Administrator 30 days prior to removal or cessation of operation of the control equipment.~~
- ~~1. The equipment removal report shall contain all of the following items:
    - ~~(i) A copy of the closure report submitted in accordance with paragraph (d) of this section;~~
    - ~~(ii) A copy of the initial performance test report demonstrating that the 15 year minimum control period has expired; and~~
    - ~~(iii) Dated copies of three successive NMOC emission rate reports demonstrating that the landfill is no longer producing 50 megagrams or greater of NMOC per year.~~~~
  - ~~2. The Administrator may request such additional information as may be necessary to verify that all~~

~~of the conditions for removal in § 60.752(b)(2)(v) have been met.~~

~~(f) Each owner or operator of a landfill seeking to comply with § 60.752(b)(2) using an active collection system designed in accordance with § 60.752(b)(2)(ii) shall submit to the Administrator annual reports of the recorded information in (f)(1) through (f)(6) of this paragraph. The initial annual report shall be submitted within 180 days of installation and start-up of the collection and control system, and shall include the initial performance test report required under § 60.8. For enclosed combustion devices and flares, reportable exceedances are defined under § 60.758(c).~~

- ~~1. Value and length of time for exceedance of applicable parameters monitored under § 60.756(a), (b), (c), and (d).~~
- ~~2. Description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow as specified under § 60.756.~~
- ~~3. Description and duration of all periods when the control device was not operating for a period exceeding 1 hour and length of time the control device was not operating.~~
- ~~4. All periods when the collection system was not operating in excess of 5 days.~~
- ~~5. The location of each exceedance of the 500 parts per million methane concentration as provided in § 60.753(d) and the concentration recorded at each location for which an exceedance was recorded in the previous month.~~
- ~~6. The date of installation and the location of each well or collection system expansion added pursuant to paragraphs (a)(3), (b), and (c)(4) of § 60.755.~~

~~(g) Each owner or operator seeking to comply with § 60.752(b)(2)(iii) shall include the following information with the initial performance test report required under § 60.8:~~

- ~~1. A diagram of the collection system showing collection system positioning including all wells, horizontal collectors, surface collectors, or other gas extraction devices, including the locations of any areas excluded from collection and the proposed sites for the future collection system expansion;~~
- ~~2. The data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices and the gas mover equipment sizing are based;~~
- ~~3. The documentation of the presence of asbestos or nondegradable material for each area from which collection wells have been excluded based on the presence of asbestos or nondegradable material;~~
- ~~4. The sum of the gas generation flow rates for all areas from which collection wells have been excluded based on nonproductivity and the calculations of gas generation flow rate for each excluded area; and~~
- ~~5. The provisions for increasing gas mover equipment capacity with increased gas generation flow rate, if the present gas mover equipment is inadequate to move the maximum flow rate expected over the life of the landfill; and~~
- ~~6. The provisions for the control of off-site migration.~~

#### ~~§ 60.758 Recordkeeping requirements.~~

~~(a) Except as provided in § 60.752(b)(2)(i)(B), each owner or operator of an MSW landfill subject to the provisions of § 60.752(b) shall keep for at least 5 years up-to-date, readily accessible, on-site records of the maximum design capacity report which triggered § 60.752(b), the current amount of solid waste in-place, and the year-by-year waste acceptance rate. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.~~

~~(b) Except as provided in § 60.752(b)(2)(i)(B), each owner or operator of a controlled landfill shall keep up-to-~~



~~date, readily accessible records for the life of the control equipment of the data listed in paragraphs (b)(1) through (b)(4) of this section as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring shall be maintained for a minimum of 5 years. Records of the control device vendor specifications shall be maintained until removal.~~

- ~~1. Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.752(b)(2)(ii):
    - ~~(i) The maximum expected gas generation flow rate as calculated in § 60.755(a)(1). The owner or operator may use another method to determine the maximum gas generation flow rate, if the method has been approved by the Administrator.~~
    - ~~(ii) The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in § 60.759(a)(1).~~~~
  - ~~2. Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.752(b)(2)(iii) through use of an enclosed combustion device other than a boiler or process heater with a design heat input capacity greater than 44 megawatts:
    - ~~(i) The average combustion temperature measured at least every 15 minutes and averaged over the same time period of the performance test.~~
    - ~~(ii) The percent reduction of NMOC determined as specified in § 60.752(b)(2)(iii)(B) achieved by the control device.~~~~
  - ~~3. Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.752(b)(2)(iii)(B)(1) through use of a boiler or process heater of any size: a description of the location at which the collected gas vent stream is introduced into the boiler or process heater over the same time period of the performance testing.~~
  - ~~4. Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.752(b)(2)(iii)(A) through use of an open flare, the flare type (i.e., steam-assisted, air-assisted, or nonassisted), all visible emission readings, heat content determination, flow rate or bypass flow rate measurements, and exit velocity determinations made during the performance test as specified in § 60.18; continuous records of the flare pilot flame or flare flame monitoring and records of all periods of operations during which the pilot flame of the flare flame is absent.~~
- ~~(c) Except as provided in § 60.752(b)(2)(i)(B), each owner or operator of a controlled landfill subject to the provisions of this subpart shall keep for 5 years up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored in § 60.756 as well as up-to-date, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded.~~
- ~~1. The following constitute exceedances that shall be recorded and reported under § 60.757(f):
    - ~~(i) For enclosed combustors except for boilers and process heaters with design heat input capacity of 44 megawatts (150 million British thermal unit per hour) or greater, all 3-hour periods of operation during which the average combustion temperature was more than 28 °C below the average combustion temperature during the most recent performance test at which compliance with § 60.752(b)(2)(iii) was determined.~~
    - ~~(ii) For boilers or process heaters, whenever there is a change in the location at which the vent stream is introduced into the flame zone as required under paragraph (b)(3) of this section.~~~~
  - ~~2. Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the indication of flow to the control device or the indication of bypass flow or records of monthly inspections of car seals or lock-and-key configurations used to seal bypass lines, specified under § 60.756.~~

- ~~3. Each owner or operator subject to the provisions of this subpart who uses a boiler or process heater with a design heat input capacity of 44 megawatts or greater to comply with § 60.752(b)(2)(iii) shall keep an up-to-date, readily accessible record of all periods of operation of the boiler or process heater. (Examples of such records could include records of steam use, fuel use, or monitoring data collected pursuant to other State, local, Tribal, or Federal regulatory requirements.)~~
  - ~~4. Each owner or operator seeking to comply with the provisions of this subpart by use of an open flare shall keep up-to-date, readily accessible continuous records of the flame or flare pilot flame monitoring specified under § 60.756(c), and up-to-date, readily accessible records of all periods of operation in which the flame or flare pilot flame is absent.~~
- ~~(d) Except as provided in § 60.752(b)(2)(i)(B), each owner or operator subject to the provisions of this subpart shall keep for the life of the collection system an up-to-date, readily accessible plot map showing each existing and planned collector in the system and providing a unique identification location label for each collector.~~
- ~~1. Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible records of the installation date and location of all newly installed collectors as specified under § 60.755(b).~~
  - ~~2. Each owner or operator subject to the provisions of this subpart shall keep readily accessible documentation of the nature, date of deposition, amount, and location of asbestos-containing or nondegradable waste excluded from collection as provided in § 60.759(a)(3)(i) as well as any nonproductive areas excluded from collection as provided in § 60.759(a)(3)(ii).~~
- ~~(e) Except as provided in § 60.752(b)(2)(i)(B), each owner or operator subject to the provisions of this subpart shall keep for at least 5 years up-to-date, readily accessible records of all collection and control system exceedances of the operational standards in § 60.753, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance.~~
- ~~(f) Landfill owners or operators who convert design capacity from volume to mass or mass to volume to demonstrate that landfill design capacity is less than 2.5 million megagrams or 2.5 million cubic meters, as provided in the definition of "design capacity" shall keep readily accessible, on-site records of the annual recalculation of site-specific density, design capacity, and the supporting documentation. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.~~

~~§ 60.759 Specifications for active collection systems:~~

- ~~(a) Each owner or operator seeking to comply with § 60.752(b)(2)(i) shall site active collection wells, horizontal collectors, surface collectors, or other extraction devices at a sufficient density throughout all gas producing areas using the following procedures unless alternative procedures have been approved by the Administrator as provided in § 60.752(b)(2)(i)(C) and (D):~~
- ~~1. The collection devices within the interior and along the perimeter areas shall be certified to achieve comprehensive control of surface gas emissions by a professional engineer. The following issues shall be addressed in the design: depths of refuse, refuse gas generation rates and flow characteristics, cover properties, gas system expandability, leachate and condensate management, accessibility, compatibility with filling operations, integration with closure end use, air intrusion control, corrosion resistance, fill settlement, and resistance to the refuse decomposition heat.~~
  - ~~2. The sufficient density of gas collection devices determined in paragraph (a)(1) of this section shall address landfill gas migration issues and augmentation of the collection system through the use of active or passive systems at the landfill perimeter or exterior.~~
  - ~~3. The placement of gas collection devices determined in paragraph (a)(1) of this section shall control all gas producing areas, except as provided by paragraphs (a)(3)(i) and (a)(3)(ii) of this section.~~

- (i) ~~Any segregated area of asbestos or nondegradable material may be excluded from collection if documented as provided under § 60.758(d). The documentation shall provide the nature, date of deposition, location and amount of asbestos or nondegradable material deposited in the area, and shall be provided to the Administrator upon request.~~
- (ii) ~~Any nonproductive area of the landfill may be excluded from control, provided that the total of all excluded areas can be shown to contribute less than 1 percent of the total amount of NMOC emissions from the landfill. The amount, location, and age of the material shall be documented and provided to the Administrator upon request. A separate NMOC emissions estimate shall be made for each section proposed for exclusion, and the sum of all such sections shall be compared to the NMOC emissions estimate for the entire landfill. Emissions from each section shall be computed using the following equation:~~

$$Q_i = 2 k L_0 M_i (e^{-kt_i}) (C_{NMOC}) (3.6 \times 10^{-9})$$

where,

- ~~$Q_i$  = NMOC emission rate from the  $i^{\text{th}}$  section, megagrams per year~~
- ~~$k$  = methane generation rate constant, year<sup>-1</sup>~~
- ~~$L_0$  = methane generation potential, cubic meters per megagram solid waste~~
- ~~$M_i$  = mass of the degradable solid waste in the  $i^{\text{th}}$  section, megagram~~
- ~~$t_i$  = age of the solid waste in the  $i^{\text{th}}$  section, years~~
- ~~$C_{NMOC}$  = concentration of nonmethane organic compounds, parts per million by volume~~
- ~~$3.6 \times 10^{-9}$  = conversion factor~~

- (iii) ~~The values for  $k$ ,  $L_0$ , and  $C_{NMOC}$  determined in field testing shall be used if field testing has been performed in determining the NMOC emission rate or the radii of influence (this distance from the well center to a point in the landfill where the pressure gradient applied by the blower or compressor approaches zero). If field testing has not been performed, the default values for  $k$ ,  $L_0$  and  $C_{NMOC}$  provided in § 60.754(a)(1) or the alternate values from § 60.754(a)(5) shall be used. The mass of nondegradable solid waste contained within the given section may be subtracted from the total mass of the section when estimating emissions provided the nature, location, age, and amount of the nondegradable material is documented as provided in paragraph (a)(3)(i) of this section.~~

- (b) ~~Each owner or operator seeking to comply with § 60.752(b)(2)(i)(A) shall construct the gas collection devices using the following equipment or procedures:~~

- ~~1. The landfill gas extraction components shall be constructed of polyvinyl chloride (PVC), high density polyethylene (HDPE) pipe, fiberglass, stainless steel, or other nonporous corrosion resistant material of suitable dimensions to: convey projected amounts of gases; withstand installation, static, and settlement forces; and withstand planned overburden or traffic loads. The collection system shall extend as necessary to comply with emission and migration standards. Collection devices such as wells and horizontal collectors shall be perforated to allow gas entry without head loss sufficient to impair performance across the intended extent of control. Perforations shall be situated with regard to the need to prevent excessive air infiltration.~~
- ~~2. Vertical wells shall be placed so as not to endanger underlying liners and shall address the occurrence of water within the landfill. Holes and trenches constructed for piped wells and horizontal collectors shall be of sufficient cross-section so as to allow for their proper construction and completion including, for example, centering of pipes and placement of gravel backfill. Collection devices shall be designed so as not to allow indirect short circuiting of air into the cover or refuse into the collection system or gas into the air. Any gravel used around pipe perforations should be of a dimension so as not to penetrate or block perforations.~~
- ~~3. Collection devices may be connected to the collection header pipes below or above the landfill surface. The connector assembly shall include a positive closing throttle valve, any necessary~~

~~seals and couplings, access couplings and at least one sampling port. The collection devices shall be constructed of PVC, HDPE, fiberglass, stainless steel, or other nonporous material of suitable thickness.~~

~~(c) Each owner or operator seeking to comply with § 60.752(b)(2)(i)(A) shall convey the landfill gas to a control system in compliance with § 60.752(b)(2)(iii) through the collection header pipe(s). The gas mover equipment shall be sized to handle the maximum gas generation flow rate expected over the intended use period of the gas moving equipment using the following procedures:~~

~~1. For existing collection systems, the flow data shall be used to project the maximum flow rate. If no flow data exists, the procedures in paragraph (c)(2) of this section shall be used.~~

~~2. For new collection systems, the maximum flow rate shall be in accordance with § 60.755(a)(1).~~

Authority: T.C.A. §§ 4-5-201 et seq. and 68-201-101 et seq.

I certify that the information included in this filing is an accurate and complete representation of the intent and scope of rulemaking proposed by the agency.

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Name of Officer: Michelle W. Owenby

Title of Officer: Director, Tennessee Division of Air Pollution Control

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Filed with the Department of State on: \_\_\_\_\_

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Tre Hargett  
Secretary of State