

PUBLIC NOTICE

Tennessee Valley Authority (TVA) has applied to the Tennessee Department of Environment and Conservation, Division of Air Pollution Control for a significant modification to an existing major source operating permit subject to the provisions of paragraph 1200-03-09-.02(11) of the Tennessee Air Pollution Control Regulations. A major source operating permit is required by both the Federal Clean Air Act and the Tennessee Air Pollution Control Regulations. TVA seeks to obtain a significant modification to a major source operating permit for the addition of a permitted emissions source to the Title V permit. The existing Title V operating permit subject to the modification is identified as follows: Division identification number 43-0011/561210. The emission source affected by the modification is identified as follows: 43-0011-01 through -10/ Coal Fired Boilers. This significant modification is conducted pursuant to subpart 1200-03-09-.02(11)(f)5(iv) of the Tennessee Air Pollution Control Regulations. Only the portion of the Title V permit affected by the significant modification is open to comment during the notice period.

EPA has agreed to treat this draft Part 70 permit as a proposed Part 70 permit and to perform its 45-day review provided by the law concurrently with the public notice period. If any substantive comments are received, EPA's 45-day review period will cease to be performed concurrently with the public notice period. EPA's 45-day review period will start once the public notice period has been completed and EPA receives notification from the Tennessee Air Pollution Control Division that comments have been received and resolved. Whether EPA's 45-day review period is performed concurrently with the public comment period or after the public comment period has ended, the deadline for citizen's petitions to the EPA Administrator will be determined as if EPA's 45-day review period is performed after the public comment period has ended (*i.e.*, sequentially). The status regarding EPA's 45-day review of these permits and the deadline for submitting a citizen's petition can be found at the following website address:

<https://www.epa.gov/caa-permitting/tennessee-proposed-title-v-permits>

Copies of the draft permits and the application materials used by the TAPCD are available for public inspection during normal business hours at the following locations:

Humphreys County Public Library
201 Pavo Avenue
Waverly, TN 37185

and

Tennessee Department of Environment and Conservation
Division of Air Pollution Control
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 15th Floor
Nashville, TN 37243

Electronic copies of the draft permits are available by accessing the TDEC internet site located at:

<http://tn.gov/environment/topic/ppo-air>

Interested parties are invited to review these materials and comment. In addition, a public hearing may be requested at which written or oral presentations may be made. To be considered, written comments or requests for a public hearing must be made within thirty (30) days of the date of this notice and should be addressed to **Ms. Michelle W. Owenby, Director, Division of Air Pollution Control, William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue 15th Floor, Nashville, Tennessee 37243**. Questions concerning the source(s) may be addressed to Mr. Joshua Bartlett at the same address or by calling (615) 532-6813. A final determination will be made after weighing all relevant comments.

Individuals with disabilities who wish to review information maintained at the above-mentioned depositories should contact the Tennessee Department of Environment and Conservation to discuss any auxiliary aids or services needed to facilitate such review. Such contact may be in person, by writing, telephone, or other means, and should be made no less than ten days prior to the end of the public comment period to allow time to provide such aid or services. Contact the Tennessee Department of Environment and Conservation ADA Coordinator, William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue 2nd Floor, Nashville, TN 37243, 1-(866)-253-5827. Hearing impaired callers may use the Tennessee Relay Service, 1-(800)-848-0298.

For the Humphreys County "News Democrat" – publish once during the time period of September 26, 2016, through September 30, 2016.

Air Pollution Control DATE: SEPTEMBER 08, 2016
Assigned to – Joshua Bartlett

No alterations to the above are allowed:

Tennessee Valley Authority must pay to place this advertisement in the newspaper

Air Pollution Control must be furnished with an affidavit from the newspaper stating that the ad was run and the date of the ad or one complete sheet from the newspaper showing this advertisement, the name of the newspaper and the date of publication. Mail to Joshua Bartlett, Division of Air Pollution Control, William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue 15th Floor, Nashville, Tennessee 37243.

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



**SIGNIFICANT MODIFICATION #1 TO
OPERATING PERMIT (TITLE V) Issued Pursuant to Tennessee Air Quality Act**

This permit fulfills the requirements of Title V of the Federal Clean Air Act (42 U.S.C. 7661a-7661e) and the federal regulations promulgated thereunder at 40 CFR Part 70. (FR Vol. 57, No. 140, Tuesday, July 21, 1992 p.32295-32312). This permit is issued in accordance with the provisions of paragraph 1200-3-9-.02(11) of the Tennessee Air Pollution Control Regulations. The permittee has been granted permission to operate an air contaminant source in accordance with emissions limitations and monitoring requirements set forth herein.

Issue Date: **December 5, 2012**

Permit Number: **561210**

Modification Date: **DRAFT**

Expiration Date: **December 4, 2017**

Issued To:
**Tennessee Valley Authority
Johnsonville Fossil Plant**

Installation Address:
**Highway 70
New Johnsonville**

Installation Description:

Coal Fired Steam Electric Generating Plant:

01-10: (10) Coal Fired Boilers

11-26: Combustion Turbine Plant – 16 Units (no. 2 fuel oil or natural gas fired)

28: (2) Auxiliary Heating Boilers (no. 2 fuel oil fired)

29: Coal Handling Operation

30: Ash Handling System

32: Combustion Turbine Plant – 4 Units (no. 2 fuel oil or natural gas fired)

33: (2) Gas Fired Heaters

34: Three Emergency Fire Pump Engines # 1, 2, and 3

36: Emergency Diesel Telecom Generator Engine

Emission Source Reference No.: **43-0011**

Renewal Application Due Date: **Between March 10, 2017 and June 8, 2017**

Primary SIC: **49**

Information Relied Upon:

Renewal Application dated August 24, 2007. Minor Modification application dated July 29, 2015. Significant Modification application dated May 28, 2014. May 20, 2014 Consent Decree and Federal Facilities Compliance Agreement.

(continued on the next page)

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 OR FILE AT INSTALLATION ADDRESS

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ATTACHMENT 2	AP-42 Emission Factors for Fuel Oil and Natural Gas Combustion	8 pages
ATTACHMENT 3	Acid Rain Permit for TVA - Johnsonville Fossil Plant	30 pages
ATTACHMENT 4	Emission Factors and Calculation of Particulate Emissions from Ash Handling Process (43-0011-30)	9 pages
ATTACHMENT 5	Emission Factors and Calculation of Particulate Emissions from Coal Handling Facility (43-0011-29)	12 pages
ATTACHMENT 6	AP-42 Emission Factors for Coal and Wood Combustion and Natural Gas and Fuel Oil Combustion in Turbines	10 pages
ATTACHMENT 7	EPA Letter dated April 6, 2000 – Combustion Turbines	6 pages
ATTACHMENT 8	Non-applicable Requirements	90 pages
ATTACHMENT 9	Compliance Assurance Monitoring Protocol	7 Pages
ATTACHMENT 10	CAIR (Clean Air Interstate Rule) Permit	7 Pages

SECTION A

GENERAL PERMIT CONDITIONS

A permit issued under the provisions of paragraph 1200-03-09-.02(11) is a permit issued pursuant to the requirements of Title V of the Federal Act and its implementing Federal regulations promulgated at 40 CFR, Part 70.

- A1. Definitions.** Terms not otherwise defined in the permit shall have the meaning assigned to such terms in the referenced regulation.

TAPCR 1200-03

- A2. Compliance requirement.** All terms and conditions in a permit issued pursuant to paragraph 1200-03-09-.02(11) including any provisions designed to limit a source's potential to emit, are enforceable by the Administrator and citizens under the Federal Act. The permittee shall comply with all conditions of its permit. Except for requirements specifically designated herein as not being federally enforceable (State Only), non-compliance with the permit requirements is a violation of the Federal Act and the Tennessee Air Quality Act and is grounds for enforcement action; for a permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. Non-compliance with permit conditions specifically designated herein as not being federally enforceable (State Only) is a violation of the Tennessee Air Quality Act and may be grounds for these actions.

TAPCR 1200-03-09-.02(11)(e)2(i) and 1200-03-09-.02(11)(e)1(vi)(I)

- A3. Need to halt or reduce activity.** The need to halt or reduce activity is not a defense for noncompliance. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit. However, nothing in this item shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in assessing penalties for noncompliance if the health, safety or environmental impacts of halting or reducing operations would be more serious than the impacts of continuing operations.

TAPCR 1200-03-09-.02(11)(e)1(vi)(II)

- A4. The permit.** The permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

TAPCR 1200-03-09-.02(11)(e)1(vi)(III)

- A5. Property rights.** The permit does not convey any property rights of any sort, or any exclusive privilege.

TAPCR 1200-03-09-.02(11)(e)1(vi)(IV)

- A6. Submittal of requested information.** The permittee shall furnish to the Technical Secretary, within a reasonable time, any information that the Technical Secretary may request in writing to determine whether cause exists for modifying, revoking and reissuing, or termination of the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Technical Secretary copies of records required to be kept by the permit. If the permittee claims that such information is confidential, the Technical Secretary may review that claim and hold the information in protected status until such time that the Board can hear any contested proceedings regarding confidentiality disputes. If the information is desired by EPA, the permittee may mail the information directly to EPA. Any claims of confidentiality for federal purposes will be determined by EPA.

TAPCR 1200-03-09-.02(11)(e)1(vi)(V)

- A7. Severability clause.** The requirements of this permit are severable. A dispute regarding one or more requirements of this permit does not invalidate or otherwise excuse the permittee from their duty to comply with the remaining portion of the permit.

TAPCR 1200-03-09.02(11)(e)1(v)

A8. Fee payment.

(a) The permittee shall pay an annual major source emission fee based upon the responsible official's choice of actual emissions or allowable emissions. An emission cap of 4,000 tons per year per regulated pollutant per major source SIC Code shall apply to actual or allowable based emission fees. A major source annual emission fee will not be charged for emissions in excess of the cap (s) or for carbon monoxide.

(b) Major sources who have filed a timely, complete operating permit application in accordance with 1200-03-09-.02(11), shall pay allowable emission based fees until the beginning of the next annual accounting period following receipt of their major source operating permit. At that time, the permittee shall begin paying their annual emission fee based upon their choice of actual or allowable based fees, or mixed actual and allowable based fees as stated under SECTION E of this permit. Once permitted, altering the existing choice shall be accomplished by a written request of the major source, filed in the office of the Technical Secretary at least one hundred eighty days prior to the expiration or reissuance of the major source operating permit.

(c) Major sources must conform to the following requirements with respect to fee payments:

1. If a major source choosing an allowable based annual emission fee wishes to restructure its allowable emissions for the purposes of lowering its annual emission fees, a mutually agreed upon, more restrictive regulatory requirement may be established to minimize the allowable emissions and thus the annual emission fee. The more restrictive requirement must be specified on the permit, and must include the method used to determine compliance with the limitation. The documentation procedure to be followed by the major source must also be included to insure that the limit is not exceeded. Restructuring the allowable emissions is permissible only in the annual accounting periods of eligibility and only, if the written request for restructuring is filed with the Technical Secretary at least 120 days prior to the beginning of the annual accounting period of eligibility. These periods of eligibility occur upon expiration of the initial major source operating permit, renewal of an expired major source operating permit or reissuance of a major source operating permit.

2. Beginning with the annual accounting period beginning July 1, 2004 to June 30, 2005, major sources paying on allowable based emission fees will be billed by the Division no later than April 1 prior to the end of the accounting period. The major source annual emission fee is due July 1 following the end of the accounting period.

3. Beginning with the annual accounting period beginning July 1, 2004 to June 30, 2005, major sources choosing an actual based annual emission fee shall file an actual emissions analysis with the Technical Secretary which summarizes the actual emissions of all regulated pollutants at the air contaminant sources of their facility. Based upon the actual emissions analysis, the source shall calculate the fee due and submit the payment and the analysis each July 1st following the end of the annual accounting period.

4. Beginning with the annual accounting period beginning July 1, 2004 to June 30, 2005, major sources choosing a mixture of allowable and actual based emission fees shall file an actual emissions and allowable emissions analysis with the Technical Secretary which summarizes the actual and allowable emissions of all regulated pollutants at the air contaminant sources of their facility. Based upon the analysis, the source shall calculate the fee due and submit the payment and the analysis each July 1st following the end of the annual accounting period.

The mixed based fee shall be calculated utilizing the 4,000 ton cap specified in subparagraph 1200-03-26-.02(2)(i). In determining the tonnages to be applied toward the regulated pollutant 4,000 ton cap in a mixed based fee, the source shall first calculate the actual emission based fees for a regulated pollutant and apply that tonnage toward the regulated pollutant's cap. The remaining tonnage available in the 4,000 ton category of a regulated pollutant shall be subject to allowable emission based fee calculations for the sources that were not included in the actual emission based fee calculations. Once the 4,000 ton cap has been reached for a regulated pollutant, no additional fee shall be required.

5. Major sources choosing to pay their major source annual emission fee based on actual based emissions or a mixture of allowable and actual based emissions may request an extension of time to file their emissions analysis with the Technical Secretary. The extension may be granted by the Technical Secretary up to ninety (90) days. The request for extension must be postmarked no later than July 1 or the request for extension shall be denied. The request for extension to file must state the reason and give an adequate explanation.

An estimated annual emission fee payment of no less than eighty percent (80%) of the fee due July 1 must accompany the request for extension to avoid penalties and interest on the underpayment of the annual emission fee. A remaining balance due must accompany the emission analysis. If there has been an overpayment, a refund may be requested in writing to the Division or be applied as a credit toward next year's major source annual emission fee. The request for extension of time is not available to major sources choosing to pay their major source annual emission fee based on allowable emissions.

6. Newly constructed major sources or minor existing sources modifying their operations such that they become a major source in the midst of the standard July 1st to June 30th annual accounting period, shall pay allowable based annual emission fees for the fractional remainder of the annual accounting period commencing upon their start-up. At the beginning of the next annual accounting period, the "responsible official" of the source may choose to pay annual emission fees based on actual or allowable emissions or a mixture of the two as provided for in this rule 1200-03-26-.02.

(d) Where more than one (1) allowable emission limit is applicable to a regulated pollutant, the allowable emissions for the regulated pollutants shall not be double counted. Major sources subject to the provisions of paragraph 1200-03-26-.02(9) shall apportion their emissions as follows to ensure that their fees are not double counted.

1. Sources that are subject to federally promulgated hazardous air pollutant standards that can be imposed under Chapter 1200-03-11 or Chapter 1200-03-31 will place such regulated emissions in the specific hazardous air pollutant under regulation. If the pollutant is also in the family of volatile organic compounds or the family of particulates, the pollutant shall not be placed in that respective family category.

2. A miscellaneous category of hazardous air pollutants shall be used for hazardous air pollutants listed at part 1200-03-26-.02(2)(i)12 that do not have an allowable emission standard. A pollutant placed in this category shall not be subject to being placed in any other category such as volatile organic compounds or particulates.

3. Each individual hazardous air pollutant and the miscellaneous category of hazardous air pollutants is subject to the 4,000 ton cap provisions of subparagraph 1200-03-26-.02(2)(i).

4. Major sources that wish to pay annual emission fees for PM₁₀ on an allowable emission basis may do so if they have a specific PM₁₀ allowable emission standard. If a major source has a total particulate emission standard, but wishes to pay annual emission fees on an actual PM₁₀ emission basis, it may do so if the PM₁₀ actual emission levels are proven to the satisfaction of the Technical Secretary. The method to demonstrate the actual PM₁₀ emission levels must be made as part of the source's major source operating permit in advance in order to exercise this option. The PM₁₀ emissions reported under these options shall not be subject to fees under the family of particulate emissions. The 4,000 ton cap provisions of subparagraph 1200-03-26-.02(2)(i) shall also apply to PM₁₀ emissions.

TAPCR 1200-03-26-.02 (3) and (9) and 1200-03-09-.02(11)(e)1(vii)

A9. Permit revision not required. A permit revision will not be required under any approved economic incentives, marketable permits, emissions trading and other similar programs or process for changes that are provided for in the permit.

TAPCR 1200-03-09-.02(11)(e)1(viii)

A10. Inspection and entry. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Technical Secretary or his authorized representative to perform the following for the purposes of determining compliance with the permit applicable requirements:

(a) Enter upon, at reasonable times, the permittee's premises where a source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;

(b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;

(c) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and

(d) As authorized by the Clean Air Act and Chapter 1200-03-10 of TAPCR, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit or applicable requirements.

(e) "Reasonable times" shall be considered to be customary business hours unless reasonable cause exists to suspect noncompliance with the Act, Division 1200-03 or any permit issued pursuant thereto and the Technical Secretary specifically authorizes an inspector to inspect a facility at any other time.

TAPCR 1200-03-09-.02(11)(e)3.(ii)

A11. Permit shield.

(a) Compliance with the conditions of this permit shall be deemed compliance with all applicable requirements as of the date of permit issuance, provided that:

1. Such applicable requirements are included and are specifically identified in the permit; or

2. The Technical Secretary, has, in acting on the permit application of August 24, 2007 and any revision thereto, determined that certain requirements specifically identified and listed in attachment 8 hereto are not applicable to the source. Notwithstanding any part of Attachment 8 that could be construed to the contrary, the Technical Secretary has not determined whether past maintenance projects at this source were major modifications subject to major source permitting requirements under federal or state new source review regulatory provisions.

- (b) Nothing in this permit shall alter or affect the following:
 1. The provisions of section 303 of the Federal Act (emergency orders), including the authority of the Administrator under that section. Similarly, the provisions of T.C.A. §68-201-109 (emergency orders) including the authority of the Governor under the section;
 2. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;
 3. The applicable requirements of the acid rain program, consistent with section 408(a) of the Federal Act; or
 4. The ability of EPA to obtain information from a source pursuant to section 114 of the Federal Act.
- (c) Permit shield is granted to the permittee.

TAPCR 1200-03-09-.02(11)(e)6

A12. Permit renewal and expiration.

- (a) Permit expiration terminates the source's right to operate unless a timely and complete renewal application has been submitted at least 180 days, but no more than 270 days prior to the expiration of this permit.
- (b) Provided that the permittee submits a timely and complete application for permit renewal the source will not be considered in violation of paragraph 1200-03-09-.02(11) until the Technical Secretary takes final action on the permit application, except as otherwise noted in paragraph 1200-03-09-.02(11).
- (c) This permit, its shield provided in Condition A11, and its conditions will be extended and effective after its expiration date provided that the source has submitted a timely, complete renewal application to the Technical Secretary.

TAPCR 1200-03-09-.02(11)(f)3 and 2, 1200-03-09-.02(11)(d)1(i)(III), and 1200-03-09-.02(11)(a)2

A13. Reopening for cause.

- (a) A permit shall be reopened and revised prior to the expiration of the permit under any of the circumstances listed below:
 1. Additional applicable requirements under the Federal Act become applicable to the sources contained in this permit provided the permit has a remaining term of 3 or more years. Such a reopening shall be completed not later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the permit expiration date of this permit, unless the original has been extended pursuant to 1200-03-09-.02(11)(a)2.
 2. Additional requirements become applicable to an affected source under the acid rain program.
 3. The Technical Secretary or EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.
 4. The Technical Secretary or EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements.
- (b) Proceedings to reopen and issue a permit shall follow the same proceedings as apply to initial permit issuance and shall affect only those parts of the permit for which cause to reopen exists, and not the entire permit. Such reopening shall be made as expeditiously as practicable.
- (c) Reopenings for cause shall not be initiated before a notice of such intent is provided to the permittee by the Technical Secretary at least 30 days in advance of the date that the permit is to be reopened except that the Technical Secretary may provide a shorter time period in the case of an emergency. An emergency shall be established by the criteria of T.C.A. 68-201-109 or other compelling reasons that public welfare is being adversely affected by the operation of a source that is in compliance with its permit requirements.
- (d) If the Administrator finds that cause exists to terminate, modify, or revoke and reissue a permit as identified in A13, he is required under federal rules to notify the Technical Secretary and the permittee of such findings in writing. Upon receipt of such notification, the Technical Secretary shall investigate the matter in order to determine if he agrees or disagrees with the Administrator's findings. If he agrees with the Administrator's findings, the Technical Secretary shall conduct the reopening in the following manner:
 1. The Technical Secretary shall, within 90 days after receipt of such notification, forward to EPA a proposed determination of termination, modification, or revocation and reissuance, as appropriate. If the Administrator grants additional time to secure permit applications or additional information from the permittee, the Technical Secretary shall have the additional time period added to the standard 90 day time period.
 2. EPA will evaluate the Technical Secretary's proposed revisions and respond as to their evaluation.
 3. If EPA agrees with the proposed revisions, the Technical Secretary shall proceed with the reopening in the same manner prescribed under Condition A13 (b) and Condition A13 (c).

4. If the Technical Secretary disagrees with either the findings or the Administrator that a permit should be reopened or an objection of the Administrator to a proposed revision to a permit submitted pursuant to Condition A13(d), he shall bring the matter to the Board at its next regularly scheduled meeting for instructions as to how he should proceed. The permittee shall be required to file a written brief expressing their position relative to the Administrator's objection and have a responsible official present at the meeting to answer questions for the Board. If the Board agrees that EPA is wrong in their demand for a permit revision, they shall instruct the Technical Secretary to conform to EPA's demand, but to issue the permit under protest preserving all rights available for litigation against EPA.

TAPCR 1200-03-09-.02(11)(f)6 and 7.

A14. Permit transference. An administrative permit amendment allows for a change of ownership or operational control of a source where the Technical Secretary determines that no other change in the permit is necessary, provided that the following requirements are met:

- (a) Transfer of ownership permit application is filed consistent with the provisions of 1200-03-09-.03(6), and
- (b) Written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to the Technical Secretary.

TAPCR 1200-03-09-.02(11)(f)4(i)(IV) and 1200-03-09-.03(6)

A15. Air pollution alert. When the Technical Secretary has declared that an air pollution alert, an air pollution warning, or an air pollution emergency exists, the permittee must follow the requirements for that episode level as outlined in TAPCR 1200-03-09-.03(1) and TAPCR 1200-03-15-.03.

A16. Construction permit required. Except as exempted in TAPCR 1200-03-09-.04, or excluded in subparagraph TAPCR 1200-03-02-.01(1)(aa) or subparagraph TAPCR 1200-03-02-.01(1)(cc), this facility shall not begin the construction of a new air contaminant source or the modification of an air contaminant source which may result in the discharge of air contaminants without first having applied for and received from the Technical Secretary a construction permit for the construction or modification of such air contaminant source.

TAPCR 1200-03-09-.01(1)(a)

A17. Notification of changes. The permittee shall notify the Technical Secretary 30 days prior to commencement of any of the following changes to an air contaminant source which would not be a modification requiring a construction permit.

- (a) change in air pollution control equipment
- (b) change in stack height or diameter
- (c) change in exit velocity of more than 25 percent or exit temperature of more than 15 percent based on absolute temperature.

TAPCR 1200-03-09-.02(7)

A18. Schedule of compliance. The permittee will comply with any applicable requirement that becomes effective during the permit term on a timely basis. If the permittee is not in compliance, the permittee must submit a schedule for coming into compliance, which must include a schedule of remedial measure(s), including an enforceable set of deadlines for specific actions.

TAPCR 1200-03-09-.02(11)(d)3 and 40 CFR Part 70.5(c)

A19. Acid rain program

- (a). The permittee shall not produce emissions in excess of allowances held under Title IV of the Federal Clean Air Act and the regulations promulgated thereunder and TAPCR 1200-3-30.
- (b). The permittee shall not be subject to the permit revision requirements of TAPCR 1200-3-9-.02(11)(f) for increases in emissions that are authorized by allowances acquired pursuant to the acid rain program, provided that such increases do not require a permit revision under any other applicable requirement.
- (c). Where an applicable requirement of the Federal Act is more stringent than the Federal regulations promulgated under Title IV of the Federal Act, both provisions shall be incorporated into the permit and shall be enforceable by the administrator.

- (d). No limit shall be placed on the number of allowances held by this source under the acid rain program. The permittee may not use allowances as a defense for noncompliance with any other applicable requirement.
- (e). Any allowance shall be accounted for according to the regulations promulgated under Title IV of the Federal Clean Air Act and the provisions of TAPCR 1200-3-30.

TAPCR 1200-3-9-.02(11)(e)1(iv)

A20. Title VI.

(a) The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR, Part 82, Subpart F, except as provided for motor vehicle air conditioners (MVACs) in Subpart B:

1. Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to Section 82.156.
2. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to Section 82.158.
3. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to Section 82.161.

(b) If the permittee performs a service on motor (fleet) vehicles when this service involves ozone depleting substance refrigerant in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 CFR, Part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners.

(c) The permittee shall be allowed to switch from any ozone-depleting substance to any alternative that is listed in the Significant New Alternatives Program (SNAP) promulgated pursuant to 40 CFR, Part 82, Subpart G, Significant New Alternatives Policy Program.

A21. 112 (r). The permittee shall comply with the requirement to submit to the Administrator or designated State Agency a risk management plan, including a registration that reflects all covered processes, by June 21, 1999, if the permittee's facility is required pursuant to 40 CFR 68 to submit such a plan.

TAPCR 1200-03-32-.03(3)

SECTION B

GENERAL CONDITIONS for MONITORING, REPORTING, and ENFORCEMENT

B1. Recordkeeping. Monitoring and related record keeping shall be performed in accordance with the requirements specified in the permit conditions for each individual permit unit. In no case shall reports of any required monitoring and record keeping be submitted less frequently than every six months.

(a) Where applicable, records of required monitoring information include the following:

1. The date, place as defined in the permit, and time of sampling or measurements;
2. The date(s) analyses were performed;
3. The company or entity that performed the analysis;
4. The analytical techniques or methods used;
5. The results of such analyses; and
6. The operating conditions as existing at the time of sampling or measurement.

(b) Digital data accumulation which utilizes valid data compression techniques shall be acceptable for compliance determination as long as such compression does not violate an applicable requirement and its use has been approved in advance by the Technical Secretary.

TAPCR 1200-03-09-.02(11)(e)1(iii)

B2. Retention of monitoring data. The permittee shall retain records of all required monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

TAPCR 1200-03-09-.02(11)(e)1(iii)(II)II

B3. Reporting. Reports of any required monitoring and record keeping shall be submitted to the Technical Secretary in accordance with the frequencies specified in the permit conditions for each individual permit unit. Reporting periods will be dated from the end of the first complete calendar quarter following issuance of this permit unless otherwise noted. Reports shall be submitted within 60 days of the close of the reporting period unless otherwise noted. All instances of deviations from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official. Reports required under "State only requirements" are not required to be certified by a responsible official.

TAPCR 1200-03-09-.02(11)(e)1(iii)

B4. Certification. Except for reports required under "State Only" requirements, any application form, report or compliance certification submitted pursuant to the requirements of this permit shall contain certification by a responsible official of truth, accuracy and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.

TAPCR 1200-03-09-.02(11)(d)4

B5 (MM1). Annual compliance certification. The permittee shall submit annually compliance certifications with terms and conditions contained in Sections A, B, D and E of this permit, including emission limitations, standards, or work practices. This compliance certification shall include all of the following (provided that the identification of applicable information may cross-reference the permit or previous reports, as applicable):

(a) The identification of each term or condition of the permit that is the basis of the certification;

(b) The identification of the method(s) or other means used by the owner or operator for determining the compliance status with each term and condition during the certification period. Such methods and other means shall include, at a minimum, the methods and means required by this permit. If necessary, the owner or operator also shall identify any

other material information that must be included in the certification to comply with section 113(c)(2) of the Federal Act, which prohibits knowingly making a false certification or omitting material information.

(c) Reserved.

(d) The status of compliance with the terms and conditions of the permit for the period covered by the certification, including whether compliance was continuous or intermittent. The certification shall be based on the method or means designated in B5(b) above. The certification shall identify each deviation and take it into account in the compliance certification. The certification shall also identify as possible exceptions to compliance any periods during which compliance is required and in which an excursion* or exceedance** as defined below occurred; and

(e) Such other facts as the Technical Secretary may require to determine the compliance status of the source.

* "Excursion" shall mean a departure from an indicator range established for monitoring under this paragraph, consistent with any averaging period specified for averaging the results of the monitoring.

** "Exceedance" shall mean a condition that is detected by monitoring that provides data in terms of an emission limitation or standard and that indicates that emissions (or opacity) are greater than the applicable emission limitation or standard (or less than the applicable standard in the case of a percent reduction requirement) consistent with any averaging period specified for averaging the results of the monitoring.

40 CFR Part 70.6(c)(5)(iii) as amended in the Federal Register Vol.62, No.204, October 22, 1997, pages 54946 and 54947

B6. Submission of compliance certification. The compliance certification shall be submitted to:

Division of Air Pollution Control
Nashville Environmental Field Office
711 R.S. Gass Blvd.
Nashville, Tennessee 37216

and Air and EPCRA Enforcement Branch
US EPA Region IV
61 Forsyth Street, SW
Atlanta, Georgia 30303

TAPCR 1200-03-09-.02(11)(e)3(v)(IV)

B7. Emergency provisions. An emergency constitutes an affirmative defense to an enforcement action brought against this source for noncompliance with a technology based emission limitation due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

(a) The affirmative defense of the emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An emergency occurred and that the permittee can identify the probable cause(s) of the emergency. "Probable" must be supported by a credible investigation into the incident that seeks to identify the causes and results in an explanation supported by generally accepted engineering or scientific principles.

2. The permitted source was at the time being properly operated. In determining whether or not a source was being properly operated, the Technical Secretary shall examine the source's written standard operating procedures which were in effect at the time of the noncompliance and any other code as detailed below that would be relevant to preventing the noncompliance. Adherence to the source's standard operating procedures will be the test of adequate preventative maintenance, careless operation, improper operation or operator error to the extent that such adherence would prevent noncompliance. The source's failure to follow recognized standards of practice to the extent that adherence to such a standard would have prevented noncompliance will disqualify the source from any claim of an emergency and an affirmative defense.

3. During the period of the emergency, the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit.

4. The permittee submitted notice of the emergency to the Technical Secretary according to the notification criteria for malfunctions in rule 1200-03-20-.03. For the purposes of this condition, "emergency" shall be substituted for "malfunction(s)" in rule 1200-03-20-.03 to determine the relevant notification threshold. The notice shall include a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

(b) In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.

(c) The provisions of this condition are in addition to any emergency, malfunction or upset requirement contained in Division 1200-03 or other applicable requirement.

TAPCR 1200-03-09-.02(11)(e)7

B8. Excess emissions reporting.

(a) The permittee shall promptly notify the Technical Secretary when any emission source, air pollution control equipment, or related facility breaks down in such a manner to cause the emission of air contaminants in excess of the applicable emission standards contained in Division 1200-03 or any permit issued thereto, or of sufficient duration to cause damage to property or public health. The permittee must provide the Technical Secretary with a statement giving all pertinent facts, including the estimated duration of the breakdown. Violations of the visible emission standard which occur for less than 20 minutes in one day (midnight to midnight) need not be reported. Prompt notification will be within 24 hours of the malfunction and shall be provided by telephone to the Division's Nashville office. The Technical Secretary shall be notified when the condition causing the failure or breakdown has been corrected. In attainment and unclassified areas if emissions other than from sources designated as significantly impacting on a nonattainment area in excess of the standards will not and do not occur over more than a 24-hour period (or will not recur over more than a 24-hour period) and no damage to property and or public health is anticipated, notification is not required.

(b) Any malfunction that creates an imminent hazard to health must be reported by telephone immediately to the Division's Nashville office and to the State Civil Defense.

(c) A log of all malfunctions, startups, and shutdowns resulting in emissions in excess of the standards in Division 1200-03 or any permit issued thereto must be kept at the plant. All information shall be entered in the log no later than twenty-four (24) hours after the startup or shutdown is complete, or the malfunction has ceased or has been corrected. Any later discovered corrections can be added in the log as footnotes with the reason given for the change. This log must record at least the following:

1. Stack or emission point involved
2. Time malfunction, startup, or shutdown began and/or when first noticed
3. Type of malfunction and/or reason for shutdown
4. Time startup or shutdown was complete or time the air contaminant source returned to normal operation.
5. The company employee making entry on the log must sign, date, and indicate the time of each log entry. The information under items 1. and 2. must be entered into the log by the end of the shift during which the malfunction or startup began. For any source utilizing continuous emission(s) monitoring, continuous emission(s) monitoring collection satisfies the above log keeping requirement.

TAPCR 1200-03-20-.03 and .04

B9. Malfunctions, startups and shutdowns - reasonable measures required. The permittee must take all reasonable measures to keep emissions to a minimum during startups, shutdowns, and malfunctions. These measures may include installation and use of alternate control systems, changes in operating methods or procedures, cessation of operation until the process equipment and/or air pollution control equipment is repaired, maintaining sufficient spare parts, use of overtime labor, use of outside consultants and contractors, and other appropriate means. Failures that are caused by poor maintenance, careless operation or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions. This provision does not apply to standards found in 40 CFR, Parts 60 (Standards of performance for new stationary sources), 61 (National emission standards for hazardous air pollutants) and 63 (National emission standards for hazardous air pollutants for source categories).

TAPCR 1200-03-20-.02

B10 (MM1). Reserved – MM1 deletes this requirement.

B11. Report required upon the issuance of a notice of violation for excess emissions. The permittee must submit within twenty (20) days after receipt of the notice of violation, the data shown below to assist the Technical Secretary in deciding whether to excuse or validate the violation. If this data has previously been available to the Technical Secretary prior to the issuance of the notice of violation no further action is required of the violating source. However, if the source desires to submit additional information, then this must be submitted within the same twenty (20) day time period. The minimum data requirements are:

- (a) The identity of the stack and/or other emission point where the excess emission(s) occurred;
- (b) The magnitude of the excess emissions expressed in pounds per hour and the units of the applicable emission limitation and the operating data and calculations used in determining the magnitude of the excess emissions;
- (c) The time and duration of the emissions;
- (d) The nature and cause of such emissions;
- (e) For malfunctions, the steps taken to correct the situation and the action taken or planned to prevent the recurrence of such malfunctions;
- (f) The steps taken to limit the excess emissions during the occurrence reported, and
- (g) If applicable, documentation that the air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good operating practices for minimizing emissions.

Failure to submit the required report within the twenty (20) day period specified shall preclude the admissibility of the data for consideration of excusal for malfunctions.

TAPCR 1200-03-20-.06(2), (3) and (4)

SECTION C

PERMIT CHANGES

C1. Operational flexibility changes. The source may make operational flexibility changes that are not addressed or prohibited by the permit without a permit revision subject to the following requirements:

- (a) The change cannot be subject to a requirement of Title IV of the Federal Act or Chapter 1200-03-30.
- (b) The change cannot be a modification under any provision of Title I of the federal Act or Division 1200-03.
- (c) Each change shall meet all applicable requirements and shall not violate any existing permit term or condition.
- (d) The source must provide contemporaneous written notice to the Technical Secretary and EPA of each such change, except for changes that are below the threshold of levels that are specified in Rule 1200-03-09-.04.
- (e) Each change shall be described in the notice including the date, any change in emissions, pollutants emitted, and any applicable requirements that would apply as a result of the change.
- (f) The change shall not qualify for a permit shield under the provisions of part 1200-03-09-.02(11)(e)6.
- (g) The permittee shall keep a record describing the changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from those changes. The records shall be retained until the changes are incorporated into subsequently issued permits.

TAPCR 1200-03-09-.02(11)(a)4 (ii)

C2. Section 502(b)(10) changes.

(a) The permittee can make certain changes without requiring a permit revision, if the changes are not modifications under Title I of the Federal Act or Division 1200-03 and the changes do not exceed the emissions allowable under the permit. The permittee must, however, provide the Administrator and Technical Secretary with written notification within a minimum of 7 days in advance of the proposed changes. The Technical Secretary may waive the 7 day advance notice in instances where the source demonstrates in writing that an emergency necessitates the change. Emergency shall be demonstrated by the criteria of TAPCR 1200-03-09-.02(11)(e)7 and in no way shall it include changes solely to take advantages of an unforeseen business opportunity. The Technical Secretary and EPA shall attach each such notice to their copy of the relevant permit.

- (b) The written notification must be signed by the facility Title V Responsible Official and include the following:
 1. a brief description of the change within the permitted facility;
 2. specifies the date on which the change will occur;
 3. declares and quantifies where possible any change in emissions;
 4. declares any permit term or condition that is no longer applicable as a result of the change; and
 5. declares the requested change is not a Title I modification and will not exceed allowable emissions under the permit.

- (c) The permit shield provisions of TAPCR 1200-03-09-.02(11)(e)6 shall not apply to Section 502(b)(10) changes.

TAPCR 1200-03-09-.02(11)(a)4(i)

C3. Administrative amendment.

(a) Administrative permit amendments to this permit shall be in accordance with 1200-03-09-.02(11)(f)4. The source may implement the changes addressed in the request for an administrative amendment immediately upon submittal of the request.

(b) The permit shield shall be extended as part of an administrative permit amendment revision consistent with the provisions of TAPCR 1200-03-09-.02(11)(e)6 for such revisions made pursuant to item (c) of this condition which meet the relevant requirements of TAPCR 1200-03-09-.02(11)(e), TAPCR 1200-03-09-.02(11)(f) and TAPCR 1200-03-09-.02(11)(g) for significant permit modifications.

(c) Proceedings to review and grant administrative permit amendments shall be limited to only those parts of the permit for which cause to amend exists, and not the entire permit.

TAPCR 1200-03-09-.02(11)(f)4

C4. Minor permit modifications.

(a) The permittee may submit an application for a minor permit modification in accordance with TAPCR 1200-03-09-.02(11)(f)5(ii).

(b) The permittee may make the change proposed in its minor permit modification immediately after an application is filed with the Technical Secretary.

(c) Proceedings to review and modify permits shall be limited to only those parts of the permit for which cause to modify exists, and not the entire permit.

(d) Minor permit modifications do not qualify for a permit shield.

TAPCR 1200-03-09-.02(11)(f)5(ii)

C5. Significant permit modifications.

(a) The permittee may submit an application for a significant modification in accordance with TAPCR 1200-03-09-.02(11)(f)5(iv).

(b) Proceedings to review and modify permits shall be limited to only those parts of the permit for which cause to modify exists, and not the entire permit.

TAPCR 1200-03-09-.02(11)(f)5(iv)

C6. New construction or modifications.

Future construction at this source that is subject to the provisions of TAPCR 1200-03-09-.01 shall be governed by the following:

(a) The permittee shall designate in their construction permit application the route that they desire to follow for the purposes of incorporating the newly constructed or modified sources into their existing operating permit. The Technical Secretary shall use that information to prepare the operating permit application submittal deadlines in their construction permit.

(b) Sources desiring the permit shield shall choose the administrative amendment route of TAPCR 1200-03-09-.02(11)(f)4 or the significant modification route of TAPCR 1200-03-09-.02(11)(f)5(iv).

(c) Sources desiring expediency instead of the permit shield shall choose the minor permit modification procedure route of TAPCR 1200-03-09-.02(11)(f)5(ii) or group processing of minor modifications under the provisions of TAPCR 1200-03-09-.02(11)(f)5(iii) as applicable to the magnitude of their construction.

TAPCR 1200-03-09-.02(11)(d) 1(i)(V)

SECTION D

GENERAL APPLICABLE REQUIREMENTS

- D1. Visible emissions.** With the exception of air emission sources exempt from the requirements of TAPCR Chapter 1200-03-05 and air emission sources for which a different opacity standard is specifically provided elsewhere in this permit, the permittee shall not cause, suffer, allow or permit discharge of a visible emission from any air contaminant source with an opacity in excess of twenty (20) percent for an aggregate of more than five (5) minutes in any one (1) hour or more than twenty (20) minutes in any twenty-four (24) hour period; provided, however, that for fuel burning installations with fuel burning equipment of input capacity greater than 600 million btu per hour, the permittee shall not cause, suffer, allow, or permit discharge of a visible emission from any fuel burning installation with an opacity in excess of twenty (20) percent (6-minute average) except for one six minute period per one (1) hour of not more than forty (40) percent opacity. Sources constructed or modified after July 7, 1992 shall utilize 6-minute averaging.

Consistent with the requirements of TAPCR Chapter 1200-03-20, due allowance may be made for visible emissions in excess of that permitted under TAPCR 1200-03-05 which are necessary or unavoidable due to routine startup and shutdown conditions. The facility shall maintain a continuous, current log of all excess visible emissions showing the time at which such conditions began and ended and that such record shall be available to the Technical Secretary or his representative upon his request.

The permittee will be issued a certificate of validation upon satisfactory completion of the requirements of TAPCR 1200-03-05-.05. The certificate will be effective upon issuance.

TAPCR 1200-03-05-.01(1), TAPCR 1200-03-05-.03(6), TAPCR 1200-03-05-.02(1) and TAPCR 1200-03-05-.05

- D2. General provisions and applicability for non-process gaseous emissions.** Any person constructing or otherwise establishing a non-portable air contaminant source emitting gaseous air contaminants after April 3, 1972, or relocating an air contaminant source more than 1.0 km from the previous position after November 6, 1988, shall install and utilize the best equipment and technology currently available for controlling such gaseous emissions.

TAPCR 1200-03-06-.03(2)

- D3. Non-process emission standards.** The permittee shall not cause, suffer, allow, or permit particulate emissions from non-process sources in excess of the standards in TAPCR 1200-03-06.

- D4. General provisions and applicability for process gaseous emissions.** Any person constructing or otherwise establishing an air contaminant source emitting gaseous air contaminants after April 3, 1972, or relocating an air contaminant source more than 1.0 km from the previous position after November 6, 1988, shall install and utilize equipment and technology which is deemed reasonable and proper by the Technical Secretary.

TAPCR 1200-03-07-.07(2)

- D5. Particulate emissions from process emission sources.** The permittee shall not cause, suffer, allow, or permit particulate emissions from process sources in excess of the standards in TAPCR 1200-03-07.

- D6. Sulfur dioxide emission standards.** The permittee shall not cause, suffer, allow, or permit Sulfur dioxide emissions from process and non-process sources in excess of the standards in TAPCR 1200-03-14. Regardless of the specific emission standard, new process sources shall utilize the best available control technology as deemed appropriate by the Technical Secretary of the Tennessee Air Pollution Control Board.

- D7. Fugitive Dust.**

(a) The permittee shall not cause, suffer, allow, or permit any materials to be handled, transported, or stored; or a building, its appurtenances, or a road to be used, constructed, altered, repaired, or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne. Such reasonable precautions shall include, but not be limited to, the following:

1. Use, where possible, of water or chemicals for control of dust in demolition of existing buildings or structures, construction operations, grading of roads, or the clearing of land;

2. Application of asphalt, oil, water, or suitable chemicals on dirt roads, material stock piles, and other surfaces which can create airborne dusts;

3. Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials. Adequate containment methods shall be employed during sandblasting or other similar operations.

(b) The permittee shall not cause, suffer, allow, or permit fugitive dust to be emitted in such manner to exceed five (5) minutes per hour or twenty (20) minutes per day as to produce a visible emission beyond the property line of the property on which the emission originates, excluding malfunction of equipment as provided in Chapter 1200-03-20.

TAPCR 1200-03-08

D8. Open burning. The permittee shall comply with the TAPCR 1200-03-04-.04 for all open burning activities at the facility.

TAPCR 1200-03-04

D9. Asbestos. Where applicable, the permittee shall comply with the requirements of 1200-03-11-.02(d) when conducting any renovation or demolition activities at the facility.

TAPCR 1200-03-11-.02(d) and 40 CFR, Part 61

D10. Annual certification of compliance. The generally applicable requirements set forth in Section D of this permit are intended to apply to activities and sources that are not subject to source-specific applicable requirements contained in State of Tennessee and U.S. EPA regulations. By annual certification of compliance, the permittee shall be considered to meet the monitoring and related record keeping and reporting requirements of TAPCR 1200-03-09-.02(11)(e)1.(iii) and 1200-03-10-.04(2)(b)1 and compliance requirements of TAPCR 1200-03-09-.02(11)(e)3.(i). The permittee shall submit compliance certification for these conditions annually.

SECTION E**SOURCE SPECIFIC EMISSION STANDARDS, OPERATING LIMITATIONS, and MONITORING, RECORDKEEPING and REPORTING REQUIREMENTS**

43-0011	Facility Description:	TVA Johnsonville is a steam electric generating facility with ten main steam producing coal-fired boilers, a combustion turbine plant, two auxiliary boilers, coal handling operations, and ash handling operations.
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Conditions E1 and E2 apply to all sources in Section E of this permit unless otherwise noted.

E1 (SM1). Fee payment: mixed (actual and allowable) emissions basis.

FEE EMISSIONS SUMMARY TABLE FOR MAJOR SOURCE 43-0011

REGULATED POLLUTANTS	ALLOWABLE EMISSIONS (tons per AAP)	ACTUAL EMISSIONS (tons per AAP)	COMMENTS
PARTICULATE MATTER (PM)	N/A	AEAR	Includes all fee emissions. See Notes for calculation methods for AEAR
PM ₁₀	N/A	N/A	
SO ₂	200,854	N/A	
VOC	155.0	N/A	Includes all fee emissions. See Notes for calculation methods for AEAR
NO _x	27,560	N/A	Maximum actual emissions.
CATEGORY OF MISCELLANEOUS HAZARDOUS AIR POLLUTANTS (HAP WITHOUT A STANDARD)*			
VOC FAMILY GROUP	83.2	N/A	Fee emissions are included in VOC above.
NON-VOC GASEOUS GROUP	N/A	AEAR	Fee emissions are not included above. Maximum actual HAP emissions.
PM FAMILY GROUP	N/A	AEAR	Fee emissions are included in PM above.
CATEGORY OF SPECIFIC HAZARDOUS AIR POLLUTANTS (HAP WITH A STANDARD)**			
VOC FAMILY GROUP	To be determined	N/A	
NON-VOC GASEOUS GROUP	N/A	AEAR	
PM FAMILY GROUP	N/A	AEAR	
CATEGORY OF NSPS POLLUTANTS NOT LISTED ABOVE***			
EACH NSPS POLLUTANT NOT LISTED ABOVE Sulfuric acid mist	59	N/A	Fee emissions are included above. Maximum actual emissions.

NOTES

AAP The Annual Accounting Period (AAP) is a twelve (12) consecutive month period that begins each July 1st and ends June 30th of the following year. The present Annual Accounting Period began July 1, 2015 and ends June 30, 2016. The next Annual Accounting Period begins July 1, 2016 and ends June 30, 2017.

N/A N/A indicates that no emissions are specified for fee computation.

AEAR AEAR indicates that an Actual Emissions Analysis is Required to determine the actual emissions of:

- (1) **each regulated pollutant** (Particulate matter, SO₂, VOC, NO_x and so forth. See TAPCR 1200-03-26-.02(2)(i) for the definition of a regulated pollutant.),
 - (2) **each pollutant group** (VOC Family, Non-VOC Gaseous, and Particulate Family), and
 - (3) **the Miscellaneous HAP Category**
- under consideration during the **Annual Accounting Period**. (AAP)
- * **Category Of Miscellaneous HAP (HAP Without A Standard):** This category is made-up of hazardous air pollutants that do not have a federal or state standard. Each HAP is classified into one of three groups, the **VOC Family** group, the **Non-VOC Gaseous** group, or the **Particulate (PM) Family** group. **For fee computation**, the **Miscellaneous HAP Category** is subject to the 4,000 ton cap provisions of subparagraph 1200-03-26-.02(2)(i).
- ** **Category Of Specific HAP (HAP With A Standard):** This category is made-up of hazardous air pollutants (HAP) that are subject to Federally promulgated Hazardous Air Pollutant Standards that can be imposed under Chapter 1200-03-11 or Chapter 1200-03-31. Each individual hazardous air pollutant is classified into one of three groups, the **VOC Family** group, the **Non-VOC Gaseous** group, or the **Particulate (PM) Family** group. **For fee computation**, each individual hazardous air pollutant of the **Specific HAP Category** is subject to the 4,000 ton cap provisions of subparagraph 1200-03-26-.02(2)(i).
- *** **Category Of NSPS Pollutants Not Listed Above:** This category is made-up of each New Source Performance Standard (NSPS) pollutant whose emissions are not included in the **PM, SO₂, VOC or NO_x** emissions from each source in this permit. **For fee computation**, each **NSPS pollutant not listed above** is subject to the 4,000 ton cap provisions of subparagraph 1200-03-26-.02(2)(I).

ACTUAL EMISSIONS ANALYSES

Actual Emissions Analyses Required for source 43-0011 are the following:

- (1) for particulate - all sources
- (2) for HAP, particulate - fuel burning installations 43-0011-01-10, 11-26, and 32.
- (3) for Non-VOC gaseous group (HAP without a standard) - all sources

Actual particulate emissions for fuel burning installation 43-0011-01-10 shall be calculated as follows:

$$\text{TPY per boiler} = (\text{btu/yr}) (\text{lb particulate} / 10^{12} \text{ btu}) (\text{ton} / 2000 \text{ lb})$$

where: btu/yr = actual annual heat input to the boiler for the previous Annual Accounting Period (AAP).

lb particulate / 10¹² btu = based on average concentration of particulate in the stack gas from the most recent stack test.

Actual particulate emissions for fuel burning installation 43-0011-11-26 shall be calculated as follows:

$$\text{TPY per combustion turbine} = (\text{btu/yr}) (\text{lb particulate} / 10^6 \text{ btu}) (\text{ton} / 2000 \text{ lb})$$

where: btu/yr = actual annual heat input to the CT for the AAP.

lb particulate / 10⁶ btu = emission factors of 0.029 lb per 10⁶ Btu for fuel oil and 0.007 lb per 10⁶ Btu for natural gas from manufacturer's data, emission factors for fuel oil and natural gas combustion - permit application revisions dated May 2001 pages 4-50 and 4-55 – **(Attachment 6 of this permit)**

Actual particulate emissions for fuel burning installation 43-0011-28 shall be calculated as follows:

$$\text{TPY per boiler} = (\text{btu/yr}) (\text{lb particulate} / 10^{12} \text{ btu}) (\text{ton} / 2000 \text{ lb})$$

where: btu/yr = actual annual heat input to the boiler for the AAP.

lb particulate / 10^{12} btu = emission factor of 14,355 lb per 10^{12} Btu derived from AP-42, Tables 1.3-1 and 1.3-2, emission factors for no. 2 fuel oil combustion (**Attachment 2 of this permit**)

Actual particulate emissions for source 43-0011-29 shall be calculated as described on pages 5-22 through 5-30 of the November 18, 1996 permit application (Attachment 5 of this permit).

Actual particulate emissions for source 43-0011-30 shall be calculated as described on pages 6-17 through 6-22 of the November 18, 1996 permit application (attachment 4 of this permit).

Actual particulate emissions for fuel burning installation 43-0011-32 shall be calculated as follows:

TPY per combustion turbine = (btu/yr) (lb particulate/ 10^6 btu) (ton/ 2000 lb)

where: btu/yr = actual annual heat input to the CT for the AAP.

lb particulate / 10^6 btu = emission factors of 0.012 lb per 10^6 Btu for fuel oil and 0.0066 lb per 10^6 Btu for natural gas from AP-42, emission factors for fuel oil and natural gas combustion – Table 3.1-2a. – (**Attachment 6 of this permit**)

Actual particulate emissions for fuel burning installation 43-0011-33 shall be calculated as follows:

TPY per heater = (btu/yr) (lb particulate/ 10^6 scf) (scf/ 1020 btu) (ton/ 2000 lb)

where: btu/yr = actual annual heat input to the heater for the AAP.

lb particulate / 10^6 scf = emission factor of 7.6 lb per 10^6 scf derived from AP-42, Table 1.4-2, emission factors for natural gas combustion (**Attachment 2 of this permit**)

Actual Non-VOC gaseous group (HAP without a standard) shall be calculated for the previous Annual Accounting Period (AAP) and as reported for the National Emissions Inventory.

END NOTES

The permittee shall:

- (1) Pay major source annual mixture (**allowable and actual**) based emission fees, as requested by the responsible official, for each Annual Accounting Period (AAP) by July 1 of each year.
- (2) Prepare an **actual emissions and allowable emissions analysis** in accordance with the above **Fee Emissions Summary Table for each AAP**. The **actual emissions and allowable emissions analysis** shall include:
 - (a) the completed **Fee Emissions Summary Table**, and
 - (b) each **AEAR** required by the above **Fee Emissions Summary Table**
 - (c) the records used to complete the **AEAR's** required by the above **Fee Emissions Summary Table**
- (3) Submit the **actual emissions and allowable emissions analysis** at the time the fees are paid in full.
- (4) Calculate the fee due based upon the **actual emissions and allowable emissions analysis**, and submit the payment on July 1st following the end of the **annual accounting period**. If any part of any fee imposed under TAPCR 1200-03-26-.02 is not paid within fifteen (15) days of the due date, penalties shall at once accrue as specified in TAPCR 1200-03-26-.02(8). Major sources may request an extension of time to file their emissions analysis with the Technical Secretary as specified in Condition A8(c)5 of this

permit. Emissions for regulated pollutants shall not be double counted as specified in Condition A8(d) of this permit.

Payment of the fee due and the actual emissions analysis shall be submitted to The Technical Secretary at the following address:

Tennessee Department of Environment and Conservation
 Division of Fiscal Services
 Consolidated Fee Section– APC
 William R. Snodgrass Tennessee Tower
 312 Rosa L Parks Avenue, 10th Floor
 Nashville, TN 37243

TAPCR 1200-03-26-.02 (3) and (9), and 1200-03-09-.02(11)(e)1 (iii) and (vii)

E2 (SM1). Reporting requirements

- (a) **Quarterly Reports.** Reporting periods shall be **January 1 to March 31, April 1 to June 30, July 1 to September 30, and October 1 to December 31** of each calendar year. The quarterly reports shall be submitted within 30 days after the end of each reporting period. These reports are not required to be certified by a responsible official. Quarterly reports of this facility (43-0011) shall include any monitoring and recordkeeping required by Condition **E3-12** of this permit. A summary report of this data is acceptable provided there is sufficient information to enable the Technical Secretary to evaluate compliance.

These reports shall be submitted to the Compliance Validation Section at the address specified below:

Division of Air Pollution Control
 ATTN: Compliance Validation Section
 William R. Snodgrass Tennessee Tower
 312 Rosa L. Parks Avenue, 15th Floor
 Nashville, TN 37243

or,

Email (signed PDF copy): Air.Pollution.Control@tn.gov.

- (b) **Semiannual reports.** Reporting periods shall be **January 1 to June 30** and **July 1 to December 31** of each calendar year. The Semiannual reports shall be submitted within 60 days after the end of each reporting period. Semiannual reports of this facility (43-0011) shall include:
- (1) Any recordkeeping and monitoring required by Conditions **E3-4(b), E3-13, E4-5, E4-7, E4-8, E6-2(a), E8-4, E8-5, E8-6, E8-9, E8-10, E8-12, E8-13, E10-15, and E11-15** of this permit. However, a summary report of this data is acceptable provided there is sufficient information to enable the Technical Secretary to evaluate compliance.
 - (2) The visible emission evaluation readings from Conditions **E2-2(b), E3-6, E4-4, E5-4, E6-2(b), E7-1(b), E8-11, E9-3, and E10-6** of this permit if required. However, a summary report of this data is acceptable provided there is sufficient information to enable the Technical Secretary to evaluate compliance.
 - (3) Identification of all instances of deviations from **ALL PERMIT REQUIRMENTS.**

These reports must be certified by a responsible official consistent with condition B4 of this permit and shall be submitted to The Technical Secretary at the address in Condition E2(c) of this permit.

TAPCR 1200-03-09-.02(11)(e)1.(iii)

(c) **Annual compliance certification.** The permittee shall submit annually compliance certifications with terms and conditions contained in Sections **A, B, D,** and **E** of this permit, including emission limitations, standards, or work practices. This compliance certification shall include all of the following (provided that the identification of applicable information may cross-reference the permit or previous reports, as applicable):

- (1) The identification of each term or condition of the permit that is the basis of the certification;
- (2) The identification of the method(s) or other means used by the owner or operator for determining the compliance status with each term and condition during the certification period. Such methods and other means shall include, at a minimum, the methods and means required by this permit. If necessary, the owner or operator also shall identify any other material information that must be included in the certification to comply with section 113(c)(2) of the Federal Act, which prohibits knowingly making a false certification or omitting material information.
- (3) Reserved.
- (4) The status of compliance with the terms and conditions of the permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent. The certification shall be based on the method or means designated in E2(b)(1) above. The certification shall identify each deviation and take it into account in the compliance certification. The certification shall also identify as possible exceptions to compliance any periods during which compliance is required and in which an *excursion or **exceedance as defined below occurred; and
- (5) Such other facts as the Technical Secretary may require to determine the compliance status of the source.

*"Excursion" shall mean a departure from an indicator range established for monitoring under this paragraph, consistent with any averaging period specified for averaging the results of the monitoring.

**"Exceedance" shall mean a condition that is detected by monitoring that provides data in terms of an emission limitation or standard and that indicates that emissions (or opacity) are greater than the applicable emission limitation or standard (or less than the applicable standard in the case of a percent reduction requirement) consistent with any averaging period specified for averaging the results of the monitoring.

Annual compliance certifications shall cover the 12-month periods from January 1 to December 31 of each calendar year and shall be submitted within 60 days after the 12-month reporting period. These certifications shall be submitted to: Tennessee Division of Air Pollution Control TN APCD and EPA

Tennessee Department of Environment and Conservation and
Division of Air Pollution Control
Nashville Environmental Field Office
711 R.S. Gass Blvd.
Nashville, Tennessee 37216

U. S. EPA Region 4
ATTN: Air and EPCRA Enforcement Branch
61 Forsyth Street, SW Street
Atlanta, GA 30303

40 CFR Part 70.6(c)(5)(iii) as amended in the Federal Register Vol.62, No.204, October 22, 1997, pages 54946 and 54947

(d) Unless otherwise specified in this permit, the averaging time for an emission standard shall be the same time period as that of the compliance test method approved by the Technical Secretary.

E2-1. Recordkeeping: Data Entry Requirements

- (a) For monthly recordkeeping, all data, including the results of all calculations, must be entered into the log no later than thirty (30) days from the end of the month for which the data is required.
- (b) For weekly recordkeeping, all data, including the results of all calculations, must be entered into the log no later than seven (7) days from the end of the week for which the data is required.

- (c) For daily recordkeeping, all data, including the results of all calculations, must be entered into the log no later than seven (7) days from the end of the day for which the data is required.

TAPCR 1200-03-10-.02(2)(a)

E2-2. Visible Emissions Evaluation: General Requirements

- (a) For all emission sources that use the opacity matrix decision trees (Attachment 1) to comply with any visible emissions requirement, including emission sources for which visible emissions are not required by the opacity matrix, if the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.
- (b) Compliance with the fugitive emission requirements of **Condition D7(b)** shall be determined by Tennessee Visible Emissions Evaluation Method 4 as adopted by the Tennessee Air Pollution Control Board on April 16, 1986. These evaluations shall be made semiannually.

TAPCR 1200-03-08, TAPCR 1200-03-09-.02(11)(e)1.(iii), TAPCR 1200-03-10-.02(1)(a)

E2-3. Ambient Monitoring for SO₂

Consistent with the provisions of TAPCR 1200-03-14-.01(6), each owner or operator of a fuel burning installation having a total rated capacity greater than 1,000 MMBtu/hr of sulfur dioxide during calendar year 1972 or any other calendar year thereafter must comply with the following requirements:

- (a) Demonstrate to the satisfaction of the Technical Secretary, that the sulfur dioxide emitted either alone or in contribution to other sources will not interfere with attainment and maintenance of any primary or secondary air quality standard.
- (b) Install and maintain air quality sensors to monitor attainment and maintenance of ambient air quality standards in the areas influenced by the emissions from such installation. Such shall be done in the manner prescribed by the Technical Secretary. Results of such monitoring shall be provided to the Technical Secretary in the manner and form as he shall direct. Owners or operators may petition and be granted permission by the Technical Secretary to terminate ambient air quality monitoring provided two calendar years air quality data has been generated in the area under the influence of the source's emissions to verify compliance with the Tennessee Ambient Air Quality Standards. Petitions may be granted if the following conditions are met:
 - (1) The source must be located in an attainment area and must not significantly impact a sulfur dioxide nonattainment area.
 - (2) Measurements of air quality in the vicinity of the source demonstrate that ambient sulfur dioxide levels do not exceed 75 percent of the Tennessee Ambient Air Quality Standards.
- (c) All calculations performed pursuant to demonstration required by rule .01(6) shall assume that the process emission source and fuel burning installation is operating at a maximum rated capacity.

Pursuant to the approval letter from the Technical Secretary dated February 1, 2008, this facility has met the requirements of paragraphs (b)(1) and (b)(2) of this condition, and ambient SO₂ monitoring is not required.

TAPCR 1200-03-14-.01(6)

E2-4 (SM1). Consent Decree/Federal Facilities Compliance Agreement

The permittee is placed on notice that this facility is subject to an enforceable Consent Decree with the Tennessee Valley Authority (State of Alabama et. al. v. TVA, Civil Action No. 3:11-cv-00170, filed April 14, 2011, approved June 30, 2011), which imposes certain requirements at this facility. The permittee shall comply with the agreed control technology for this facility as provided in paragraphs 69 and 85 of the Consent Decree.

Control Technology Options, Johnsonville Fossil Plant		
Unit(s)	Pollutant	Control Technology Options
Units 1 - 10	SO ₂ and NO _x	Retire 6 Units by December 31, 2015, retire 4 additional Units by December 31, 2017

E2-5. This facility is subject to the provisions of the Acid Rain permit **No. 863259** as specified in **Attachment 3** of this permit.

E2-6. A list of non-applicable requirements is found at **Attachment 8** of this permit.

E2-7 (MM1). Identification of Responsible Official, Technical Contact, and Billing Contact

- (a) The application that was utilized in the preparation of this renewal permit is dated July 30, 2015, and is signed by Steve L Holland, Assistant Plant Manager. The application identifies Clay C. Cherry as the Responsible Official for the permitted facility. If this person terminates their employment or is assigned different duties such that they are no longer a Responsible Official for this facility as defined in part 1200-03-09-.02(11)(b)21 of the Tennessee Air Pollution Control Regulations, the owner or operator of this air contaminant source shall notify the Technical Secretary of the change. Said notification must be in writing and must be submitted within thirty (30) days of the change. The notification shall include the name and title of the new Responsible Official and certification of truth and accuracy. All representations, agreement to terms and conditions, and covenants made by the former Responsible Official that were used in the establishment of the permit terms and conditions will continue to be binding on the facility until such time that a revision to this permit is obtained that would change said representations, agreements, and/or covenants.
- (b) The application that was utilized in the preparation of this renewal permit is dated July 30, 2015, and identifies Karrie K Dodson as the Principal Technical Contact for the permitted facility. If this person terminates their employment or is assigned different duties such that they are no longer the Principal Technical Contact for this facility, the owner or operator of this air contaminant source shall notify the Technical Secretary of the change. Said notification must be in writing and must be submitted within thirty (30) days of the change. The notification shall include the name and title of the new Principal Technical Contact and certification of truth and accuracy.
- (c) The application that was utilized in the preparation of this renewal permit is dated July 30, 2015, and identifies Tom Waddell as the Billing Contact for the permitted facility. If this person terminates their employment or is assigned different duties such that they are no longer the Billing Contact for this facility, the owner or operator of this air contaminant source shall notify the Technical Secretary of the change. Said notification must be in writing and must be submitted within thirty (30) days of the change. The notification shall include the name and title of the new Billing Contact and certification of truth and accuracy.

E2-8 (SM1). MATS Requirements

In a letter dated March 5, 2014, the permittee requested a one-year extension to the compliance date for the 40 CFR 63 Subpart UUUUU Mercury and Air Toxics Standard (MATS) for the affected electric generating units at this facility. Pursuant to 40 CFR §63.6 paragraphs (i)(9) through (i)(14), the Division granted a one-year compliance date extension. The extended compliance date for the applicable requirements of the MATS is **April 16, 2016**.

The permittee is placed on notice that coal-fired and oil-fired EGUs (as defined in 40 CFR §63.10042) are subject to the requirements of 40 CFR 63 Subpart UUUUU (National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units). The emission limits applying to EGUs at this facility are set out in Table 2 of

Subpart UUUUU. The source will demonstrate compliance with a particulate matter (PM) limit of 0.030 lb/MMBtu on a 30 boiler operating day rolling average with a PM CEMS or based on quarterly stack testing. The source will demonstrate compliance with a mercury (Hg) limit of 1.2 lb/TBtu on a 30 boiler operating day rolling average with a mercury CEMS or based on the use of a sorbent trap. The source will demonstrate compliance with hydrogen chloride (HCl) by measuring sulfur dioxide (SO₂) as a surrogate; compliance with the surrogate standard of 0.2 lb SO₂/MMBtu will be demonstrated with an SO₂ CEMS on a 30 boiler operating day rolling average. The source will comply with the work practice standards in Table 3 to Subpart UUUUU, using Definition 1 or 2 for “startup” provided in §63.10042. The source reserves the right to select from among the compliance options and compliance methods set out in Tables 2 and 3 of Subpart UUUUU at the time it submits the Notification of Compliance Status under §63.10030.

TAPCR 1200-03-09-.03(8), 40 CFR 63 Subpart UUUUU, 40 CFR §63.6(i)(4)(i)(A), Division letter to permittee dated December 15, 2014

SOURCE SPECIFIC CONDITIONS

43-0011-01-10	Source Description	<u>Ten (10) Coal Fired Boilers for Steam & Electricity Generation:</u>
		15,688 Million Btu/hour nominal heat input; 1486 Megawatts (nameplate capacity); Electrostatic Precipitator Control; TVA designated emission unit 1

Conditions E3-1 through E3-19 apply to fuel burning installation 43-0011-01-10

E3-1. The fuel burning equipment at this installation consists of ten (10) coal-fired boilers. The units are pulverized coal, dry-bottom boilers without fly ash reinjection. Units 1-6 are Combustion Engineering tangentially-fired boilers. Units 7-10 are Foster Wheeler wall fired boilers. All boilers exhaust through a common stack.

The normal fuels are coal and wood with No. 2 fuel oil for startup (or reprocessed oil). Fuel oil or reprocessed oil may also be burned as follows: (1) under non-steady state and low-load conditions to ensure flame stability, and (2) to supplement boiler heat input when the heat input from coal is insufficient. The primary particulate control devices are high efficiency electrostatic precipitators.

The source is required to monitor / measure emissions of sulfur dioxide (SO₂) in pounds per hour, nitrogen oxides (NO_x) in pounds per million Btu, carbon dioxide (CO₂) in tons per day, heat input in million Btu per hour, and opacity according to the Part 75 requirements of the Acid Rain Program.

The source shall comply with Rule 1200-03-27-.06 of the Tennessee Air Pollution Regulations (Nitrogen Oxides (NO_x) Budget Trading Program) and the specified unit NO_x allocations.

TAPCR 1200-03-09

E3-2. The amount of on and off spec oil, as defined at 40 CFR 279, and nonhazardous solvents that can be burned in this fuel burning installation shall not exceed **100,000** gallons per year. In addition, nonhazardous organic boiler cleaning chemicals, oil-contaminated soil, filters, and media, and absorbent material used to clean up oil spills may be burned.

TAPCR 1200-03-09

Compliance Method: Compliance for this condition is assured by the recordkeeping required by condition E3-13 of this source.

TAPCR 1200-03-09-.02(11)(e)1.(iii)

E3-3. The permittee may conduct test burns of fuels other than those listed in conditions **E3-1** and **E3-2** for up to 30 operating days without a construction permit or a reopening of this permit provided that:

- (A) Notification is provided to the Technical Secretary at least 30 days prior to initiation of the burning of such fuels. Notification at a minimum shall include a copy of the test plan; the fuels to be burned; an estimated start date and completion date; an estimate of the impact on control devices; and an estimate of the impact on emissions;
- (B) The source complies with all applicable emission limitations; and
- (C) The permittee agrees to perform additional testing as may be required by the Technical Secretary. The permanent use of such fuels shall be allowed upon completion of testing unless the Technical Secretary determines that a permit revision is required. Such determination will examine triggering control requirements under the **PSD, NESHAPS, NSPS** or other programs. In any event, the Technical Secretary shall issue an approval or disapproval for the continuing use of the alternate fuel.

TAPCR 1200-03-09

- E3-4 (SM1).** The particulate emissions from this fuel burning installation shall not exceed 0.100 pounds per million Btu of heat input as specified in Paragraph 1200-03-06-.02(1) of the Tennessee Air Pollution Control Regulations.

TAPCR 1200-03-06-.02(1)

Compliance Method: Compliance with this condition shall be assured as follows:

- (a) The permittee shall perform stack testing of this fuel burning source to demonstrate compliance with the applicable particulate emissions limits. Testing shall be performed every calendar year, and a particulate source test report shall be filed with the Technical Secretary within 45 days after completion of the testing. Ten (10) days prior to conducting the source test, the permittee shall provide notice of such test to the Technical Secretary to afford him the opportunity to have an observer present. Testing of stacks shall be conducted in accordance with TAPCR 1200-03-12 and 40 CFR 60, Appendix A, Method 5 **and** ensuring that the front half filter temperature shall be $160^{\circ} \pm 14^{\circ} \text{C}$ ($320^{\circ} \pm 25^{\circ} \text{F}$). TVA shall calculate the PM emission rate from the stack test results in accordance with 40 CFR 60.8(f). The continuous induct opacity monitor(s) shall be fully operational prior to and during the performance test. The opacity data generated during this compliance testing shall be incorporated into the test report. Stack testing performed as part of an annual relative response audit (RRA) under 40 CFR 63 UUUUU (**Condition E2-6**) shall be considered to satisfy this requirement.
- (b) The permittee shall operate the continuous opacity monitoring system (COMS) to provide an indication of good operational and maintenance practices. The COMS shall comply with **Conditions E3-7, E3-8, E3-11, E3-14, E3-15** of this permit and with the applicable provisions of 40 CFR 64, as indicated in the attached CAM plan (**Attachment 9**).
- (c) The Technical Secretary may require additional performance testing for exceedances of the *de minimis* criteria specified in TAPCR 1200-03-20-.06. The permittee shall conduct performance tests upon written notification of the Technical Secretary, within the time period specified in the written notification.
- (d) Beginning June 13, 2011 and continuing thereafter, the permittee shall continuously operate (as defined by Paragraph 15 of the Consent Decree) each PM Control Device on each Unit. TVA shall, at a minimum, to the extent reasonably practicable and consistent with manufacturers' specifications, the operational design of the Unit, and good engineering practices,
 1. Fully energize each section of the ESP for each Unit;
 2. Operate automatic control systems on each ESP to maximize PM collection efficiency; and
 3. Maintain power levels delivered to the ESPs as needed to maximize collection efficiency.

TVA must complete and submit all PM emission control optimization studies according to the schedule dictated by Paragraph 99 the Consent Decree.

TAPCR 1200-03-06-.02(1), 1200-03-09-.02(11)(e)1.(iii), 40 CFR 64, Consent Decree

- E3-5.** The sulfur dioxide emissions from this fuel burning installation shall not exceed 3.4 pounds per million Btu of heat input (TAPCR 1200-03-14-.02(1)(a)). A twenty-four (24) hour midnight to midnight averaging basis as specified in Subparagraph 1200-03-14-.02(1)(d) of the Tennessee Air Pollution Control Regulations shall be utilized.

The sulfur dioxide emissions from this fuel burning installation shall not exceed **181,741** tons per year (calendar basis). This value is that contained in Volume 2, Section 2.12.2.E.2, Table 1 (Projected 1987 Sulfur Dioxide Emissions for the New Johnsonville Nonattainment Area) of the Tennessee State Implementation Plan. This value representing RACT for the fuel burning installation (Section 2.12.2.F.2, Reasonable Further Progress).

Compliance Method: Compliance with these emission limitations shall be determined through the use of continuous in-stack monitoring for sulfur dioxide.

TAPCR 1200-03-09-.02(11)(e)1.(iii)

Consistent with the provisions of Rule 1200-03-20-.06 of the Tennessee Air Pollution Control Regulations, no notice of violation shall be automatically issued unless the specified de minimus level of one (1) 24-hour period per year of sulfur dioxide emissions in excess of the applicable sulfur dioxide emissions standard, as measured by the continuous in-stack sulfur dioxide emissions monitoring system, is exceeded. This exemption from automatic issuance of a notice of violation is applicable provided that good operational and maintenance practices are utilized for the fuel burning equipment, and the 95 percent operational availability of the sulfur dioxide monitoring system is maintained.

TAPCR 1200-03-20-.06

- E3-6.** The visible emissions from this source shall not exceed twenty-eight (28) percent opacity except for one 6-minute period per hour of not more than 40% opacity.

TAPCR 1200-03-05-.05(6) Certificate of Validation

Compliance Method: Consistent with the provisions of Paragraph 1200-03-05-.03(1) of the Regulations, compliance with the applicable visible emissions standards shall be determined by a certified reader using Method 9. Each stack shall be evaluated biannually unless a valid reading cannot be made due to merging plumes or other reasons. In the event that a valid reading cannot be taken within 6 months and provided that at least one reading was attempted during the six month period, an additional 30 days shall be allowed in which to attempt another reading. If a valid reading cannot again be made, the permittee shall within 60 days of the end of the six-month period submit a report describing its efforts to obtain valid readings, and the reasons it could not.

Monitoring Method: Opacity shall be recorded by a continuous opacity monitoring (COM) system. COM data shall provide an indication of good operational and maintenance practices.

TAPCR 1200-03-09-.02(11)(e)1.(iii) and TAPCR 1200-03-10-.02(1)

- E3-7.** Consistent with the requirements of Chapter 1200-03-20 and Rule 1200-03-05-.02, due allowance shall be made for visible emissions in excess of that allowed in this permit which are necessary or unavoidable due to routine startup and shutdown conditions.

The visible emission requirements of condition **E3-6** shall not apply during periods of routine startup and shutdown. Routine startup includes only startups which have less than 7.3 hours of visible emissions in excess of 28% opacity and shall not include any periods of time in which visible emissions exceed eighty (80) percent opacity for more than 3.6 hours based on six (6) minute averaging intervals. Routine shutdown shall only include shutdowns which have less than 3.2 hours of visible emissions in excess of 28% opacity and shall not include any periods of time in which visible emissions exceed eighty (80) percent opacity for more than 0.2 hours based on six (6) minute averaging intervals. For overlapping multiple unit startups and shutdowns, the full exempt period shall apply from the beginning of each individual boiler startup or shutdown. A log of all malfunctions and non-routine startups and shutdowns shall be maintained in accordance with Rule 1200-03-20-.04. Irrespective of the start-up and shutdown exemptions set forth on the operating permit of any source, no emission shall be allowed which can be proved by the Technical Secretary to cause or contribute to any violations of the Ambient Air Quality Standards contained in Chapter 1200-03-03.

TAPCR 1200-03-05-.05 and 1200-03-20-.06(6)

E3-8. Operational Availability Condition for the Opacity Monitoring System

The in-stack opacity monitoring system for this fuel burning installation shall be fully operational for at least ninety five (95) percent of the operational time of the monitored units during each calendar quarter.

Operational availability levels of less than these amounts may be considered the basis for declaring the fuel burning installation in noncompliance with the applicable monitoring requirements, unless the reasons for the failure to maintain these levels of operational availability are accepted by the Division as being legitimate malfunctions of the instruments or due to limited operation of the monitored units.

TAPCR 1200-03-10-.04(2)(a)(2)

E3-9. Operational Availability Condition for the Sulfur Dioxide Monitoring System

The use of continuous in-stack monitoring for sulfur dioxide is the method by which this fuel burning installation proves continual compliance with the applicable sulfur dioxide emissions limitation. Therefore, for this fuel burning installation to demonstrate continual compliance with the applicable sulfur dioxide emission limitation, each sulfur dioxide monitoring system shall be fully operational for at least ninety five (95) percent of the operational time of the monitored units during each calendar quarter. An operational availability level of less than this amount may be considered the basis for declaring the fuel burning installation in noncompliance with the applicable monitoring requirements, unless the reasons for the failure to maintain this level of operational availability is accepted by the Division as being legitimate malfunctions of the instruments or due to limited operation of the monitored units. Furthermore, should the sulfur dioxide monitoring system remain inoperative for more than seven (7) consecutive days, then the use of backup monitoring approved by the Technical Secretary will be required.

TAPCR 1200-03-10-.04(2)(a)2.

E3-10. Quality Assurance Condition for the Sulfur Dioxide Monitoring System

Quality assurance checks shall be performed on each sulfur dioxide monitoring system on an annual basis. The quality assurance checks shall consist of a repetition of the relative accuracy portion of the Performance Specification Test. Written reports of the quality assurance checks shall be submitted to the Technical Secretary.

Within ninety (90) days of each major modification or major repair of any emissions monitor, diluent monitor, or electronic signal combining system, a repeat of the performance specification test shall be conducted, and a written report of it submitted to the Technical Secretary as proof of the continuous operation of the emissions monitoring system within acceptable accuracy limits.

TAPCR 1200-03-10-.02(1)(a)

E3-11. Quality Assurance Condition for the Opacity Monitoring System

On-stack quality assurance audits shall be conducted on a semiannual basis. This on-stack quality assurance audit shall consist of a repetition of the calibration error portion of Performance Specification 1 (40 CFR 60, Appendix B) utilizing the on-stack audit device, and written reports of the audits shall be submitted to the Technical Secretary.

As an alternative to this, an off-stack quality assurance audit may be conducted on a biennial calendar basis. If elected, this quality assurance audit shall include, at a minimum, a repetition of the calibration portion of 40 CFR 60, Appendix B, Performance Specification 1. Both the monitor transceiver and retroreflector must be removed from the stack and set up to the stack pathlength prior to conducting the quality assurance. Written reports of the quality assurance checks shall be submitted to the Technical Secretary. Prior to the commencing of the use of this option, the Technical Secretary shall be informed in writing of the election of this option. Utilization of this option shall not be cause for the reopening of this permit.

Within ninety (90) days of each major modification or major repair of any opacity monitor, a repeat of the performance specification test shall be conducted, and a written report of it submitted to the Technical Secretary as proof of the continuous operation of the opacity monitoring system within acceptable limits.

TAPCR 1200-03-10-.02(1)(a)

- E3-12.** From the emissions data generated by the continuous in-stack opacity and sulfur dioxide monitoring systems, quarterly reports of opacity emissions over **28%** and excess sulfur dioxide emissions shall be generated. The format of these quarterly reports shall meet the requirements of Paragraph 1200-03-10-.02(2) of the Tennessee Air Pollution Control Regulations. These reports shall be submitted to the Division no later than thirty (30) days after the end of each calendar quarter.

TAPCR 1200-03-10-.02(2) and TAPCR 1200-03-09-.02(11)(e)1(iii)

- E3-13.** Daily fuel usage records shall be maintained of the amounts of used oil and nonhazardous solvents burned. If there is no daily usage of a fuel, then a record of the respective fuel usage on that day is not required. These records shall be maintained at the facility and shall be available for inspection by the Technical Secretary or his representative.

- E3-14.** For sulfur dioxide, eighteen (18) valid one-hour averages are required in order to calculate a valid daily average (midnight to midnight). One-hour averages shall be calculated from four valid 15-minute averages over each one-hour period, except during periods when calibration, quality assurance, or maintenance are being performed. During these periods, a valid one-hour average shall consist of at least two 15-minute averages. In addition to the above criteria regarding the availability of monitor data, operation of the boiler for at least 45 minutes during the hour is required for the one-hour average to be valid.

Average values for opacity may be obtained by integration over the 6-minute averaging period or by arithmetically averaging a minimum of 24 equally spaced, instantaneous opacity measurements per 6-minute period. Opacity data recorded during periods of monitoring system breakdown, repairs, calibration checks, and zero and span adjustments shall not be included in the data averages.

TAPCR 1200-03-09-.02(11)(e)1(iii); 1200-03-10-.02(1)(a); and 1200-03-10-.02(2)

- E3-15.** For opacity monitoring, the reports referenced in condition **E3-12** shall consist of:

- (A) The magnitude in actual percent opacity of all 6-minute averages of opacity greater than 28% for each hour of operation of the source minus one 6-minute exempt period of no more than 40 percent opacity;
- (B) The date and time identifying each period during which the system was inoperative, except for zero and span checks, and the nature of system repairs or adjustments shall be reported. The Technical Secretary may require proof of system performance whenever system repairs or adjustments have been made;
- (C) When no emissions over 28% opacity have occurred and the system has not been inoperative, repaired, or adjusted, such information shall be included in the report; and
- (D) The nature and cause of emissions over 28% opacity, if known.

TAPCR 1200-03-10-.02(2) and 1200-03-09-.02(11)(e)(iii)

- E3-16.** For sulfur dioxide monitoring, the reports referenced in condition **E3-12** shall consist of:

- (A) Emission averages, in the units of the applicable standard, for each averaging period during operation of the source.
- (B) Identification of each averaging period in which the applicable standard was exceeded and the nature and cause of excess emissions, if known;
- (C) The date and time identifying each period during which the system was inoperative, except for zero and span checks, and the nature of system repairs or adjustments shall be reported. The Technical Secretary may require proof of system performance whenever system repairs or adjustments have been made; and

- (D) When no excess emissions have occurred and the system has not been inoperative, repaired, or adjusted, such information shall be included in the report.

TAPCR 1200-03-10-.02(2) and 1200-03-9-.02(11)(e)1(iii)

- E3-17.** This source (43-0011-01-10) is subject to the requirement of 40 CFR part 64 - Compliance Assurance Monitoring (CAM) for particulate matter. The details of the monitoring plan are found at **ATTACHMENT 9** of this permit.

E3-18 (SM1). Transport Rule (TR) Requirements

The permittee shall comply with the applicable provisions of 40 CFR 97 Subparts AAAAA (TR NO_x Annual Trading Program), BBBBB (TR NO_x Ozone Season Trading Program), and CCCCC (TR SO₂ Group 1 Trading Program). The permittee shall comply with paragraphs 74 through 78 of the Consent Decree regarding the use and surrender of NO_x allowances, and with paragraphs 90 through 93 of the Consent Decree regarding the use and surrender of SO₂ allowances. The permittee may sell, bank, use, trade, or transfer any allowances in accordance with paragraphs 82 and 94 of the Consent Decree (Super-Compliance Allowances). For surrender of allowances, the permittee shall comply with paragraphs 79, 80, 95, and 96 of the Consent Decree.

TAPCR 1200-03-09-.03(8) and 40 CFR §52.2240 and §52.2241, 40 CFR §§97.401 – 97.435, §§97.501 – 97.535, §§97.601 – 97.635, Consent Decree

- E3-19.** This fuel-burning installation is subject to the provisions of 40 CFR 63 Subpart UUUUU—National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units.

E3-20 (SM1). Continuous Operation of NO_x and SO₂ Control Equipment

Beginning June 13, 2011 and continuing thereafter, the permittee shall continuously operate any pollution control technology or combustion control (including, but not limited to, SCR, FGD, PM Control Device, SNCR, Low NO_x Burner (LNB), Overfire Air (OFA) or Separated Overfire Air (SOFA)) at all times such Unit is in operation, except during a Malfunction that is determined to be a Force Majeure Event as defined by the Consent Decree. This continuous operation serves to minimize emissions to the greatest extent technically practicable consistent with the technological limitations, manufacturers' specifications, fire prevention codes, and good engineering and maintenance practices for such pollution control technology or combustion control and the Unit. This condition specifically applies to such equipment as the installed SNCR for NO_x emissions control.

TAPCR 1200-03-09-.03(8), Consent Decree

E3-21 (SM1). Compliance with System-Wide Annual NO_x and SO₂ Tonnage Limits

During each calendar year all Units in the TVA System and any New CC/CT Units constructed pursuant to Paragraph 117 of the Consent Decree, collectively, shall not emit NO_x or SO₂ in excess of the System-Wide Annual Tonnage Limitations found in paragraphs 67-69 and 82-84 of the Consent Decree.

Compliance Method: In accordance with 40 CFR 75, TVA shall use CEMS to monitor emissions of NO_x and SO₂ to demonstrate compliance with the System-Wide Annual Tonnage Limitations. TAPCR 1200-03-09-.03(8), Consent Decree

43-0011-11-26	Source Description	<p><u>Combustion Turbine Electric Generating Plant:</u> Sixteen (16) simple cycle turbines; CT Units 1-16 14,848 million Btu/hour nominal heat input capacity at 0 degrees F (928 million Btu/hour each unit); 1259 megawatt total electrical output; No. 2 Fuel oil or natural gas fired. Evaporative inlet fogging for NO_x control. TVA designated emission units 2-17 Two (2) natural gas fired heaters; Heater Units NGH3 and NGH4: Heating of heat exchanger water used to vaporize condensate in natural gas feed to the combustion turbines. 22 million Btu/hour nominal heat input capacity (11 million Btu/hour each unit). TVA designated emission units 29- 32 (heaters 3&4)</p>
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Conditions E4-1 through E4-8 apply to fuel burning installation 43-0011-11-26

- E4-1.** This fuel burning equipment installation consists of sixteen (16) identical General Electric MS 7001B simple cycle combustion turbines. The normal fuels are No. 2 fuel oil (or alternate fuels which meet all applicable standards) and natural gas.
- E4-2.** Particulate emissions from this fuel burning installation shall not exceed **0.100** pounds per million Btu of heat input as specified in subparagraph 1200-03-06-.02(2)(a) of the Tennessee Air Pollution Control regulations. Testing methodology shall be EPA Method 5, as published in the current 40 CFR 60, Appendix A.

Compliance Method: Compliance assurance for the particulate standard stated in this condition is based upon the following emission factors for combustion of No. 2 fuel oil and natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds per million Btu)</u>
Particulate matter	0.029 (fuel oil) 0.0070 (natural gas)

Data from manufacturer's data and sample calculation on page 4-55 of the permit application revisions dated May 2001 (enclosed as Attachment 6)

TAPCR 1200-03-09-.02(11)(e)1.(iii)

- E4-3.** Sulfur dioxide emitted from this fuel burning installation while burning No. 2 fuel oil shall not exceed **0.8** pounds per million Btu of heat input utilizing a one hour averaging basis as specified in Subparagraphs 1200-03-14-.02(2)(b) and 1200-03-19-.14(1)(b) of the Tennessee Air Pollution Control regulations. Testing methodology shall be EPA Method 6, as published in the current 40 CFR 60, Appendix A.

Compliance Method: Compliance assurance for the sulfur dioxide emission standard stated in this condition is based upon the following emission factors for combustion of No. 2 fuel oil and natural gas:

<u>Pollutant</u>	<u>Emission Factor (pounds per million Btu)</u>
Sulfur dioxide	0.48 (fuel oil) 0.0034 (natural gas)

Data from AP-42, Table 3.1-2a and sample calculation on page 4-59 of the permit application revisions dated May 2001 (enclosed as Attachment 6)

TAPCR 1200-03-09-.02(11)(e)1.(iii)

- E4-4.** Visible emissions from this fuel burning installation shall not exceed 20 percent opacity except for one (1) six minute period per one (1) hour of not more than forty percent (40%) opacity as specified in Paragraph 1200-03-05-.01(1) of the Tennessee Air

Pollution Control Regulations. Opacity data reduction shall be accomplished utilizing the procedures outlined in the current 40 CFR 60, Appendix A, Method 9. (6 minute average).

Compliance Method: Compliance with this standard shall be determined by the procedures of the Division’s Opacity Matrix amended September 11, 2013 enclosed as **Attachment 1**.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

TAPCR 1200-03-05-.01(1)

E4-5. Except as provided in condition **E4-6**, only grade No. 2 fuel oil or natural gas shall be burned in the combustion turbines to ensure compliance with the applicable sulfur dioxide, particulates, and opacity limitations. The sulfur content of the no. 2 fuel oil shall not exceed 0.5 percent by weight.

Compliance Method: Compliance with this condition shall be assured by the recordkeeping of condition **E4-8**.

TAPCR 1200-03-09-.02(11)(e)1.(iii)

E4-6. Alternate fuels may be used after assurance of compliance to the Technical Secretary with the applicable particulate and sulfur dioxide emission standards.

E4-7. Consistent with the provisions of Section 2.12.2.F.2 Reasonable Further Progress (New Johnsonville Additional Control Area) of the Air Quality Implementation Plan of the State of Tennessee as of July 1, 1982, the operating capacity of this fuel burning installation shall not exceed 3,360 gigawatt-hours per year. This limitation is established pursuant to Rules 1200-03-06-.01(7) and 1200-03-14-.01(3) of the Tennessee Air Pollution Control Regulations and the information contained in the agreement letter dated January 20, 1999 from the permittee.

Compliance Method: Compliance with this condition shall be assured by the recordkeeping of condition E4-8.

TAPCR 1200-03-09-.02(11)(e)1.(iii)

E4-8. Recordkeeping is the method by which this source is monitored for compliance with the applicable operating capacity restriction of condition E4-7. A monthly log of the following information must be maintained at the source location and kept available for inspection by the Technical Secretary or his representative:

a. Sulfur analysis for each shipment of #2 fuel oil or certification statement by the vendor that the fuel oil sulfur content shall not exceed 0.5 percent by weight

b. Megawatt hour output

TAPCR 1200-03-19-.14(1)(b), TAPCR 1200-03-09-.02(11)(e)1(iii)

43-0011-28	Source Description	<u>Auxiliary Heating Boilers (HB-1 and HB-2):</u> 7.5 million Btu/hour nominal heat input each; Facility space heating; No. 2 Fuel oil fired. TVA designated emission unit 22
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Conditions E5-1 through E5-6 apply to fuel burning installation 43-0011-28

E5-1. This fuel burning installation consists of two identical Cyclotherm No. 2 fuel oil fired fire-tube auxiliary heating boilers which exhaust to a common stack.

E5-2. Particulate matter emitted from this source shall not exceed **0.54** pounds per million Btu/hour of heat input.

TAPCR 1200-03-06-.02(1)

Compliance Method: Compliance assurance for the particulate standard stated in this condition is based upon the following EPA AP-42 emission factor for combustion of No. 2 fuel oil.

<u>Pollutant</u>	<u>Emission Factor (pounds per thousand gallons fuel oil)</u>
Particulate matter	3.3
Data from AP-42, Tables 1.3-1 and 1.3-2 (enclosed as Attachment 2)	

TAPCR 1200-03-009-.02(11)(e)1.(iii)

E5-3. Sulfur dioxide emitted from this source shall not exceed **5.0** pounds per million Btu/hour of heat input.

TAPCR 1200-03-14-.02(1)(a)

Compliance Method: Compliance assurance for the sulfur dioxide emission standard stated in this condition is based upon the following EPA AP-42 emission factor for combustion of No. 2 fuel oil.

<u>Pollutant</u>	<u>Emission Factor (pounds per thousand gallons fuel oil)</u>
Sulfur dioxide	71 [142S, where S = weight % sulfur in oil] (0.5 % maximum for no. 2 fuel oil)

Data from AP-42, Table 1.3-1 (enclosed as Attachment 2)

TAPCR 1200-03-09-.02(11)(e)1.(iii)

E5-4. Visible emissions from this source shall not exhibit greater than twenty percent (20%) opacity, except for an aggregate of no more than five (5) minutes in any one (1) hour period, and no more than twenty (20) minutes in any twenty-four (24) hour period. Visible emissions from this source shall be determined by Tennessee Visible Emission Evaluation Method 2, as adopted by the Tennessee Air Pollution Control Board on August 24, 1984 (aggregate count). TAPCR 1200-3-5-.01(1)

Compliance Method: Compliance with this standard shall be determined by the procedures of the Division's Opacity Matrix amended September 11, 2013 enclosed as **Attachment 1**.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

TAPCR 1200-03-05-.01(1)

E5-5. Except as provided in condition **E5-6**, only grade No. 2 fuel oil shall be burned in the auxiliary heating boilers to ensure compliance with the applicable sulfur dioxide, particulate, and opacity limitations.

E5-6. Alternate fuels may be used after assurance of compliance to the Technical Secretary with the applicable particulate and sulfur dioxide emission standards.

43-0011-29	Source Description	<p><u>Coal Handling Facility:</u> Coal unloading from barge or railcar with crushing and conveying; Three crushers with design capacity rating of 2,000 tons/ hr each; coal stockpile; coal reclaim hoppers; wet suppression control TVA designated emission units 18 and 19.</p>
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Conditions E6-1 and E6-2 apply to source 43-0011-29

E6-1. This source consists of two barge unloading stations, one rail car unloading station, three crushers, sizing screens, reclaim hoppers, and associated conveyors. Particulate emissions control measures are the enclosure of equipment and the use of wet/chemical dust suppression.

E6-2. Fugitive emissions from this facility shall be controlled as specified in Chapter 1200-03-08 of the Tennessee Air Pollution Control Regulations. Specifically, fugitive emissions shall be controlled such that there are no visible emissions beyond the property line of the property on which the emission originates, excluding legitimate malfunctions of the equipment, for more than five (5) minutes per hour or twenty (20) minutes per day.

Compliance Method:

(a) Wet/chemical suppression shall be used to control fugitive emissions from the coal screening and crushing operations and storage pile associated activities (stockout/reclaim). The wet/chemical suppression system shall be maintained, operated as needed and inspected twice per year. All inspections will be documented and the records of the inspections results maintained at the facility and kept available for inspection by the Technical Secretary or his representative.

(b) Compliance with this standard shall be determined by TVEE Method 4, as adopted by the Tennessee Air Pollution Control Board on April 16, 1986. These evaluations shall be made semiannually and the results of the evaluations shall be maintained at the facility and kept available for inspection by the Technical Secretary or his representative.

TAPCR 1200-03-08

43-0011-30	Source Description	<p><u>Ash Disposal Area for Ash Settling Pond:</u> Ash stacking and disposal area with haul road; Wet Suppression Control TVA designated emission units 20 and 21.</p>
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Condition E7-1 applies to source 43-0011-30

E7-1. Fugitive emissions from this facility shall be controlled as specified in Chapter 1200-03-08 of the Tennessee Air Pollution Control Regulations. Specifically, fugitive emissions shall be controlled such that there are no visible emissions beyond the property line of the property on which the emission originates, excluding legitimate malfunctions of the equipment, for more than five (5) minutes per hour or twenty (20) minutes per day.

Compliance Method:

(a) The application of water to the ash disposal operations (hauling/bulldozing) shall be employed as needed to control fugitive emissions.

(b) Compliance with this standard shall be determined by TVEE Method 4, as adopted by the Tennessee Air Pollution Control Board on April 16, 1986. These evaluations shall be made semiannually and the results of the evaluations shall be maintained at the facility and kept available for inspection by the Technical Secretary or his representative.

TAPCR 1200-03-08

43-0011-32	Source Description	<p><u>Combustion Turbine Electric Generating Plant:</u> Four (4) simple cycle turbines; CT Units 17-20; 4,395 million Btu/hour nominal heat input capacity at 59 degrees F (1098.7 million Btu/hour each unit) 378.4 megawatt electrical output; No. 2 fuel oil or natural gas fired; Dry low NO_x combustors for natural gas combustion and water injection for NO_x control during fuel oil combustion. TVA designated emission units 23-26 Two (2) natural gas fired fuel heaters; Heater Units NGH1 and NGH2: Heating of heat exchanger water used to vaporize condensate in natural gas feed to the combustion turbines. 13.4 million Btu/hour nominal heat input capacity (6.7 million Btu/hour each unit). TVA designated emission units 27 and 28 (heaters 1&2) NSPS, PSD</p>
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Conditions E8-1 through E8-14 apply to source 43-0011-32

- E8-1.** This fuel-burning installation shall consist of four (4) identical General Electric model PG7121EA simple-cycle combustion turbines and two (2) natural gas heaters.
- E8-2.** Except as provided in condition **E8-3**, only natural gas and #2 fuel oil shall be used as fuels for the combustion turbines. This operational restriction shall represent BACT for the combustion turbines for emissions of particulate matter, carbon monoxide, and volatile organic compounds.
- E8-3.** Alternate fuels may be used after assurance of compliance to the Technical Secretary with the applicable emission standards.
- E8-4.** Only natural gas shall be used as fuel for the natural gas heaters. Annual natural gas usage by the heaters shall not exceed **66.6** million standard cubic feet. This operational restriction shall represent BACT for the natural gas heaters for emissions of particulate matter, carbon monoxide, volatile organic compounds, and nitrogen oxides.

TAPCR 1200-03-09-.01(4)

Compliance Method: Compliance shall be assured by the recordkeeping of condition E8-12.

TAPCR 1200-03-9-.02(11)(e)1.(iii)

- E8-5.** The sulfur content of the #2 fuel oil shall not exceed **0.05** percent by weight.

TAPCR 1200-03-09-.01(4)

Compliance Method: Compliance shall be assured by the recordkeeping of condition **E8-12**.

TAPCR 1200-03-09-.02(11)(e)1.(iii)

- E8-6.** The total production for this fuel-burning installation shall not exceed **955.0** gigawatt-hours per year. No more than **316.7** gigawatt-hours of annual production shall occur during oil-fired operation, with the remainder of annual production to occur during gas-fired operation.

These operational limitations are established pursuant to Rules 1200-03-06-.01(7) and 1200-03-14-.01(3) of the Tennessee Air Pollution Control Regulations and the information contained in the application dated November 24, 1998.

Compliance Method: Compliance shall be assured by the recordkeeping of condition **E8-12**.

TAPCR 1200-03-09-.02(11)(e)1.(iii)

E8-7. Particulate matter (TSP) emitted from each combustion turbine unit of this fuel-burning installation shall not exceed the following limits (in pounds per hour):

Pollutant	Emission Limit (lb/hr)	
	while firing natural gas	while firing fuel oil
TSP	7.34	15.7

These emission limitations are established pursuant to Rule 1200-03-09-.01(4)(j) of the Tennessee Air Pollution Control Regulations.

Compliance Method: Compliance assurance for the particulate standards stated in this condition is based upon compliance with conditions **E8-2** and **E8-12** and the following AP-42 emission factors for natural gas and fuel oil combustion:

<u>Pollutant</u>	<u>Emission Factor (pounds per million Btu)</u>
Particulate matter	0.0120 (fuel oil) 0.00660 (natural gas)
Data from AP-42, Table 3.1-2a, (enclosed as Attachment 6)	

TAPCR 1200-03-09-.02(11)(e)1.(iii)

E8-8. Sulfur dioxide (SO₂), carbon monoxide (CO), and volatile organic compounds (VOC) emitted from each combustion turbine unit of this fuel-burning installation shall not exceed the following limits (in pounds per million British Thermal Units of heat input), based on operation at full capacity:

Pollutant	Emission Limits (lb/MMBTU of heat input)	
	while firing natural gas	while firing fuel oil
SO ₂	0.0006	0.048
CO	0.062	0.05
VOC	0.01	0.01

These emission limitations are established pursuant to Rule 1200-03-09-.01(4)(j) of the Tennessee Air Pollution Control Regulations.

Compliance Method: Compliance assurance for the sulfur dioxide (SO₂), carbon monoxide (CO), and volatile organic compounds (VOC) emission standards stated in this condition is based upon compliance with conditions **E8-2**, **E8-5**, and **E8-12**.

TAPCR 1200-03-09-.02(11)(e)1.(iii)

E8-9. Total nitrogen oxides (NO_x) emitted from this fuel-burning installation shall not exceed **556.0** tons per calendar year. This source shall initially be allotted **75.0** tons of NO_x emissions per calendar year during the five-month period from May 1 to September 30, in accordance with the NO_x “SIP Call” Budget for EGUs.

TAPCR 1200-03-09-.01(4)

Compliance Method: Compliance shall be assured by the monitoring of condition **E8-13**.

TAPCR 1200-03-09-.02(11)(e)1.(iii)

E8-10. Exhaust nitrogen oxides concentrations shall not exceed 15 parts per million (corrected to 15% oxygen) when burning natural gas and 42 parts per million (corrected to 15% oxygen) when burning #2 fuel oil, based on a 30-operating-day rolling average. These limitations shall represent BACT for emissions of nitrogen oxides. Nitrogen oxides concentrations during start-up and shut-down and periods of fuel switching shall not be included in determining compliance with the 30-operating-day rolling averages. Start-up is defined as the period beginning with initial ignition of fuel in the unit and ending 21 minutes after synchronization of the unit to the grid. Shut-down is defined the 25 minute period immediately prior to cessation of fuel ignition in the unit. Fuel Switching is defined as the period commencing when a turbine decreases load to accommodate the fuel switch and ends

15 minutes after the commencement of this action. The commencement and ending of this action shall be noted by the permittee on the nitrogen oxides emissions report required by Condition **E8-13** of this permit. There shall be no more than three Fuel Switching periods per calendar day. The permittee shall keep documentation of the commencement and end of each Fuel Switching period. The exclusion of Fuel Switching periods only applies to the determination of compliance with the above-specified 30-operating-day rolling average nitrogen oxides concentration limits. This exclusion does not affect the nitrogen oxides emission limits found in condition **E8-9**.

TAPCR 1200-03-09-.01(4)

Compliance Method: Compliance shall be assured by the monitoring of condition **E8-13**.

TAPCR 1200-03-09-.02(11)(e)1.(iii)

- E8-11.** Visible emissions from this fuel-burning installation shall not exhibit greater than ten percent (10%) opacity. Opacity data reduction shall be accomplished utilizing procedures outlined in the current 40 CFR 60, Appendix A, Method 9 (six-minute average).

TAPCR 1200-03-09-.01(4)

Compliance Method: Compliance with this standard shall be determined by the procedures of the Division's Opacity Matrix amended September 11, 2013 enclosed as **Attachment 1**.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

TAPCR 1200-03-09-.02(11)(e)1.(iii)

- E8-12.** A monthly log of the following information must be maintained at the source location and kept available for inspection by the Technical Secretary or his representative:

- a. #2 fuel oil usage
- b. Natural gas usage for the combustion turbines - units 17-20
- c. Natural gas usage for the natural gas heaters NGH1 and NGH2
- d. Sulfur analyses for each shipment of #2 fuel oil or certification statement by the vendor that the fuel oil sulfur content shall not exceed 0.05 percent by weight
- e. Electric generation output
- f. Hours of operation for each fuel/mode combination
- g. Maintenance inspections and repairs

This log must be retained for a period of not less than five years.

TAPCR 1200-03-09-.02(11)(e)1.(iii)

- E8-13.** Nitrogen oxides (NO_x) emissions from the combustion turbines shall be monitored using continuous emission monitoring (CEM) devices. These devices shall be installed and maintained in accordance with the requirements of 40 CFR Part 75.

TAPCR 1200-03-10-.02(1)(a) and 1200-03-30-.01

- E8-14.** This source shall comply with all applicable requirements of 40 CFR Part 60, Subpart GG - Standards of Performance for Stationary Gas Turbines, with the following exception(s):

The alternative compliance methods approved in the EPA letter dated April 6, 2000 (**Attachment 7 of this permit**).

43-0011-33	Source Description	<p>(2) Natural gas fired Heaters: Heater Units NGH3 and NGH4: Heating of heat exchanger water used to vaporize condensate in natural gas feed to the combustion turbines 1-16. 22 million Btu/hour nominal heat input capacity (11 million Btu/hour each unit). TVA designated emission units 29 and 32.</p>
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Conditions E9-1 through E9-4 apply to source 43-0011-33

E9-1. Particulate matter emitted from this source shall not exceed **0.196** pounds per million Btu/hour of heat input and shall not exceed one (1) ton per year.

TAPCR 1200-03-06-.02(1) and 1200-03-26-.02(9)(g)1 , Agreement letter dated September 2, 1999

Compliance Method: Compliance assurance for the particulate standard stated in this condition is based upon the following EPA AP-42 emission factor for combustion of natural gas.

<u>Pollutant</u>	<u>Emission Factor (pounds per million cubic feet)</u>
Particulate matter	7.6
Data from AP-42, Table 1.4-2 (enclosed as Attachment 2)	

TAPCR 1200-03-09-.02(11)(e)1.(iii)

E9-2. Sulfur dioxide (SO₂) emitted from this source shall not exceed **5.0** pounds per million Btu/hour of heat input (one-hour average).

TAPCR 1200-03-14-.02(2)(a)

Compliance Method: Compliance assurance for the sulfur dioxide emission standard stated in this condition is based upon the following EPA AP-42 emission factor for combustion of natural gas.

<u>Pollutant</u>	<u>Emission Factor (pounds per million cubic feet)</u>
Sulfur dioxide	0.6
Data from AP-42, Table 1.4-2 (enclosed as Attachment 2)	

TAPCR 1200-03-09-.02(11)(e)1.(iii)

E9-3. Visible emissions from this fuel-burning installation shall not exhibit greater than twenty percent (20%) opacity. Opacity data reduction shall be accomplished utilizing procedures outlined in the current 40 CFR 60, Appendix A, Method 9 (six-minute average).

TAPCR 1200-03-05-.03(6)

Compliance Method: Compliance with this standard shall be determined by the procedures of the Division's Opacity Matrix amended September 11, 2013 enclosed as **Attachment 1**.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

TAPCR 1200-03-09-.02(11)(e)1.(iii)

E9-4. Only natural gas shall be burned in the heaters to ensure compliance with the applicable sulfur dioxide, particulate, and opacity limitations.

43-0011-34	Source Description	Three Emergency Fire Pump Engines # 1, 2, and 3 Cummins Model N-855P250 diesel engines rated at 220 hp each
		TVA designated stacks 33, 34, and 35

Conditions E10-1 through E10-16 apply to source 43-0011-34

E10-1. The stated design power output for each of these units is 220 hp.

E10-2. Particulate matter (pm) emitted from this source shall not exceed 0.6 lb/mmbtu of heat input (2.8 lb/hr combined total).
TAPCR 1200-03-06-.02(2)

Compliance Method: Compliance assurance for the pm emission standard stated in this condition is based upon the following EPA AP-42 emission factor for Diesel Engines.

<u>Pollutant</u>	<u>Emission Factor (pounds per horsepower-hour)</u>
Particulate Matter	0.0022
Data from AP-42, Table 3.3-1 (Emission Factors for Uncontrolled Diesel Industrial Engines)	

E10-3. Sulfur dioxide (SO₂) emitted from this source shall not exceed 1.5 lbs /hr for all three engines, combined total.

TAPCR 1200-03-14-.03(5)

Compliance Method: Compliance assurance for the sulfur dioxide emission standard stated in this condition is based upon the following EPA AP-42 emission factor for Diesel Engines.

<u>Pollutant</u>	<u>Emission Factor (pounds per hp/hr)</u>
Sulfur dioxide	0.00205
Data from AP-42, Table 3.3-1 (Emission Factors for Uncontrolled Diesel Industrial Engines)	

E10-4. Carbon Monoxide emitted from this source shall not exceed 1.1 tons per consecutive 12-month period for all three engines, combined total.

TAPCR 1200-03-07-.07(2)

Compliance Method: Compliance assurance for the carbon monoxide emission standard stated in this condition is based upon the following EPA AP-42 emission factor for Diesel Engines.

<u>Pollutant</u>	<u>Emission Factor (pounds per hp/hr)</u>
Carbon Monoxide	0.00668
Data from AP-42, Table 3.3-1 (Emission Factors for Uncontrolled Diesel Industrial Engines)	

E10-5. Nitrogen oxides emitted from this source shall not exceed 5.2 tons per consecutive 12-month period for all three engines, combined total.

TAPCR 1200-03-07-.07(2)

Compliance Method: Compliance assurance for the nitrogen oxides emission standard stated in this condition is based upon the following EPA AP-42 emission factor for Diesel Engines.

<u>Pollutant</u>	<u>Emission Factor (pounds per hp/hr)</u>
Nitrogen Oxides	0.031
Data from AP-42, Table 3.3-1 (Emission Factors for Uncontrolled Diesel Industrial Engines)	

E10-6. Visible emissions from this source shall not exhibit greater than twenty percent (20%) opacity, except for one (1) six-minute period in any one (1) hour period and for no more than four (4) six-minute periods in any twenty-four (24) hour period. Visible emissions from this source shall be determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average). TAPCR 1200-03-05-.01(1) and 1200-03-05-.03(6)

Compliance with this standard shall be determined by the procedures of the Division's Opacity Matrix amended September 11, 2013 enclosed as **Attachment 1**.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

See condition **E2-2** for sources using the opacity matrix to demonstrate compliance.

E10-7. Only diesel fuel (or #2 fuel oil) shall be combusted in these units.

E10-8. The sulfur content of the diesel fuel used in these units shall not exceed **0.5** weight percent.
TAPCR 1200-03-14-.03(5)

E10-9. Pursuant to 40 CFR 63.6595(a), no later than May 3, 2013, the permittee must comply with the applicable provisions of 40 CFR 63, Subpart ZZZZ —National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. This includes, but is not limited to, conditions E10-10 through E10-16 of this permit.

E10-10. Pursuant to 40 CFR §63.6603(a)(for area sources) or §63.6602 (for major sources), for each emergency stationary CI RICE, the permittee must meet the following requirements:

- (a) Change oil and filter every 500 hours of operation or annually, whichever comes first (sources have the option to utilize an oil analysis program as described in 40 CFR §63.6625(i) in order to extend the specified oil change requirement);
- (b) Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first; and
- (c) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

E10-11. Pursuant to 40 CFR §§63.6625(e) and 63.6640(a), for each existing emergency stationary RICE, the permittee must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related (written) operation and maintenance instructions or develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions:

E10-12. Pursuant to 40 CFR §63.6625(f), for each existing emergency stationary RICE, the permittee must install a non-resettable hour meter if one is not already installed.

E10-13. Pursuant to 40 CFR §63.6640(f), the permittee must operate each existing emergency stationary RICE according to the requirements in paragraphs (a) through (c) of this condition. Any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (a) through (c) of this condition, is prohibited.

- (a) There is no time limit on the use of emergency stationary RICE in emergency situations.
- (b) Maintenance checks and readiness testing of such units is limited to 100 hours per year.
- (c) The permittee may operate each emergency stationary RICE up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

E10-14. Pursuant to 40 CFR §63.6655(e), for an existing stationary emergency RICE, the permittee must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that the permittee operated and maintained the stationary RICE and after-treatment control device (if any) according to the permittee’s own maintenance plan.

E10-15. Pursuant to 40 CFR §63.6655(f), for each existing emergency stationary RICE, the permittee must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The permittee must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. The permittee shall maintain a monthly log of operating hours for each existing emergency stationary RICE. The permittee shall calculate the operating hours during all intervals of twelve consecutive months. The permittee shall maintain the following log format or an alternative format which readily provides the same required information.

Log for Each Emergency Stationary RICE

Month, Year	Emergency Operation (hr/mon)	Emergency Operation (hr/12 consecutive months)	Non-Emergency Operation (hr/mon)	Non-Emergency Operation (hr/12 consecutive month)	Maintenance & Readiness Testing plus Non-Emer. Operation (hr/mon)	Maintenance & Readiness Testing plus Non-Emer. Operation (hr/12 consecutive month)
January						
February						
Etc.						
December						

E10-16. Pursuant to the September 6, 1995 memorandum of John S. Seitz, Director, Office of Air Quality Planning and Standards, 500 hours per year is an appropriate default assumption for estimating the number of hours that an emergency generator could be expected to operate under worst-case conditions.

Therefore, a “default” operating time of 500 hours per consecutive 12-month period for each individual unit is specified for fee purposes and for the purpose of establishing a "potential to emit" value for this source facility for the pollutants of concern. In the event that any unit operates beyond this time duration, the total annual hours of operation shall be reported to the Technical Secretary by the end of the calendar year. The annual hours of operation, fuel used, and actual emissions from this unit shall be determined. Based on the actual plantwide emissions for the pollutants of concern, the facility classification will be re-evaluated as to PSD Major Source Status.

43-0011-36	Source Description	Emergency Telecom Diesel Engine Cummins Model 4BT3.9-G4 diesel engine rated at 90 hp TVA designated stack 36
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Conditions E11-1 through E11-16 apply to source 43-0011-36

E11-1 (MM1). The stated design power output for this unit is 90 hp. This source is subject to the requirements of 40 CFR part 63 Subpart ZZZZ and TAPCR 1200-03-09-.03(8). TAPCR 1200-03-09-.01(1)(d) and the application dated July 30, 2015.

E11-2 (MM1). Particulate matter (pm) emitted from this source shall not exceed 0.6 lb/MMBtu of heat input (0.044 lb/hr total).

Pollutant **Emission Factor (grams per horsepower-hour)**

Particulate Matter 0.22
 Data from 40 CFR Part 89 Tier 2 (Table 1 – Emission Standards)

TAPCR 1200-03-06-.02(2)

Compliance Method: Compliance with this condition is ensured by compliance with **Conditions E11-1 and E11-7** of this permit and the manufacturer's certification of compliance with 40 CFR §89.112.

E11-3 (MM1). Sulfur dioxide (SO₂) emitted from this source shall not exceed 0.185 lbs/hr.

Pollutant **Emission Factor (pounds per hp/hr)**

Sulfur dioxide 0.00205
 Data from AP-42, Table 3.3-1 (Emission Factors for Uncontrolled Diesel Industrial Engines)

TAPCR 1200-03-14-.03(5)

Compliance Method: Compliance with this condition is ensured by compliance with **Conditions E11-1, E11-7, and E11-8** of this permit and AP-42, Chapter 3, Section 3, emission factors.

E11-4 (MM1). Carbon Monoxide emitted from this source shall not exceed 0.18 tons per consecutive 12-month period.

Pollutant **Emission Factor (grams per horsepower-hour)**

Carbon Monoxide 3.73
 Data from 40 CFR Part 89 Tier 2 (Table 1 – Emission Standards)

TAPCR 1200-03-07-.07(2)

Compliance Method: Compliance with this condition is ensured by compliance with **Conditions E11-1 and E11-7** of this permit and the manufacturer's certification of compliance with 40 CFR §89.112.

E11-5 (MM1). Nitrogen oxides emitted from this source shall not exceed 0.28 tons per consecutive 12-month period.

Pollutant **Emission Factor (grams per horsepower-hour)**

NMHC+NO_x 5.60
 Data from 40 CFR Part 89 Tier 2 (Table 1 – Emission Standards)

TAPCR 1200-03-07-.07(2)

Compliance Method: Compliance with this condition is ensured by compliance with **Conditions E11-1 and E11-7** of this permit and the manufacturer's certification of compliance with 40 CFR §89.112.

E11-6 (MM1). Visible emissions from this source shall not exhibit greater than twenty percent (20%) opacity, except for one (1) six-minute period in any one (1) hour period and for no more than four (4) six-minute periods in any twenty-four (24) hour period. Visible emissions from this source shall be determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average). TAPCR 1200-03-05-.01(1) and 1200-03-05-.03(6)

Compliance Method: The permittee shall assure compliance with the opacity standard by utilizing the opacity matrix dated June 18, 1996 that is enclosed as Attachment 1.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

See **Condition E2-2** for sources using the opacity matrix to demonstrate compliance.

E11-7 (MM1). Only diesel fuel (or #2 fuel oil) shall be combusted in this unit. TAPCR 1200-03-09-.01(1)(d)

- E11-8 (MM1).** The sulfur content of the diesel fuel used in this unit shall not exceed 0.5 weight percent. TAPCR 1200-03-14-.03(5)
- E11-9 (MM1).** Pursuant to 40 CFR 63.6595(a), the permittee must comply with the applicable provisions of 40 CFR 63, Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. This includes, but is not limited to, **Conditions E11-10 through E11-16** of this permit.
- E11-10 (MM1).** Pursuant to 40 CFR §63.6603(a)(for area sources) or §63.6602 (for major sources), for each emergency stationary CI RICE, the permittee must meet the following requirements:
- (a) Change oil and filter every 500 hours of operation or annually, whichever comes first (sources have the option to utilize an oil analysis program as described in 40 CFR §63.6625(i) in order to extend the specified oil change requirement);
 - (b) Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first; and
 - (c) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.
- E11-11 (MM1).** Pursuant to 40 CFR §§63.6625(e) and 63.6640(a), for each existing emergency stationary RICE, the permittee must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related (written) operation and maintenance instructions or develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions:
- E11-12 (MM1).** Pursuant to 40 CFR §63.6625(f), for the emergency stationary RICE, the permittee must install a non-resettable hour meter if one is not already installed.
- E11-13 (MM1).** Pursuant to 40 CFR §63.6640(f), the permittee must operate the emergency stationary RICE according to the requirements in paragraphs (a) through (c) of this condition. Any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (a) through (c) of this condition, is prohibited.
- (a) There is no time limit on the use of emergency stationary RICE in emergency situations.
 - (b) Maintenance checks and readiness testing of such units is limited to 100 hours per year.
 - (c) The permittee may operate the stationary RICE up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.
- E11-14 (MM1).** Pursuant to 40 CFR §63.6655(e), for an existing stationary emergency RICE, the permittee must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that the permittee operated and maintained the stationary RICE and after-treatment control device (if any) according to the permittee's own maintenance plan.
- E11-15 (MM1).** Pursuant to 40 CFR §63.6655(f), for each existing emergency stationary RICE, the permittee must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The permittee must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. The permittee shall maintain a monthly log of operating hours for the emergency stationary RICE. The permittee shall calculate the operating hours during all intervals of twelve consecutive months. The permittee shall maintain the following log format or an alternative format which readily provides the same required information.

Log for Emergency Stationary RICE

Month, Year	Emergency Operation (hr/mon)	Emergency Operation (hr/12 consecutive months)	Non-Emergency Operation (hr/mon)	Non-Emergency Operation (hr/12 consecutive month)	Maintenance & Readiness Testing plus Non-Emer. Operation (hr/mon)	Maintenance & Readiness Testing plus Non-Emer. Operation (hr/12 consecutive month)
January						
February						
Etc.						
December						

E11-16 (MM1). Pursuant to the September 6, 1995 memorandum of John S. Seitz, Director, Office of Air Quality Planning and Standards, 500 hours per year is an appropriate default assumption for estimating the number of hours that an emergency generator could be expected to operate under worst-case conditions.

Therefore, a “default” operating time of 500 hours per consecutive 12-month period for each individual unit is specified for fee purposes and for the purpose of establishing a "potential to emit" value for this source facility for the pollutants of concern. In the event that any unit operates beyond this time duration, the total annual hours of operation shall be reported to the Technical Secretary by the end of the calendar year. The annual hours of operation, fuel used, and actual emissions from this unit shall be determined. Based on the actual plantwide emissions for the pollutants of concern, the facility classification will be re-evaluated as to PSD Major Source Status.

END OF PERMIT NUMBER: 561210

ATTACHMENT 1

**OPACITY MATRIX DECISION TREE FOR VISIBLE EMISSION
EVALUATION BY TVEE METHODS 1 AND 2 AND EPA METHOD 9
AMENDED SEPTEMBER 11, 2013**

**Decision Tree PM for Opacity from
Nontraditional Sources (Roads and Parking Areas)
Utilizing TVEE Method 1**

Notes:

The use of Tennessee Visible Emission Evaluation (TVEE) Method 1 is only applicable where the use of the method is specified as a permit condition.

PM = Periodic Monitoring required by 1200-03-09-.02(11)(e)(1)(iii).

This Decision Tree outlines the criteria by which major sources can meet the PM requirements of Title V for demonstrating compliance with the visible emissions standard for nontraditional sources (roads and parking areas). It is not intended to determine compliance requirements for EPA's Compliance Assurance Monitoring (CAM) Rule (formerly referred to as Enhanced Monitoring – Proposed 40 CFR 64).

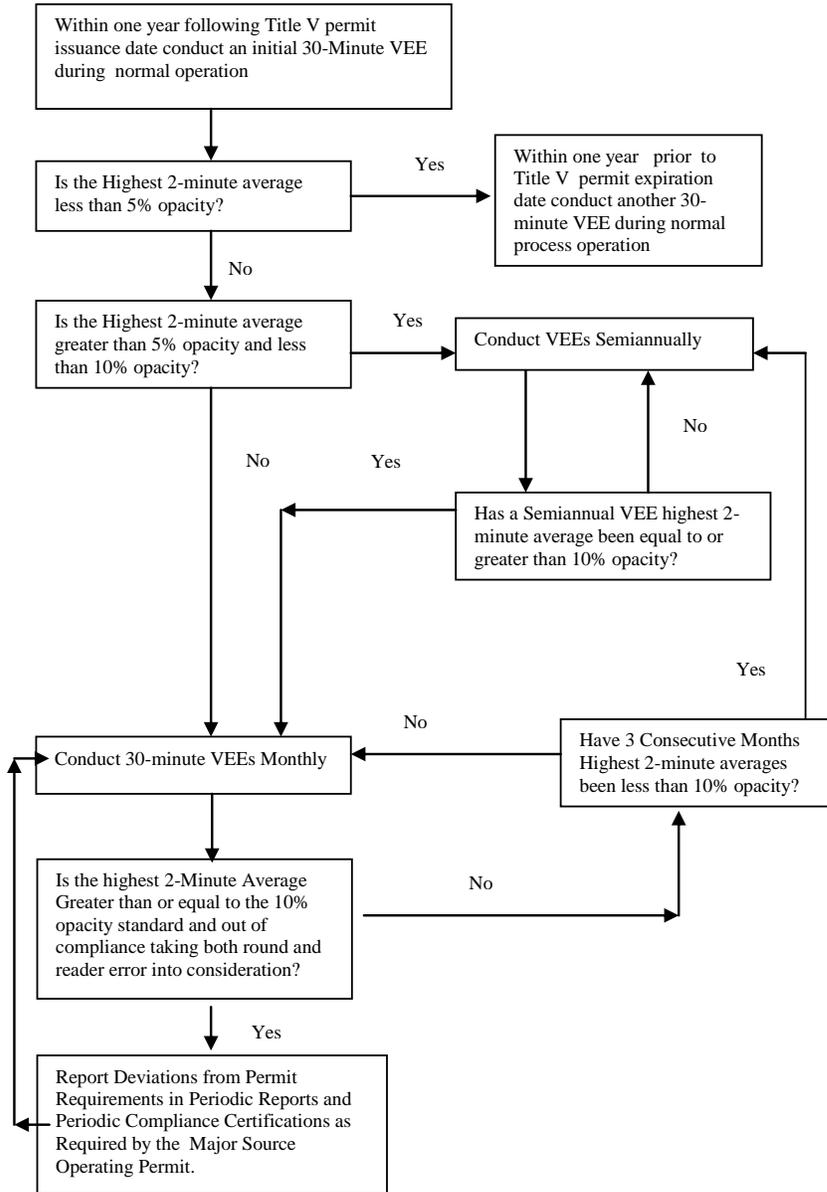
Visible Emissions Evaluations (VEEs) are to be conducted utilizing TVEE Method 1. The observer must be properly certified according to criteria specified in TVEE Method 1 to conduct Method 1 evaluations.

Initial observations are to be repeated within 90 days of startup of a modified source if a new construction permit is issued for modification of the source.

A VEE conducted by TDAPC personnel after the Title V permit is issued will also constitute an initial reading.

Reader Error
For TVEE Method 1, the TDAPC declares non-compliance when the highest two-minute average exceeds the standard plus 10% opacity for sources having this standard applied prior to August 24, 1984 or 8.8% for sources having this standard applied on or after August 24, 1984.

Dated June 18, 1996
Amended September 11, 2013



**Decision Tree PM for Opacity for
Sources Subject to Rule 1200-03-05-.01
Utilizing TVEE Method 2**

Notes:

PM = Periodic Monitoring required by 1200-03-09-.02(11)(e)(iii).

This Decision Tree outlines the criteria by which major sources can meet the periodic monitoring and testing requirements of Title V for demonstrating compliance with the visible emission standard in Rule 1200-03-05-.01. It is not intended to determine compliance requirements for EPA's Compliance Assurance Monitoring (CAM) Rule (formerly referred to as Enhanced Monitoring – Proposed 40 CFR 64).

Examine each emission unit using this Decision Tree to determine the PMT required.

Use of continuous emission monitoring systems eliminates the need to do any additional periodic monitoring.

Visible Emission Evaluations (VEEs) are to be conducted utilizing Tennessee Visible Emission Evaluation Method 2. The observer must be properly certified according to the criteria specified in EPA Method 9 to conduct TVEE Method 2 evaluations.

Typical Pollutants
Particulates, VOC, CO, SO₂, NO_x, HCl, HF, HBr, Ammonia, and Methane.

Initial observations are to be repeated within 90 days of startup of a modified source, if a new construction permit is issued for modification of the source.

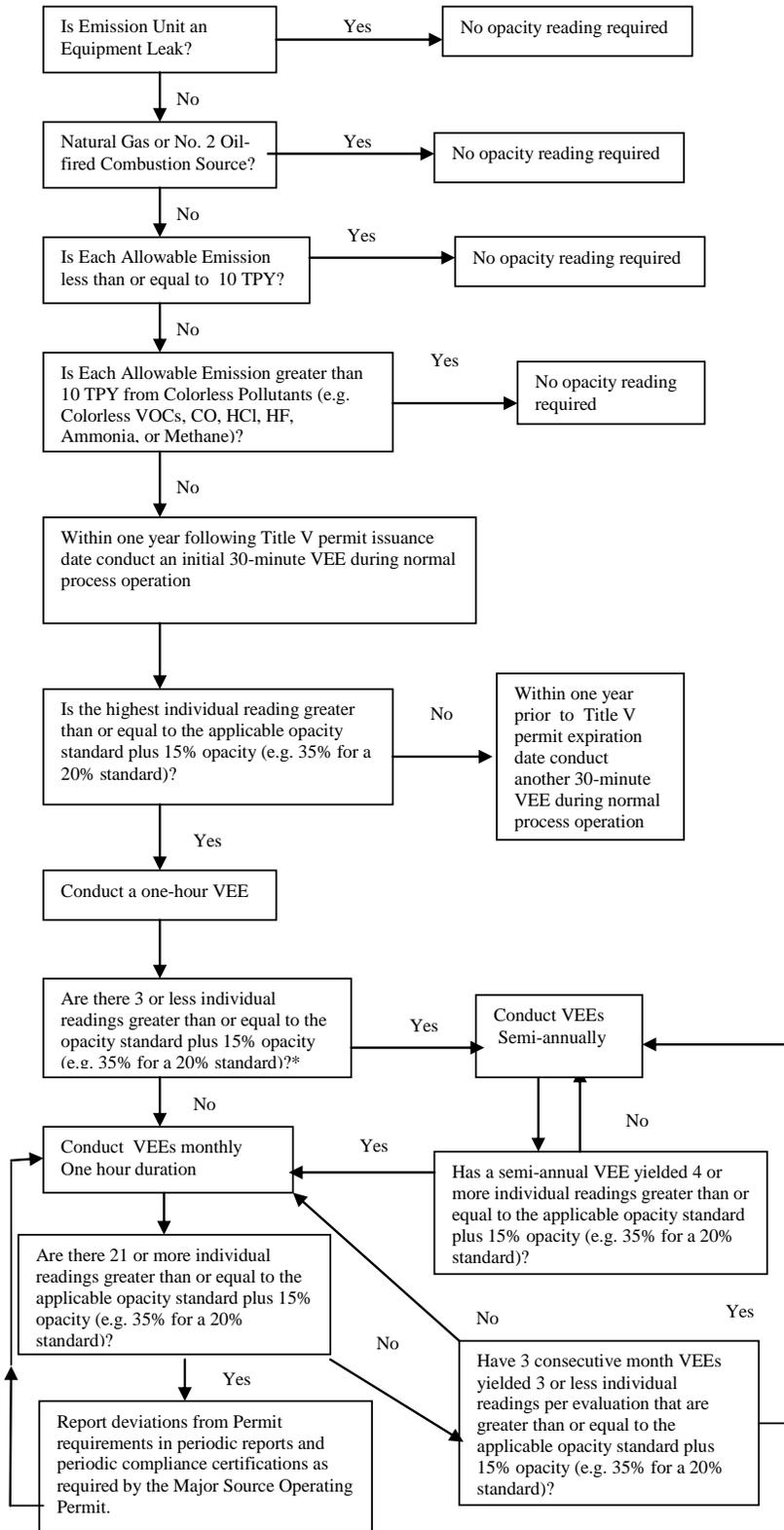
A VEE conducted by TAPCD personnel after the Title V permit is issued will also constitute an initial reading.

Reader Error
TVEE Method 2: The TAPCD declares non-compliance when 21 observations are read at the standard plus 15% opacity (e.g. 35% for a 20% standard).

*The rationale for this is the fact that Rule 1200-03-05-.01 allows for an exemption of 5 minutes (20 readings) per hour and up to 20 minutes (80 readings) per day. With 4 or more excessive individual readings per hour the possibility of a daily exceedance exists.

Note: A company could mutually agree to have all of its sources regulated by EPA Method 9. Caution: Agreement to use Method 9 could potentially place some sources in non-compliance with visible emission standards. Please be sure before you agree.

Dated June 18, 1996
Amended September 11, 2013



Decision Tree PM for Opacity for Sources Utilizing EPA Method 9*

Notes:

PM = Periodic Monitoring required by 1200-03-09-.02(11)(e)(iii).

This Decision Tree outlines the criteria by which major sources can meet the periodic monitoring and testing requirements of Title V for demonstrating compliance with the visible emission standards set forth in the permit. It is not intended to determine compliance requirements for EPA's Compliance Assurance Monitoring (CAM) Rule (formerly referred to as Enhanced Monitoring – Proposed 40 CFR 64).

Examine each emission unit using this Decision Tree to determine the PM required.*

Use of continuous emission monitoring systems eliminates the need to do any additional periodic monitoring.

Visible Emission Evaluations (VEEs) are to be conducted utilizing EPA Method 9. The observer must be properly certified to conduct valid evaluations.

Typical Pollutants
Particulates, VOC, CO, SO₂, NO_x, HCl, HF, HBr, Ammonia, and Methane.

Initial observations are to be repeated within 90 days of startup of a modified source, if a new construction permit is issued for modification of the source.

A VEE conducted by TAPCD personnel after the Title V permit is issued will also constitute an initial reading.

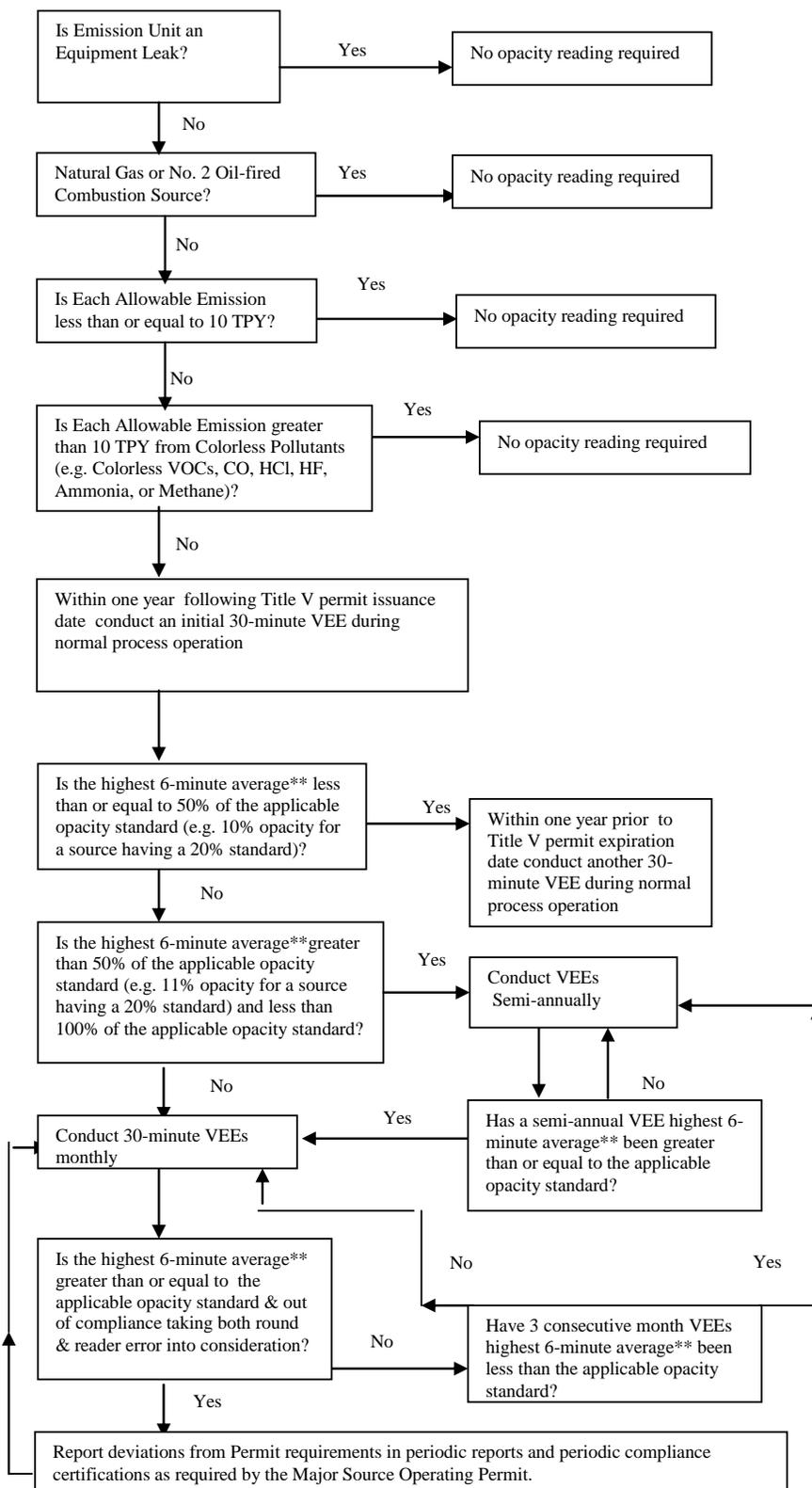
Reader Error
EPA Method 9, Non-NSPS or NESHAPS stipulated opacity standards:
The TAPCD guidance is to declare non-compliance when the highest six-minute average** exceeds the standard plus 6.8% opacity (e.g. 26.8% for a 20% standard).

EPA Method 9, NSPS or NESHAPS stipulate opacity standards:
EPA guidance is to allow only engineering round. No allowance for reader error is given.

*Not applicable to Asbestos manufacturing subject to 40 CFR 61.142

**Or second highest six-minute average, if the source has an exemption period stipulated in either the regulations or in the permit.

Dated June 18, 1996
Amended September 11, 2013



ATTACHMENT 2

**AP-42 Emission Factors for Fuel Oil and Natural Gas Combustion
Tables 1.3-1, 1.3-2, 1.3-3, 1.4-1, and 1.4-2**

Table 1.3-1. CRITERIA POLLUTANT EMISSION FACTORS FOR FUEL OIL COMBUSTION^a

Firing Configuration (SCC) ^a	SO ₂ ^b		SO ₃ ^c		NO _x ^d		CO ^e		Filterable PM ^f	
	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING
Boilers > 100 Million Btu/hr										
No. 6 oil fired, normal firing (1-01-004-01), (1-02-004-01), (1-03-004-01)	157S	A	5.7S	C	47	A	5	A	9.19(S)+3.22	A
No. 6 oil fired, normal firing, low NO _x burner (1-01-004-01), (1-02-004-01)	157S	A	5.7S	C	40	B	5	A	9.19(S)+3.22	A
No. 6 oil fired, tangential firing, (1-01-004-04)	157S	A	5.7S	C	32	A	5	A	9.19(S)+3.22	A
No. 6 oil fired, tangential firing, low NO _x burner (1-01-004-04)	157S	A	5.7S	C	26	E	5	A	9.19(S)+3.22	A
No. 5 oil fired, normal firing (1-01-004-05), (1-02-004-04)	157S	A	5.7S	C	47	B	5	A	10	B
No. 5 oil fired, tangential firing (1-01-004-06)	157S	A	5.7S	C	32	B	5	A	10	B
No. 4 oil fired, normal firing (1-01-005-04), (1-02-005-04)	150S	A	5.7S	C	47	B	5	A	7	B
No. 4 oil fired, tangential firing (1-01-005-05)	150S	A	5.7S	C	32	B	5	A	7	B
No. 2 oil fired (1-01-005-01), (1-02-005-01), (1-03-005-01)	142S ^h	A	5.7S	C	24	D	5	A	2	A
No. 2 oil fired, LNB/FGR (1-01-005-01), (1-02-005-01), (1-03-005-01)	142S ^h	A	5.7S	A	10	D	5	A	2	A

Table 1.3-1. (cont.)

Firing Configuration (SCC) ^a	SO ₂ ^b		SO ₃ ^c		NO _x ^d		CO ^e		Filterable PM ^f	
	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING
Boilers < 100 Million Btu/hr										
No. 6 oil fired (1-02-004-02/03) (1-03-004-02/03)	157S	A	2S	A	55	A	5	A	9.19(S)+3.22 ^g	B
No. 5 oil fired (1-03-004-04)	157S	A	2S	A	55	A	5	A	10 ^h	A
No. 4 oil fired (1-03-005-04)	150S	A	2S	A	20	A	5	A	7	B
Distillate oil fired (1-02-005-02/03) (1-03-005-02/03)	142S	A	2S	A	20	A	5	A	2	A
Residential furnace (A2104004/A2104011)	142S	A	2S	A	18	A	5	A	0.4 ^g	B

a To convert from lb/103 gal to kg/103 L, multiply by 0.120. SCC = Source Classification Code.
b References 1-2,6-9,14,56-60. S indicates that the weight % of sulfur in the oil should be multiplied by the value given. For example, if the fuel is 1% sulfur, then S = 1.
c References 1-2,6-8,16,57-60. S indicates that the weight % of sulfur in the oil should be multiplied by the value given. For example, if the fuel is 1% sulfur, then S = 1.
d References 6-7,15,19,22,56-62. Expressed as NO₂. Test results indicate that at least 95% by weight of NO_x is NO for all boiler types except residential furnaces, where about 75% is NO. For utility vertical fired boilers use 105 lb/103 gal at full load and normal (>15%) excess air. Nitrogen oxides emissions from residual oil combustion in industrial and commercial boilers are related to fuel nitrogen content, estimated by the following empirical relationship: lb NO₂/103 gal = 20.54 + 104.39(N), where N is the weight % of nitrogen in the oil. For example, if the fuel is 1% nitrogen, then N = 1.
e References 6-8,14,17-19,56-61. CO emissions may increase by factors of 10 to 100 if the unit is improperly operated or not well maintained.
f References 6-8,10,13-15,56-60,62-63. Filterable PM is that particulate collected on or prior to the filter of an EPA Method 5 (or equivalent) sampling train. Particulate emission factors for residual oil combustion are, on average, a function of fuel oil sulfur content where S is the weight % of sulfur in oil. For example, if fuel oil is 1% sulfur, then S = 1.
g Based on data from new burner designs. Pre-1970's burner designs may emit filterable PM as high as 3.0 lb/103 gal.
h The SO₂ emission factor for both no. 2 oil fired and for no. 2 oil fired with LNB/FGR, is 142S, not 157S. Errata dated April 28, 2000. Section corrected May 2010.
i The PM factors for No.6 and No. 5 fuel were reversed. Errata dated April 28, 2000. Section corrected May 2010.

Table 1.3-2. CONDENSABLE PARTICULATE MATTER EMISSION FACTORS FOR OIL COMBUSTION^a

Firing Configuration ^b (SCC)	Controls	CPM - TOT ^{c,d}		CPM - IOR ^{c,d}		CPM - ORG ^{c,d}	
		Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING
No. 2 oil fired (1-01-005-01, 1-02-005-01, 1-03-005-01)	All controls, or uncontrolled	1.3 ^{d,e}	D	65% of CPM-TOT emission factor ^c	D	35% of CPM-TOT emission factor ^c	D
No. 6 oil fired (1-01-004-01/04, 1-02-004-01, 1-03-004-01)	All controls, or uncontrolled	1.5 ^f	D	85% of CPM-TOT emission factor ^d	E	15% of CPM-TOT emission factor ^d	E

^a All condensable PM is assumed to be less than 1.0 micron in diameter.

^b No data are available for numbers 3, 4, and 5 oil. For number 3 oil, use the factors provided for number 2 oil. For numbers 4 and 5 oil, use the factors provided for number 6 oil.

^c CPM-TOT = total condensable particulate matter.

CPM-IOR = inorganic condensable particulate matter.

CPM-ORG = organic condensable particulate matter.

^d To convert to lb/MMBtu of No. 2 oil, divide by 140 MMBtu/10³ gal. To convert to lb/MMBtu of No. 6 oil, divide by 150 MMBtu/10³ gal.

^e References: 76-78.

^f References: 79-82.

Table 1.3-3. EMISSION FACTORS FOR TOTAL ORGANIC COMPOUNDS (TOC), METHANE, AND NONMETHANE TOC (NMTOC) FROM UNCONTROLLED FUEL OIL COMBUSTION^a

EMISSION FACTOR RATING: A

Firing Configuration (SCC)	TOC ^b Emission Factor (lb/10 ³ gal)	Methane ^b Emission Factor (lb/10 ³ gal)	NMTOC ^b Emission Factor (lb/10 ³ gal)
Utility boilers			
No. 6 oil fired, normal firing (1-01-004-01)	1.04	0.28	0.76
No. 6 oil fired, tangential firing (1-01-004-04)	1.04	0.28	0.76
No. 5 oil fired, normal firing (1-01-004-05)	1.04	0.28	0.76
No. 5 oil fired, tangential firing (1-01-004-06)	1.04	0.28	0.76
No. 4 oil fired, normal firing (1-01-005-04)	1.04	0.28	0.76
No. 4 oil fired, tangential firing (1-01-005-05)	1.04	0.28	0.76
Industrial boilers			
No. 6 oil fired (1-02-004-01/02/03)	1.28	1.00	0.28
No. 5 oil fired (1-02-004-04)	1.28	1.00	0.28
Distillate oil fired (1-02-005-01/02/03)	0.252	0.052	0.2
No. 4 oil fired (1-02-005-04)	0.252	0.052	0.2
Commercial/institutional/residential combustors			
No. 6 oil fired (1-03-004-01/02/03)	1.605	0.475	1.13
No. 5 oil fired (1-03-004-04)	1.605	0.475	1.13
Distillate oil fired (1-03-005-01/02/03)	0.556	0.216	0.34
No. 4 oil fired (1-03-005-04)	0.556	0.216	0.34
Residential furnace (A2104004/A2104011)	2.493	1.78	0.713

^a To convert from lb/103 gal to kg/103 L, multiply by 0.12. SCC = Source Classification Code.

^b References 29-32. Volatile organic compound emissions can increase by several orders of magnitude if the boiler is improperly operated or is not well maintained.

Table 1.4-1. EMISSION FACTORS FOR NITROGEN OXIDES (NO_x) AND CARBON MONOXIDE (CO)
FROM NATURAL GAS COMBUSTION^a

Combustor Type (MMBtu/hr Heat Input) [SCC]	NO _x ^b		CO	
	Emission Factor (lb/10 ⁶ scf)	Emission Factor Rating	Emission Factor (lb/10 ⁶ scf)	Emission Factor Rating
Large Wall-Fired Boilers (>100) [1-01-006-01, 1-02-006-01, 1-03-006-01]				
Uncontrolled (Pre-NSPS) ^c	280	A	84	B
Uncontrolled (Post-NSPS) ^c	190	A	84	B
Controlled - Low NO _x burners	140	A	84	B
Controlled - Flue gas recirculation	100	D	84	B
Small Boilers (<100) [1-01-006-02, 1-02-006-02, 1-03-006-02, 1-03-006-03]				
Uncontrolled	100	B	84	B
Controlled - Low NO _x burners	50	D	84	B
Controlled - Low NO _x burners/Flue gas recirculation	32	C	84	B
Tangential-Fired Boilers (All Sizes) [1-01-006-04]				
Uncontrolled	170	A	24	C
Controlled - Flue gas recirculation	76	D	98	D
Residential Furnaces (<0.3) [No SCC]				
Uncontrolled	94	B	40	B

^a Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. To convert from lb/10⁶ scf to kg/10⁶ m³, multiply by 16. Emission factors are based on an average natural gas higher heating value of 1,020 Btu/scf. To convert from lb/10⁶ scf to lb/MMBtu, divide by 1,020. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. SCC = Source Classification Code. ND = no data. NA = not applicable.

^b Expressed as NO_x. For large and small wall fired boilers with SNCR control, apply a 24 percent reduction to the appropriate NO_x emission factor. For tangential-fired boilers with SNCR control, apply a 13 percent reduction to the appropriate NO_x emission factor.

^c NSPS = New Source Performance Standard as defined in 40 CFR 60 Subparts D and Db. Post-NSPS units are boilers with greater than 250 MMBtu/hr of heat input that commenced construction modification, or reconstruction after August 17, 1971, and units with heat input capacities between 100 and 250 MMBtu/hr that commenced construction modification, or reconstruction after June 19, 1984.

TABLE 1.4-2. EMISSION FACTORS FOR CRITERIA POLLUTANTS AND GREENHOUSE GASES FROM NATURAL GAS COMBUSTION^a

Pollutant	Emission Factor (lb/10 ⁶ scf)	Emission Factor Rating
CO ₂ ^b	120,000	A
Lead	0.0005	D
N ₂ O (Uncontrolled)	2.2	E
N ₂ O (Controlled-low-NO _x burner)	0.64	E
PM (Total) ^c	7.6	D
PM (Condensable) ^c	5.7	D
PM (Filterable) ^c	1.9	B
SO ₂ ^d	0.6	A
TOC	11	B
Methane	2.3	B
VOC	5.5	C

^a Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. Data are for all natural gas combustion sources. To convert from lb/10⁶ scf to kg/10⁶ m³, multiply by 16. To convert from lb/10⁶ scf to lb/MMBtu, divide by 1,020. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. TOC = Total Organic Compounds. VOC = Volatile Organic Compounds.

^b Based on approximately 100% conversion of fuel carbon to CO₂. CO₂[lb/10⁶ scf] = (3.67) (CON) (C)(D), where CON = fractional conversion of fuel carbon to CO₂, C = carbon content of fuel by weight (0.76), and D = density of fuel, 4.2x10⁴ lb/10⁶ scf.

^c All PM (total, condensable, and filterable) is assumed to be less than 1.0 micrometer in diameter. Therefore, the PM emission factors presented here may be used to estimate PM₁₀, PM_{2.5} or PM₁ emissions. Total PM is the sum of the filterable PM and condensable PM. Condensable PM is the particulate matter collected using EPA Method 202 (or equivalent). Filterable PM is the particulate matter collected on, or prior to, the filter of an EPA Method 5 (or equivalent) sampling train.

^d Based on 100% conversion of fuel sulfur to SO₂.

Assumes sulfur content is natural gas of 2,000 grains/10⁶ scf. The SO₂ emission factor in this table can be converted to other natural gas sulfur contents by multiplying the SO₂ emission factor by the ratio of the site-specific sulfur content (grains/10⁶ scf) to 2,000 grains/10⁶ scf.

ATTACHMENT 3

Acid Rain Draft Permit for TVA - Johnsonville Fossil Plant

1) Statement of Basis

Statutory and Regulatory Authorities: In accordance with Tennessee Code Annotated 68-201-105 and 4-5-202 and Titles IV and V of the Clean Air Act, the Tennessee Air Pollution Control Board and Tennessee Department of Environment and Conservation issue this permit pursuant to Chapter 1200-3-30 and Paragraph 1200-3-9-.02(11) of the Tennessee Air Pollution Control Regulations and 40 CFR Part 76 of the Federal Regulations.

2) SO₂ Allowance Allocations and NO_x Requirements for each affected unit

		2012	2013	2014	2015	2016
Unit 1	SO ₂ allowances, under Tables 2, 3, or 4 of 40 CFR part 73.	3364*	3364*	3364*	3364*	3364*
	NO _x limit	<p>Pursuant to 40 CFR Part 76, the Tennessee Department of Environment and Conservation approves five (5) NO_x emissions averaging plans for this unit. Each plan is effective for one calendar year for the years 2012, 2013, 2014, 2015, and 2016. Under each plan, this unit's NO_x emissions shall not exceed the annual average alternative contemporaneous emissions limitation (ACEL) of 0.52 lb/mmBtu. In addition, this unit shall not have an annual heat input greater than 7,904,732 mmBtu.</p> <p>Under each plan, the actual Btu-weighted annual average NO_x emissions rate for the units in each plan shall be less than or equal to the Btu-weighted annual average NO_x emissions rate for the same units had they each been operated, during the same period of time, in compliance with the applicable emissions limitations under 40 CFR Part 76.5, 76.6, or 76.7, except that for any early election units, the applicable emissions limitations shall be under 40 CFR 76.7. If the designated representative demonstrates that the requirement of the prior sentence (as set forth in 40 CFR 76.11(d)(1)(ii)(A)) is met for a year under each respective plan, then this unit shall be deemed to be in compliance for that year with its alternative contemporaneous annual emissions limitation and annual heat input limit.</p> <p>In accordance with 40 CFR 72.40(b)(2), approval of the averaging plans shall be final only when the Alabama Department of Environmental Management, Kentucky Department for Environmental Protection, and Memphis-Shelby County Health Department have also approved the averaging plans.</p> <p>In addition to the described NO_x compliance plan, this unit shall comply with all other applicable requirements of 40 CFR Part 76, including the duty to reapply for a NO_x compliance plan and requirements covering excess emissions.</p>				

		2012	2013	2014	2015	2016
Unit 2	SO ₂ allowances, under Tables 2, 3, or 4 of 40 CFR part 73.	3471*	3471*	3471*	3471*	3471*
	NO _x limit	<p>Pursuant to 40 CFR Part 76, the Tennessee Department of Environment and Conservation approves five (5) NO_x emissions averaging plans for this unit. Each plan is effective for one calendar year for the years 2012, 2013, 2014, 2015, and 2016. Under each plan, this unit's NO_x emissions shall not exceed the annual average alternative contemporaneous emissions limitation (ACEL) of 0.51 lb/mmBtu. In addition, this unit shall not have an annual heat input greater than 8,672,996 mmBtu.</p> <p>Under each plan, the actual Btu-weighted annual average NO_x emissions rate for the units in each plan shall be less than or equal to the Btu-weighted annual average NO_x emissions rate for the same units had they each been operated, during the same period of time, in compliance with the applicable emissions limitations under 40 CFR Part 76.5, 76.6, or 76.7, except that for any early election units, the applicable emissions limitations shall be under 40 CFR 76.7. If the designated representative demonstrates that the requirement of the prior sentence (as set forth in 40 CFR 76.11(d)(1)(ii)(A)) is met for a year under each respective plan, then this unit shall be deemed to be in compliance for that year with its alternative contemporaneous annual emissions limitation and annual heat input limit.</p> <p>In accordance with 40 CFR 72.40(b)(2), approval of the averaging plans shall be final only when the Alabama Department of Environmental Management, Kentucky Department for Environmental Protection, and Memphis-Shelby County Health Department have also approved the averaging plans.</p> <p>In addition to the described NO_x compliance plan, this unit shall comply with all other applicable requirements of 40 CFR Part 76, including the duty to reapply for a NO_x compliance plan and requirements covering excess emissions.</p>				

		2012	2013	2014	2015	2016
Unit 3	SO ₂ allowances, under Tables 2, 3, or 4 of 40 CFR part 73.	3633*	3633*	3633*	3633*	3633*
	NO _x limit	<p>Pursuant to 40 CFR Part 76, the Tennessee Department of Environment and Conservation approves five (5) NO_x emissions averaging plans for this unit. Each plan is effective for one calendar year for the years 2012, 2013, 2014, 2015, and 2016. Under each plan, this unit's NO_x emissions shall not exceed the annual average alternative contemporaneous emissions limitation (ACEL) of 0.51 lb/mmBtu. In addition, this unit shall not have an annual heat input greater than 8,912,834 mmBtu.</p> <p>Under each plan, the actual Btu-weighted annual average NO_x emissions rate for the units in each plan shall be less than or equal to the Btu-weighted annual average NO_x emissions rate for the same units had they each been operated, during the same period of time, in compliance with the applicable emissions limitations under 40 CFR Part 76.5, 76.6, or 76.7, except that for any early election units, the applicable emissions limitations shall be under 40 CFR 76.7. If the designated representative demonstrates that the requirement of the prior sentence (as set forth in 40 CFR 76.11(d)(1)(ii)(A)) is met for a year under each respective plan, then this unit shall be deemed to be in compliance for that year with its alternative contemporaneous annual emissions limitation and annual heat input limit.</p> <p>In accordance with 40 CFR 72.40(b)(2), approval of the averaging plans shall be final only when the Alabama Department of Environmental Management, Kentucky Department for Environmental Protection, and Memphis-Shelby County Health Department have also approved the averaging plans.</p> <p>In addition to the described NO_x compliance plan, this unit shall comply with all other applicable requirements of 40 CFR Part 76, including the duty to reapply for a NO_x compliance plan and requirements covering excess emissions.</p>				

		2012	2013	2014	2015	2016
Unit 4	SO ₂ allowances, under Tables 2, 3, or 4 of 40 CFR part 73.	3449*	3449*	3449*	3449*	3449*
	NO _x limit	<p>Pursuant to 40 CFR Part 76, the Tennessee Department of Environment and Conservation approves five (5) NO_x emissions averaging plans for this unit. Each plan is effective for one calendar year for the years 2012, 2013, 2014, 2015, and 2016. Under each plan, this unit's NO_x emissions shall not exceed the annual average alternative contemporaneous emissions limitation (ACEL) of 0.51 lb/mmBtu. In addition, this unit shall not have an annual heat input greater than 8,991,300 mmBtu.</p> <p>Under each plan, the actual Btu-weighted annual average NO_x emissions rate for the units in each plan shall be less than or equal to the Btu-weighted annual average NO_x emissions rate for the same units had they each been operated, during the same period of time, in compliance with the applicable emissions limitations under 40 CFR Part 76.5, 76.6, or 76.7, except that for any early election units, the applicable emissions limitations shall be under 40 CFR 76.7. If the designated representative demonstrates that the requirement of the prior sentence (as set forth in 40 CFR 76.11(d)(1)(ii)(A)) is met for a year under each respective plan, then this unit shall be deemed to be in compliance for that year with its alternative contemporaneous annual emissions limitation and annual heat input limit.</p> <p>In accordance with 40 CFR 72.40(b)(2), approval of the averaging plans shall be final only when the Alabama Department of Environmental Management, Kentucky Department for Environmental Protection, and Memphis-Shelby County Health Department have also approved the averaging plans.</p> <p>In addition to the described NO_x compliance plan, this unit shall comply with all other applicable requirements of 40 CFR Part 76, including the duty to reapply for a NO_x compliance plan and requirements covering excess emissions.</p>				

		2012	2013	2014	2015	2016
Unit 5	SO ₂ allowances, under Tables 2, 3, or 4 of 40 CFR part 73.	3558*	3558*	3558*	3558*	3558*
	NO _x limit	<p>Pursuant to 40 CFR Part 76, the Tennessee Department of Environment and Conservation approves five (5) NO_x emissions averaging plans for this unit. Each plan is effective for one calendar year for the years 2012, 2013, 2014, 2015, and 2016. Under each plan, this unit's NO_x emissions shall not exceed the annual average alternative contemporaneous emissions limitation (ACEL) of 0.51 lb/mmBtu. In addition, this unit shall not have an annual heat input greater than 7,881,125 mmBtu.</p> <p>Under each plan, the actual Btu-weighted annual average NO_x emissions rate for the units in each plan shall be less than or equal to the Btu-weighted annual average NO_x emissions rate for the same units had they each been operated, during the same period of time, in compliance with the applicable emissions limitations under 40 CFR Part 76.5, 76.6, or 76.7, except that for any early election units, the applicable emissions limitations shall be under 40 CFR 76.7. If the designated representative demonstrates that the requirement of the prior sentence (as set forth in 40 CFR 76.11(d)(1)(ii)(A)) is met for a year under each respective plan, then this unit shall be deemed to be in compliance for that year with its alternative contemporaneous annual emissions limitation and annual heat input limit.</p> <p>In accordance with 40 CFR 72.40(b)(2), approval of the averaging plans shall be final only when the Alabama Department of Environmental Management, Kentucky Department for Environmental Protection, and Memphis-Shelby County Health Department have also approved the averaging plans.</p> <p>In addition to the described NO_x compliance plan, this unit shall comply with all other applicable requirements of 40 CFR Part 76, including the duty to reapply for a NO_x compliance plan and requirements covering excess emissions.</p>				

		2012	2013	2014	2015	2016
Unit 6	SO ₂ allowances, under Tables 2, 3, or 4 of 40 CFR part 73.	3410*	3410*	3410*	3410*	3410*
	NO _x limit	<p>Pursuant to 40 CFR Part 76, the Tennessee Department of Environment and Conservation approves five (5) NO_x emissions averaging plans for this unit. Each plan is effective for one calendar year for the years 2012, 2013, 2014, 2015, and 2016. Under each plan, this unit's NO_x emissions shall not exceed the annual average alternative contemporaneous emissions limitation (ACEL) of 0.51 lb/mmBtu. In addition, this unit shall not have an annual heat input greater than 6,942,716 mmbtu.</p> <p>Under each plan, the actual Btu-weighted annual average NO_x emissions rate for the units in each plan shall be less than or equal to the Btu-weighted annual average NO_x emissions rate for the same units had they each been operated, during the same period of time, in compliance with the applicable emissions limitations under 40 CFR Part 76.5, 76.6, or 76.7, except that for any early election units, the applicable emissions limitations shall be under 40 CFR 76.7. If the designated representative demonstrates that the requirement of the prior sentence (as set forth in 40 CFR 76.11(d)(1)(ii)(A)) is met for a year under each respective plan, then this unit shall be deemed to be in compliance for that year with its alternative contemporaneous annual emissions limitation and annual heat input limit.</p> <p>In accordance with 40 CFR 72.40(b)(2), approval of the averaging plans shall be final only when the Alabama Department of Environmental Management, Kentucky Department for Environmental Protection, and Memphis-Shelby County Health Department have also approved the averaging plans.</p> <p>In addition to the described NO_x compliance plan, this unit shall comply with all other applicable requirements of 40 CFR Part 76, including the duty to reapply for a NO_x compliance plan and requirements covering excess emissions.</p>				

		2012	2013	2014	2015	2016
Unit 7	SO ₂ allowances, under Tables 2, 3, or 4 of 40 CFR part 73.	3878*	3878*	3878*	3878*	3878*
	NO _x limit	<p>Pursuant to 40 CFR Part 76, the Tennessee Department of Environment and Conservation approves five (5) NO_x emissions averaging plans for this unit. Each plan is effective for one calendar year for the years, 2012, 2013, 2014, 2015, and 2016. Under each plan, this unit's NO_x emissions shall not exceed the annual average alternative contemporaneous emissions limitation (ACEL) of 0.51 lb/mmBtu. In addition, this unit shall not have an annual heat input less than 5,356,695.</p> <p>Under each plan, the actual Btu-weighted annual average NO_x emissions rate for the units in each plan shall be less than or equal to the Btu-weighted annual average NO_x emissions rate for the same units had they each been operated, during the same period of time, in compliance with the applicable emissions limitations under 40 CFR Part 76.5, 76.6, or 76.7, except that for any early election units, the applicable emissions limitations shall be under 40 CFR 76.7. If the designated representative demonstrates that the requirement of the prior sentence (as set forth in 40 CFR 76.11(d)(1)(ii)(A)) is met for a year under each respective plan, then this unit shall be deemed to be in compliance for that year with its alternative contemporaneous annual emissions limitation and annual heat input limit.</p> <p>In accordance with 40 CFR 72.40(b)(2), approval of the averaging plans shall be final only when the Alabama Department of Environmental Management, Kentucky Department for Environmental Protection, and Memphis-Shelby County Health Department have also approved the averaging plans.</p> <p>In addition to the described NO_x compliance plan, this unit shall comply with all other applicable requirements of 40 CFR Part 76, including the duty to reapply for a NO_x compliance plan and requirements covering excess emissions.</p>				

		2012	2013	2014	2015	2016
Unit 8	SO ₂ allowances, under Tables 2, 3, or 4 of 40 CFR part 73.	3759*	3759*	3759*	3759*	3759*
	NO _x limit	<p>Pursuant to 40 CFR Part 76, the Tennessee Department of Environment and Conservation approves five (5) NO_x emissions averaging plans for this unit. Each plan is effective for one calendar year for the years 2012, 2013, 2014, 2015, and 2016. Under each plan, this unit's NO_x emissions shall not exceed the annual average alternative contemporaneous emissions limitation (ACEL) of 0.51 lb/mmBtu. In addition, this unit shall not have an annual heat input less than 6,651,211 mmBtu.</p> <p>Under each plan, the actual Btu-weighted annual average NO_x emissions rate for the units in each plan shall be less than or equal to the Btu-weighted annual average NO_x emissions rate for the same units had they each been operated, during the same period of time, in compliance with the applicable emissions limitations under 40 CFR Part 76.5, 76.6, or 76.7, except that for any early election units, the applicable emissions limitations shall be under 40 CFR 76.7. If the designated representative demonstrates that the requirement of the prior sentence (as set forth in 40 CFR 76.11(d)(1)(ii)(A)) is met for a year under each respective plan, then this unit shall be deemed to be in compliance for that year with its alternative contemporaneous annual emissions limitation and annual heat input limit.</p> <p>In accordance with 40 CFR 72.40(b)(2), approval of the averaging plans shall be final only when the Alabama Department of Environmental Management, Kentucky Department for Environmental Protection, and Memphis-Shelby County Health Department have also approved the averaging plans.</p> <p>In addition to the described NO_x compliance plan, this unit shall comply with all other applicable requirements of 40 CFR Part 76, including the duty to reapply for a NO_x compliance plan and requirements covering excess emissions.</p>				

		2012	2013	2014	2015	2016
Unit 9	SO ₂ allowances, under Tables 2, 3, or 4 of 40 CFR part 73.	3057*	3057*	3057*	3057*	3057*
	NO _x limit	<p>Pursuant to 40 CFR Part 76, the Tennessee Department of Environment and Conservation approves five (5) NO_x emissions averaging plans for this unit. Each plan is effective for one calendar year for the years 2012, 2013, 2014, 2015 and 2016. Under each plan, this unit's NO_x emissions shall not exceed the annual average alternative contemporaneous emissions limitation (ACEL) of 0.51 lb/mmBtu. In addition, this unit shall not have an annual heat input less than 6,877,482 mmBtu.</p> <p>Under each plan, the actual Btu-weighted annual average NO_x emissions rate for the units in each plan shall be less than or equal to the Btu-weighted annual average NO_x emissions rate for the same units had they each been operated, during the same period of time, in compliance with the applicable emissions limitations under 40 CFR Part 76.5, 76.6, or 76.7, except that for any early election units, the applicable emissions limitations shall be under 40 CFR 76.7. If the designated representative demonstrates that the requirement of the prior sentence (as set forth in 40 CFR 76.11(d)(1)(ii)(A)) is met for a year under each respective plan, then this unit shall be deemed to be in compliance for that year with its alternative contemporaneous annual emissions limitation and annual heat input limit.</p> <p>In accordance with 40 CFR 72.40(b)(2), approval of the averaging plans shall be final only when the Alabama Department of Environmental Management, Kentucky Department for Environmental Protection, and Memphis-Shelby County Health Department have also approved the averaging plans.</p> <p>In addition to the described NO_x compliance plan, this unit shall comply with all other applicable requirements of 40 CFR Part 76, including the duty to reapply for a NO_x compliance plan and requirements covering excess emissions.</p>				

		2012	2013	2014	2015	2016
Unit 10	SO ₂ allowances, under Tables 2, 3, or 4 of 40 CFR part 73.	3262*	3262*	3262*	3262*	3262*
	NO _x limit	<p>Pursuant to 40 CFR Part 76, the Tennessee Department of Environment and Conservation approves five (5) NO_x emissions averaging plans for this unit. Each plan is effective for one calendar year for the years 2012, 2013, 2014, 2015 and 2016. Under each plan, this unit's NO_x emissions shall not exceed the annual average alternative contemporaneous emissions limitation (ACEL) of 0.51 lb/mmBtu. In addition, this unit shall not have an annual heat input less than 6,242,572 mmBtu.</p> <p>Under each plan, the actual Btu-weighted annual average NO_x emissions rate for the units in each plan shall be less than or equal to the Btu-weighted annual average NO_x emissions rate for the same units had they each been operated, during the same period of time, in compliance with the applicable emissions limitations under 40 CFR Part 76.5, 76.6, or 76.7, except that for any early election units, the applicable emissions limitations shall be under 40 CFR 76.7. If the designated representative demonstrates that the requirement of the prior sentence (as set forth in 40 CFR 76.11(d)(1)(ii)(A)) is met for a year under each respective plan, then this unit shall be deemed to be in compliance for that year with its alternative contemporaneous annual emissions limitation and annual heat input limit.</p> <p>In accordance with 40 CFR 72.40(b)(2), approval of the averaging plans shall be final only when the Alabama Department of Environmental Management, Kentucky Department for Environmental Protection, and Memphis-Shelby County Health Department have also approved the averaging plans.</p> <p>In addition to the described NO_x compliance plan, this unit shall comply with all other applicable requirements of 40 CFR Part 76, including the duty to reapply for a NO_x compliance plan and requirements covering excess emissions.</p>				

Combustion Turbine Units JCT17, JCT 18, JCT19, and JCT 20:

		2012	2013	2014	2015	2016
Unit JCT17	SO ₂ allowances	**	**	**	**	**
	NO _x limit	40 CFR Part 76 not applicable to unit. Natural gas / fuel oil fired unit.				

		2012	2013	2014	2015	2016
Unit JCT18	SO ₂ allowances	**	**	**	**	**
	NO _x limit	40 CFR Part 76 not applicable to unit. Natural gas / fuel oil fired unit.				

		2012	2013	2014	2015	2016
Unit JCT19	SO ₂ allowances	**	**	**	**	**
	NO _x limit	40 CFR Part 76 not applicable to unit. Natural gas / fuel oil fired unit.				

		2012	2013	2014	2015	2016
Unit JCT20	SO ₂ allowances	**	**	**	**	**
	NO _x limit	40 CFR Part 76 not applicable to unit. Natural gas / fuel oil fired unit.				

** These new units are not eligible for an SO₂ allowance allocation under 40 CFR part 73, but the source must comply with all of the standard requirements and special provisions stated in the Phase II permit application. The source must hold sufficient allowances to cover SO₂ emissions.

- 3) **Comments, Notes, and Justifications:** Affected units are ten (10) coal fired boilers and four (4) new natural gas / fuel oil fired combustion turbines. The facility's phase II permit application lists a commence operation date of March 15, 2000 for the combustion turbine (CT) units. Sixteen (16) existing natural gas / no. 2 fuel oil fired simple cycle combustion turbines are not affected units.
- 4) **Permit Applications, NO_x Compliance Plan, and NO_x Averaging Plan:** Attached.

5) Summary of Previous Actions and Present Action:

Previous Actions:

1. Draft permit, including SO₂ compliance plan,
issued for public comment. August 5, 1997
2. SO₂ portion of permit finalized and issued. November 10, 1997
3. Permit revised to include a draft nitrogen oxides Emissions
Averaging Plan for Units 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10,
issued for public comment on the NO_x portion only. October 8, 1998
4. NO_x portion of permit finalized and issued. April 1, 1999
5. Permit, revised (1) to include a revised draft nitrogen oxides
Averaging Plan for Units 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10,
and (2) add SO₂ compliance plan for new CT Units JCT17-JCT 20,
issued for public comment (NO_x portion only for Units 1-10). February 20, 2001
6. Permit, including revised NO_x Averaging Plan for
Units 1-10 and SO₂ Compliance Plan for new CT Units,
Finalized and issued. May 14, 2001

Present Action:

- 2012 Draft permit, including SO₂ compliance plan,
issued for public comment. March 2, 2012

Barry R. Stephens, P.E.
Technical Secretary
Tennessee Air Pollution Control Board

Acid Rain Permit Application and NOx Compliance Plan



Acid Rain Permit Application

2007 DEC 17 PM 1:12

For more information, see instructions and 40 CFR 72.30 and 72.31.

This submission is: new revised for Acid Rain permit renewal

STEP 1

Identify the facility name, State, and plant (ORIS) code.

Johnsonville Facility (Source) Name	TN State	3406 Plant Code
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STEP 2

Enter the unit ID# for every affected unit at the affected source in column "a."

a	b
Unit ID#	Unit Will Hold Allowances in Accordance with 40 CFR 72.9(c)(1)
1	Yes
2	Yes
3	Yes
4	Yes
5	Yes
6	Yes
7	Yes
8	Yes
9	Yes
10	Yes
JCT17	Yes
JCT18	Yes
JCT19	Yes
JCT20	Yes

Johnsonville

Facility (Source) Name (from STEP 1)

Acid Rain - Page 2

Permit Requirements

STEP 3

Read the standard requirements.

(1) The designated representative of each affected source and each affected unit at the source shall:

(i) Submit a complete Acid Rain permit application (including a compliance plan) under 40 CFR part 72 in accordance with the deadlines specified in 40 CFR 72.30; and

(ii) Submit in a timely manner any supplemental information that the permitting authority determines is necessary in order to review an Acid Rain permit application and issue or deny an Acid Rain permit;

(2) The owners and operators of each affected source and each affected unit at the source shall:

(i) Operate the unit in compliance with a complete Acid Rain permit application or a superseding Acid Rain permit issued by the permitting authority; and

(ii) Have an Acid Rain Permit.

Monitoring Requirements

(1) The owners and operators and, to the extent applicable, designated representative of each affected source and each affected unit at the source shall comply with the monitoring requirements as provided in 40 CFR part 75.

(2) The emissions measurements recorded and reported in accordance with 40 CFR part 75 shall be used to determine compliance by the source or unit, as appropriate, with the Acid Rain emissions limitations and emissions reduction requirements for sulfur dioxide and nitrogen oxides under the Acid Rain Program.

(3) The requirements of 40 CFR part 75 shall not affect the responsibility of the owners and operators to monitor emissions of other pollutants or other emissions characteristics at the unit under other applicable requirements of the Act and other provisions of the operating permit for the source.

Sulfur Dioxide Requirements

(1) The owners and operators of each source and each affected unit at the source shall:

(i) Hold allowances, as of the allowance transfer deadline, in the source's compliance account (after deductions under 40 CFR 73.34(c)); not less than the total annual emissions of sulfur dioxide for the previous calendar year from the affected units at the source; and

(ii) Comply with the applicable Acid Rain emissions limitations for sulfur dioxide.

(2) Each ton of sulfur dioxide emitted in excess of the Acid Rain emissions limitations for sulfur dioxide shall constitute a separate violation of the Act.

(3) An affected unit shall be subject to the requirements under paragraph (1) of the sulfur dioxide requirements as follows:

(i) Starting January 1, 2000, an affected unit under 40 CFR 72.6(a)(2); or

(ii) Starting on the later of January 1, 2000 or the deadline for monitor certification under 40 CFR part 75, an affected unit under 40 CFR 72.6(a)(3).

Johnsonville

Facility (Source) Name (from STEP 1)

Sulfur Dioxide Requirements, Cont'd.

STEP 3, Cont'd.

- (4) Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program.
- (5) An allowance shall not be deducted in order to comply with the requirements under paragraph (1) of the sulfur dioxide requirements prior to the calendar year for which the allowance was allocated.
- (6) An allowance allocated by the Administrator under the Acid Rain Program is a limited authorization to emit sulfur dioxide in accordance with the Acid Rain Program. No provision of the Acid Rain Program, the Acid Rain permit application, the Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization.
- (7) An allowance allocated by the Administrator under the Acid Rain Program does not constitute a property right.

Nitrogen Oxides Requirements

The owners and operators of the source and each affected unit at the source shall comply with the applicable Acid Rain emissions limitation for nitrogen oxides.

Excess Emissions Requirements

- (1) The designated representative of an affected source that has excess emissions in any calendar year shall submit a proposed offset plan, as required under 40 CFR part 77.
- (2) The owners and operators of an affected source that has excess emissions in any calendar year shall:
 - (i) Pay without demand the penalty required, and pay upon demand the interest on that penalty, as required by 40 CFR part 77; and
 - (ii) Comply with the terms of an approved offset plan, as required by 40 CFR part 77.

Recordkeeping and Reporting Requirements

- (1) Unless otherwise provided, the owners and operators of the source and each affected unit at the source shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time prior to the end of 5 years, in writing by the Administrator or permitting authority:
 - (i) The certificate of representation for the designated representative for the source and each affected unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation, in accordance with 40 CFR 72.24; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission of a new certificate of representation changing the designated representative;

Johnsonville

Facility (Source) Name (from STEP 1)

Acid Rain - Page 4

Recordkeeping and Reporting Requirements, Cont'd.

STEP 3, Cont'd.

- (ii) All emissions monitoring information, in accordance with 40 CFR part 75, provided that to the extent that 40 CFR part 75 provides for a 3-year period for recordkeeping, the 3-year period shall apply.
 - (iii) Copies of all reports, compliance certifications, and other submissions and all records made or required under the Acid Rain Program; and,
 - (iv) Copies of all documents used to complete an Acid Rain permit application and any other submission under the Acid Rain Program or to demonstrate compliance with the requirements of the Acid Rain Program.
- (2) The designated representative of an affected source and each affected unit at the source shall submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR part 72 subpart I and 40 CFR part 75.

Liability

- (1) Any person who knowingly violates any requirement or prohibition of the Acid Rain Program, a complete Acid Rain permit application, an Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8, including any requirement for the payment of any penalty owed to the United States, shall be subject to enforcement pursuant to section 113(c) of the Act.
- (2) Any person who knowingly makes a false, material statement in any record, submission, or report under the Acid Rain Program shall be subject to criminal enforcement pursuant to section 113(c) of the Act and 18 U.S.C. 1001.
- (3) No permit revision shall excuse any violation of the requirements of the Acid Rain Program that occurs prior to the date that the revision takes effect.
- (4) Each affected source and each affected unit shall meet the requirements of the Acid Rain Program.
- (5) Any provision of the Acid Rain Program that applies to an affected source (including a provision applicable to the designated representative of an affected source) shall also apply to the owners and operators of such source and of the affected units at the source.
- (6) Any provision of the Acid Rain Program that applies to an affected unit (including a provision applicable to the designated representative of an affected unit) shall also apply to the owners and operators of such unit.
- (7) Each violation of a provision of 40 CFR parts 72, 73, 74, 75, 76, 77, and 78 by an affected source or affected unit, or by an owner or operator or designated representative of such source or unit, shall be a separate violation of the Act.

Effect on Other Authorities

No provision of the Acid Rain Program, an Acid Rain permit application, an Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8 shall be construed as:

- (1) Except as expressly provided in title IV of the Act, exempting or excluding the owners and operators and, to the extent applicable, the designated representative of an affected source or affected unit from compliance with any other provision of the Act, including the provisions of title I of the Act relating

Johnsonville

Facility (Source) Name (from STEP 1)

Effect on Other Authorities, Cont'd.

STEP 3, Cont'd.

to applicable National Ambient Air Quality Standards or State Implementation Plans;

(2) Limiting the number of allowances a source can hold; *provided*, that the number of allowances held by the source shall not affect the source's obligation to comply with any other provisions of the Act;

(3) Requiring a change of any kind in any State law regulating electric utility rates and charges, affecting any State law regarding such State regulation, or limiting such State regulation, including any prudence review requirements under such State law;

(4) Modifying the Federal Power Act or affecting the authority of the Federal Energy Regulatory Commission under the Federal Power Act; or,

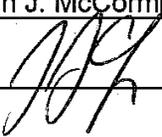
(5) Interfering with or impairing any program for competitive bidding for power supply in a State in which such program is established.

Certification

STEP 4

Read the certification statement, sign, and date.

I am authorized to make this submission on behalf of the owners and operators of the affected source or affected units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

Name	John J. McCormick	
Signature		Date 12-15-09

2009 DEC 17 PM 1:12



Phase II NO_x Compliance Plan

For more information, see instructions and refer to 40 CFR 76.9

This submission is: New Revised 2009 DEC 17 PM 1:14

STEP 1

Indicate plant name, State, and ORIS code from NADB, if applicable

Johnsonville	TN	3406
Plant Name	State	ORIS Code

STEP 2

Identify each affected Group 1 and Group 2 boiler using the boiler ID# from NADB, if applicable. Indicate boiler type: "CB" for cell burner, "CY" for cyclone, "DBW" for dry bottom wall-fired, "T" for tangentially fired, "V" for vertically fired, and "WB" for wet bottom. Indicate the compliance option selected for each unit.

	ID# 1	ID# 2	ID# 3	ID# 4	ID# 5	ID# 6
	Type T					
(a) Standard annual average emission limitation of 0.50 lb/mmBtu (for Phase I dry bottom wall-fired boilers)	<input type="checkbox"/>					
(b) Standard annual average emission limitation of 0.45 lb/mmBtu (for Phase I tangentially fired boilers)	<input type="checkbox"/>					
(c) EPA-approved early election plan under 40 CFR 76.8 through 12/31/07 (also indicate above emission limit specified in plan)	<input type="checkbox"/>					
(d) Standard annual average emission limitation of 0.46 lb/mmBtu (for Phase II dry bottom wall-fired boilers)	<input type="checkbox"/>					
(e) Standard annual average emission limitation of 0.40 lb/mmBtu (for Phase II tangentially fired boilers)	<input type="checkbox"/>					
(f) Standard annual average emission limitation of 0.68 lb/mmBtu (for cell burner boilers)	<input type="checkbox"/>					
(g) Standard annual average emission limitation of 0.86 lb/mmBtu (for cyclone boilers)	<input type="checkbox"/>					
(h) Standard annual average emission limitation of 0.80 lb/mmBtu (for vertically fired boilers)	<input type="checkbox"/>					
(i) Standard annual average emission limitation of 0.84 lb/mmBtu (for wet bottom boilers)	<input type="checkbox"/>					
(j) NO _x Averaging Plan (include NO _x Averaging form)	<input checked="" type="checkbox"/>					
(k) Common stack pursuant to 40 CFR 75.17(a)(2)(i)(A) (check the standard emission limitation box above for most stringent limitation applicable to any unit utilizing stack)	<input type="checkbox"/>					
(l) Common stack pursuant to 40 CFR 75.17(a)(2)(i)(B) with NO _x Averaging (check the NO _x Averaging Plan box and include NO _x Averaging form)	<input checked="" type="checkbox"/>					



Phase II NO_x Compliance Plan

For more information, see instructions and refer to 40 CFR 76.9

This submission is: New Revised

STEP 1

Indicate plant name, State, and ORIS code from NADB, if applicable

Johnsonville	TN	3406
Plant Name	State	ORIS Code

STEP 2

Identify each affected Group 1 and Group 2 boiler using the boiler ID# from NADB, if applicable. Indicate boiler type: "CB" for cell burner, "CY" for cyclone, "DBW" for dry bottom wall-fired, "T" for tangentially fired, "V" for vertically fired, and "WB" for wet bottom. Indicate the compliance option selected for each unit.

	ID# 7	ID# 8	ID# 9	ID# 10	ID#	ID#
	Type DBW	Type DBW	Type DBW	Type DBW	Type	Type
(a) Standard annual average emission limitation of 0.50 lb/mmBtu (for Phase I dry bottom wall-fired boilers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b) Standard annual average emission limitation of 0.45 lb/mmBtu (for Phase I tangentially fired boilers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c) EPA-approved early election plan under 40 CFR 76.8 through 12/31/07 (also indicate above emission limit specified in plan)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d) Standard annual average emission limitation of 0.46 lb/mmBtu (for Phase II dry bottom wall-fired boilers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(e) Standard annual average emission limitation of 0.40 lb/mmBtu (for Phase II tangentially fired boilers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f) Standard annual average emission limitation of 0.68 lb/mmBtu (for cell burner boilers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(g) Standard annual average emission limitation of 0.86 lb/mmBtu (for cyclone boilers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(h) Standard annual average emission limitation of 0.80 lb/mmBtu (for vertically fired boilers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(i) Standard annual average emission limitation of 0.84 lb/mmBtu (for wet bottom boilers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(j) NO _x Averaging Plan (include NO _x Averaging form)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(k) Common stack pursuant to 40 CFR 75.17(a)(2)(i)(A) (check the standard emission limitation box above for most stringent limitation applicable to any unit utilizing stack)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(l) Common stack pursuant to 40 CFR 75.17(a)(2)(i)(B) with NO _x Averaging (check the NO _x Averaging Plan box and include NO _x Averaging form)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Plant Name (from Step 1) **Johnsonville**

NO_x Compliance - Page 2
Page 3 of 4

STEP 2, cont'd.

	ID# 1	ID# 2	ID# 3	ID# 4	ID# 5	ID# 6
	Type T					
(m) EPA-approved common stack apportionment method pursuant to 40 CFR 76.17 (a)(2)(i)(C), (a)(2)(iii)(B), or (b)(2)	<input type="checkbox"/>					
(n) AEL (include Phase II AEL Demonstration Period, Final AEL Petition, or AEL Renewal form as appropriate)	<input type="checkbox"/>					
(o) Petition for AEL demonstration period or final AEL under review by U.S. EPA or demonstration period ongoing	<input type="checkbox"/>					
(p) Repowering extension plan approved or under review	<input type="checkbox"/>					

STEP 3

Read the standard requirements and certification, enter the name of the designated representative, sign & date.

Standard Requirements

General. This source is subject to the standard requirements in 40 CFR 72.9 (consistent with 40 CFR 76.8(e)(1)(i)). These requirements are listed in this source's Acid Rain Permit.

Special Provisions for Early Election Units

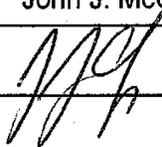
Nitrogen Oxides. A unit that is governed by an approved early election plan shall be subject to an emissions limitation for NO_x as provided under 40 CFR 76.8(a)(2) except as provided under 40 CFR 76.8(e)(3)(iii).

Liability. The owners and operators of a unit governed by an approved early election plan shall be liable for any violation of the plan or 40 CFR 76.8 at that unit. The owners and operators shall be liable, beginning January 1, 2000, for fulfilling the obligations specified in 40 CFR Part 77.

Termination. An approved early election plan shall be in effect only until the earlier of January 1, 2008 or January 1 of the calendar year for which a termination of the plan takes effect. If the designated representative of the unit under an approved early election plan fails to demonstrate compliance with the applicable emissions limitation under 40 CFR 76.5 for any year during the period beginning January 1 of the first year the early election takes effect and ending December 31, 2007, the permitting authority will terminate the plan. The termination will take effect beginning January 1 of the year after the year for which there is a failure to demonstrate compliance, and the designated representative may not submit a new early election plan. The designated representative of the unit under an approved early election plan may terminate the plan any year prior to 2008 but may not submit a new early election plan. In order to terminate the plan, the designated representative must submit a notice under 40 CFR 72.40(d) by January 1 of the year for which the termination is to take effect. If an early election plan is terminated any year prior to 2000, the unit shall meet, beginning January 1, 2000, the applicable emissions limitation for NO_x for Phase II units with Group 1 boilers under 40 CFR 76.7. If an early election plan is terminated on or after 2000, the unit shall meet, beginning on the effective date of the termination, the applicable emissions limitation for NO_x for Phase II units with Group 1 boilers under 40 CFR 76.7.

Certification

I am authorized to make this submission on behalf of the owners and operators of the affected source or affected units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

Name	John J. McCormick	
Signature		Date 12-15-09

Plant Name (from Step 1) **Johnsonville**

STEP 2, cont'd.

	ID# 7	ID# 8	ID# 9	ID# 10	ID#	ID#
	Type DB	Type DB	Type DB	Type DB	Type	Type
(m) EPA-approved common stack apportionment method pursuant to 40 CFR 75.17 (a)(2)(i)(C), (a)(2)(iii)(B), or (b)(2)	<input type="checkbox"/>					
(n) AEL (Include Phase II AEL Demonstration Period, Final AEL Petition, or AEL Renewal form as appropriate)	<input type="checkbox"/>					
(o) Petition for AEL demonstration period or final AEL under review by U.S. EPA or demonstration period ongoing	<input type="checkbox"/>					
(p) Repowering extension plan approved or under review	<input type="checkbox"/>					

STEP 3

Read the standard requirements and certification, enter the name of the designated representative, sign & date.

Standard Requirements

General. This source is subject to the standard requirements in 40 CFR 72.9 (consistent with 40 CFR 76.8(e)(1)(i)). These requirements are listed in this source's Acid Rain Permit.

Special Provisions for Early Election Units

Nitrogen Oxides. A unit that is governed by an approved early election plan shall be subject to an emissions limitation for NO_x as provided under 40 CFR 76.8(a)(2) except as provided under 40 CFR 76.8(e)(3)(iii).

Liability. The owners and operators of a unit governed by an approved early election plan shall be liable for any violation of the plan or 40 CFR 76.8 at that unit. The owners and operators shall be liable, beginning January 1, 2000, for fulfilling the obligations specified in 40 CFR Part 77.

Termination. An approved early election plan shall be in effect only until the earlier of January 1, 2008 or January 1 of the calendar year for which a termination of the plan takes effect. If the designated representative of the unit under an approved early election plan fails to demonstrate compliance with the applicable emissions limitation under 40 CFR 76.5 for any year during the period beginning January 1 of the first year the early election takes effect and ending December 31, 2007, the permitting authority will terminate the plan. The termination will take effect beginning January 1 of the year after the year for which there is a failure to demonstrate compliance, and the designated representative may not submit a new early election plan. The designated representative of the unit under an approved early election plan may terminate the plan any year prior to 2008 but may not submit a new early election plan. In order to terminate the plan, the designated representative must submit a notice under 40 CFR 72.40(d) by January 1 of the year for which the termination is to take effect. If an early election plan is terminated any year prior to 2000, the unit shall meet, beginning January 1, 2000, the applicable emissions limitation for NO_x for Phase II units with Group 1 boilers under 40 CFR 76.7. If an early election plan is terminated on or after 2000, the unit shall meet, beginning on the effective date of the termination, the applicable emissions limitation for NO_x for Phase II units with Group 1 boilers under 40 CFR 76.7.

Certification

I am authorized to make this submission on behalf of the owners and operators of the affected source or affected units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

Name	John J. McCormick	
Signature		Date 12-15-09



Phase II NO_x Averaging Plan

For more information, see instructions and refer to 40 CFR 76.11

2009 DEC 17 PM 1:14

This submission is: New Revised

STEP 1

Identify the units participating in this averaging plan by plant name, State, and boiler ID# from NADB. In column (a), fill in each unit's applicable emission limitation from 40 CFR 76.5, 76.6, or 76.7. In column (b), assign an alternative contemporaneous annual emissions limitation (ACEL) in lb/mmBtu to each unit. In column (c), assign an annual heat input limitation in mmBtu to each unit. Continue to page 3 if necessary.

Plant Name	State	ID#	(a) Emission Limitation	(b) ACEL	(c) Annual Heat Input Limit
Allen	TN	1	0.86	0.76	17,348,181
Allen	TN	2	0.86	0.76	15,500,918
Allen	TN	3	0.86	0.76	16,941,173
Bull Run	TN	1	0.40	0.63	59,269,756
Colbert	AL	1	0.50	0.48	9,479,205
Colbert	AL	2	0.50	0.48	10,155,383
Colbert	AL	3	0.50	0.48	11,500,927
Colbert	AL	4	0.50	0.48	11,587,558
Colbert	AL	5	0.50	0.45	28,464,183

STEP 2

Use the formula to enter the Btu-weighted annual emission rate averaged over the units if they are operated in accordance with the proposed averaging plan and the Btu-weighted annual average emission rate for the same units if they are operated in compliance with 40 CFR 76.5, 76.6, or 76.7. The former must be less than or equal to the latter.

Btu-weighted annual emission rate averaged over the units if they are operated in accordance with the proposed averaging plan

0.5708

≤

Btu-weighted annual average emission rate for same units operated in compliance with 40 CFR 76.5, 76.6 or 76.7

0.5713

$$\frac{\sum_{i=1}^n (R_{Li} \times HI_i)}{\sum_{i=1}^n HI_i}$$

$$\leq$$

$$\frac{\sum_{i=1}^n [R_{1i} \times HI_i]}{\sum_{i=1}^n HI_i}$$

Where,

- R_{Li} = Alternative contemporaneous annual emission limitation for unit i, in lb/mmBtu, as specified in column (b) of Step 1;
- R_{1i} = Applicable emission limitation for unit i, in lb/mmBtu, as specified in column (a) of Step 1;
- HI_i = Annual heat input for unit i, in mmBtu, as specified in column (c) of Step 1;
- n = Number of units in the averaging plan

STEP 1

Continue the identification of units from Step 1, page 1, here.

Plant Name	State	ID#	(a)	(b)	(c)
			Emission Limitation	Alt. Contemp. Emission Limitation	Annual Heat Input Limit
Cumberland	TN	1	0.68	0.56	77,769,426
Cumberland	TN	2	0.68	0.56	77,173,361
Gallatin	TN	1	0.45	0.29	15,485,326
Gallatin	TN	2	0.45	0.29	15,608,313
Gallatin	TN	3	0.45	0.34	18,717,826
Gallatin	TN	4	0.45	0.34	18,455,217
John Sevier	TN	1	0.40	0.42	12,648,030
John Sevier	TN	2	0.40	0.42	12,651,121
John Sevier	TN	3	0.40	0.42	12,773,319
John Sevier	TN	4	0.40	0.42	12,490,535
Johnsonville	TN	1	0.45	0.52	7,904,732
Johnsonville	TN	10	0.50	0.51	6,242,572
Johnsonville	TN	2	0.45	0.51	8,672,996
Johnsonville	TN	3	0.45	0.51	8,912,834
Johnsonville	TN	4	0.45	0.51	8,991,300
Johnsonville	TN	5	0.45	0.51	7,881,125
Johnsonville	TN	6	0.45	0.51	6,942,716
Johnsonville	TN	7	0.50	0.51	5,356,695
Johnsonville	TN	8	0.50	0.51	6,651,211
Johnsonville	TN	9	0.50	0.51	6,877,482
Kingston	TN	1	0.40	0.57	10,878,551
Kingston	TN	2	0.40	0.57	10,947,792
Kingston	TN	3	0.40	0.57	10,803,474
Kingston	TN	4	0.40	0.57	10,862,760
Kingston	TN	5	0.40	0.39	9,413,019
Kingston	TN	6	0.40	0.39	5,165,382

STEP 1

Continue the identification of units from Step 1, page 1, here.

Plant Name	State	ID#	(a) Emission Limitation	(b) Alt. Contemp. Emission Limitation	(c) Annual Heat Input Limit
Kingston	TN	7	0.40	0.39	6,110,364
Kingston	TN	8	0.40	0.39	4,203,972
Kingston	TN	9	0.40	0.50	13,971,884
Paradise	KY	1	0.86	0.90	48,926,900
Paradise	KY	2	0.86	0.90	45,893,042
Paradise	KY	3	0.86	0.90	66,121,361
Shawnee	KY	1	0.46	0.43	8,810,737
Shawnee	KY	2	0.46	0.43	7,664,953
Shawnee	KY	3	0.46	0.43	8,630,718
Shawnee	KY	4	0.46	0.43	8,578,830
Shawnee	KY	5	0.46	0.43	8,709,308
Shawnee	KY	6	0.46	0.43	9,212,743
Shawnee	KY	7	0.46	0.43	9,187,847
Shawnee	KY	8	0.46	0.43	9,041,547
Shawnee	KY	9	0.46	0.43	8,430,581
Widows Creek	AL	1	0.46	0.50	3,589,059
Widows Creek	AL	2	0.46	0.50	3,099,420
Widows Creek	AL	3	0.46	0.50	4,509,249
Widows Creek	AL	4	0.46	0.50	5,310,876
Widows Creek	AL	5	0.46	0.50	3,871,690
Widows Creek	AL	6	0.46	0.50	5,202,135
Widows Creek	AL	7	0.40	0.44	36,247,301
Widows Creek	AL	8	0.40	0.44	34,307,989

STEP 3

Mark one of the two options and enter dates.

- This plan is effective for calendar year _____ through calendar year _____ unless notification to terminate the plan is given.
- Treat this plan as 5 identical plans, each effective for one calendar year for the following calendar years: 2010, 2011, 2012, 2013, and 2014 unless notification to terminate one or more of these plans is given.

STEP 4

Read the special provisions and certification, enter the name of the designated representative, and sign and date.

Special Provisions

Emission Limitations

Each affected unit in an approved averaging plan is in compliance with the Acid Rain emission limitation for NO_x under the plan only if the following requirements are met:

- (i) For each unit, the unit's actual annual average emission rate for the calendar year, in lb/mmBtu, is less than or equal to its alternative contemporaneous annual emission limitation in the averaging plan, and
- (a) For each unit with an alternative contemporaneous emission limitation less stringent than the applicable emission limitation in 40 CFR 76.5, 76.6, or 76.7, the actual annual heat input for the calendar year does not exceed the annual heat input limit in the averaging plan,
- (b) For each unit with an alternative contemporaneous emission limitation more stringent than the applicable emission limitation in 40 CFR 76.5, 76.6, or 76.7, the actual annual heat input for the calendar year is not less than the annual heat input limit in the averaging plan, or
- (ii) If one or more of the units does not meet the requirements of (i), the designated representative shall demonstrate, in accordance with 40 CFR 76.11(d)(1)(i)(A) and (B), that the actual Btu-weighted annual average emission rate for the units in the plan is less than or equal to the Btu-weighted annual average rate for the same units had they each been operated, during the same period of time, in compliance with the applicable emission limitations in 40 CFR 76.5, 76.6, or 76.7.
- (iii) If there is a successful group showing of compliance under 40 CFR 76.11(d)(1)(ii)(A) and (B) for a calendar year, then all units in the averaging plan shall be deemed to be in compliance for that year with their alternative contemporaneous emission limitations and annual heat input limits under (i).

Liability

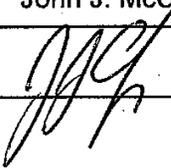
The owners and operators of a unit governed by an approved averaging plan shall be liable for any violation of the plan or this section at that unit or any other unit in the plan, including liability for fulfilling the obligations specified in part 77 of this chapter and sections 113 and 411 of the Act.

Termination

The designated representative may submit a notification to terminate an approved averaging plan, in accordance with 40 CFR 72.40(d), no later than October 1 of the calendar year for which the plan is to be terminated.

Certification

I am authorized to make this submission on behalf of the owners and operators of the affected source or affected units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

Name	John J. McCormick	
Signature		Date 12-15-09

ATTACHMENT 4

**Emission Factors (Table 6-2 of Application) and Calculation of
Particulate Emissions from Ash Handling Process (43-0011-30)**

Pages 6-15 through 6-22 from 11-18-96 Permit Application

E-6-2
JOHNSONVILLE FOSSIL PLANT: ASH HANDLING PROCESS - ACTUAL PARTICULATE EMISSIONS FROM SIGNIFICANT SOURCES
 JULY 1993 - JUNE 1994

EMISSION UNIT NUMBER	DESCRIPTION	EMISSION UNIT COMPONENT	APPLICABLE EMISSION EQUATION (1)	INPUT PARAMETERS (2)		EMISSION FACTOR (3)	SCALING FACTOR (PROCESS MEASURED)	UNCONTROLLED TPB EMISSIONS (4)		% CONTROL EFFICIENCY (5)	CONTROLLED TPB EMISSIONS	
				PARAMETER	VALUE			TPB	LB/HR		TPB	LB/HR
20A	HAUL ROAD TO ASH DISPOSAL AREA	HAUL ASH IN DUMP TRUCK TO THE ASH DISPOSAL AREA FOR STACKING (ONE-WAY FULL; GRAVEL ROAD)	UNPAVED ROAD FUGITIVE DUST (AP-41, SEC. 11.2.1.2)	SLT CONTENT, %	24.3	24.85 LB/VMT	150 THR	1.45E+02	3.50E+03 TTR	90	1.45E+01	1.24E+01
				VEHICLE SPEED, MPH	35	3.50E+03 TTR	12 TTRP	0.4 MILES/TTRP				
20B	HAUL ROAD TO ASH DISPOSAL AREA FOR STACKING (ONE-WAY FULL; DIRT ROAD)	HAUL ASH IN DUMP TRUCK TO THE ASH DISPOSAL AREA FOR STACKING (ONE-WAY FULL; DIRT ROAD)	UNPAVED ROAD FUGITIVE DUST (AP-41, SEC. 11.2.1.2)	SLT CONTENT, %	28.3	24.85 LB/VMT	150 THR	9.00E+01	3.50E+03 TTR	90	9.00E+00	7.77E+00
				VEHICLE SPEED, MPH	15	3.50E+03 TTR	12 TTRP	0.35 MILES/TTRP				
20C	HAUL ASH IN DUMP TRUCK TO THE ASH DISPOSAL AREA FOR STACKING (ONE-WAY EMPTY; DIRT ROAD)	HAUL ASH IN DUMP TRUCK TO THE ASH DISPOSAL AREA FOR STACKING (ONE-WAY EMPTY; DIRT ROAD)	UNPAVED ROAD FUGITIVE DUST (AP-41, SEC. 11.2.1.2)	SLT CONTENT, %	28.3	14.43 LB/VMT	150 THR	3.41E+01	3.50E+03 TTR	90	3.41E+00	4.63E+00
				VEHICLE SPEED, MPH	15	3.50E+03 TTR	12 TTRP	0.35 MILES/TTRP				
20D	HAUL DIRT IN DUMP TRUCK TO THE ASH DISPOSAL AREA FOR STACKING (ONE-WAY EMPTY; GRAVEL ROAD)	HAUL DIRT IN DUMP TRUCK TO THE ASH DISPOSAL AREA FOR STACKING (ONE-WAY EMPTY; GRAVEL ROAD)	UNPAVED ROAD FUGITIVE DUST (AP-41, SEC. 11.2.1.2)	SLT CONTENT, %	24.3	14.43 LB/VMT	150 THR	8.65E+01	3.50E+03 TTR	90	8.65E+00	7.42E+00
				VEHICLE SPEED, MPH	11	3.50E+03 TTR	12 TTRP	0.4 MILES/TTRP				
20E	HAUL DIRT IN DUMP TRUCK TO THE ASH DISPOSAL AREA FOR COVER (ONE-WAY FULL; DIRT ROAD)	HAUL DIRT IN DUMP TRUCK TO THE ASH DISPOSAL AREA FOR COVER (ONE-WAY FULL; DIRT ROAD)	UNPAVED ROAD FUGITIVE DUST (AP-41, SEC. 11.2.1.2)	SLT CONTENT, %	24.3	24.17 LB/VMT	120 THR	1.09E+01	4.65E+04 TTR	90	1.09E+00	3.63E+00
				VEHICLE SPEED, MPH	15	4.65E+04 TTR	15 TTRP	0.35 MILES/TTRP				
20F	HAUL ROAD AND PILE WATERING WITH WATER TRUCK FOR DUST SUPPRESSION	HAUL ROAD AND PILE WATERING WITH WATER TRUCK FOR DUST SUPPRESSION	UNPAVED ROAD FUGITIVE DUST (AP-41, SEC. 11.2.1.2)	SLT CONTENT, %	28.3	16.22 LB/VMT	120 THR	6.29E+00	4.65E+04 TTR	90	6.29E+01	1.24E+00
				VEHICLE SPEED, MPH	15	4.65E+04 TTR	15 TTRP	0.35 MILES/TTRP				
20G	HAUL ROAD AND PILE WATERING WITH WATER TRUCK FOR DUST SUPPRESSION	HAUL ROAD AND PILE WATERING WITH WATER TRUCK FOR DUST SUPPRESSION	UNPAVED ROAD FUGITIVE DUST (AP-41, SEC. 11.2.1.2)	SLT CONTENT, %	28.3	17.41 LB/VMT	32 DAYS/YR	3.62E+01	32 DAYS/YR	90	3.62E+00	1.74E+01
				VEHICLE SPEED, MPH	10	32 DAYS/YR	8 HRODAY	10 MILES/HR				

JOHNSONVILLE FOSSIL PLANT, ASH HANDLING PROCESS - ACTUAL PARTICULATE EMISSIONS FROM SIGNIFICANT SOURCES

EMISSION UNIT NUMBER	DESCRIPTION	EMISSION COMPONENT	APPLICABLE EMISSION EQUATION (1)	INPUT PARAMETER VALUE	EMISSION FACTOR	SCALING FACTOR (PROCESS MEASURE)	UNCONTROLLED TSP EMISSIONS		% CONTROL EFFICIENCY (3)		CONTROLLED TSP EMISSIONS
							TSP EMISSIONS	LBHR	TSP EMISSIONS	LBHR	
21A	ASH DISPOSAL AREA	DUMP TRUCK DISCHARGE ASH TO DISPOSAL AREA FOR STACKING	BATCH/CONTINUOUS DROG OPERATIONS (AP-41, SECTION 11.2.1.3)	WIND SPEED, MPH 13	1.47E-04 LBMT	130 T/HR 3.50E+03 T/HR	2.47E-02	2.19E-02	0	2.47E-02	2.19E-02
21B		DUMP TRUCK DISCHARGE DIRT TO DISPOSAL AREA FOR STACK COVER	BATCH/CONTINUOUS DROG OPERATIONS (AP-41, SECTION 11.2.1.3)	WIND SPEED, MPH 13	1.46E-04 LBMT	150 T/HR 3.50E+03 T/HR	6.06E-03	5.19E-02	0	6.06E-03	5.19E-02
21C		OPEN STORAGE PILE WIND EROSION	WIND EROSION FROM OPEN STORAGE PILE (AP-44, SECTION 2.1.1.3)	SILT CONTENT, % WIND FREQ > 13 MPH, % 100	2173 LB(ACRE-DAY)	11.0 ACRES	6.30E-01	1.48E+01	90	6.30E-01	1.48E+01
21D		BULLDOZER GRADING/ROLLER COMPACTING OF ASH STACK	UNPAVED ROAD FLIGHTIVE DUST (AP-41, SEC. 11.2.1.3)	SILT CONTENT, % VEHICLE SPEED, MPH VEHICLE WEIGHT, TONS NO. OF WHEELS WET DAYS/YR 100 5 41 4 119	27.36 LB/VMT	260 DAYS/YR 4 HRODAY 3 MILES/HR	7.10E-01	1.38E+02	75	7.10E-01	1.38E+02
21E		BULLDOZER GRADING/ROLLER COMPACTING DIRT COVER	UNPAVED ROAD FLIGHTIVE DUST (AP-41, SEC. 11.2.1.3)	SILT CONTENT, % VEHICLE SPEED, MPH VEHICLE WEIGHT, TONS NO. OF WHEELS WET DAYS/YR 28.5 5 41 4 119	7.83 LB/VMT	260 DAYS/YR 4 HRODAY 3 MILES/HR	1.04E-01	3.93E+01	75	1.04E-01	3.93E+01

ASH HANDLING PROCESS PARTICULATE EMISSION TOTALS FOR SIGNIFICANT SOURCES:

POINT SOURCE	0.00E+00	0.00E+00	0.00E+00
FLIGHTIVE	4.30E+03	5.83E+02	5.83E+01
EMISSION UNIT 20	1.57E+02	1.93E+02	4.38E+01
EMISSION UNIT 21	2.96E+01	2.96E+01	4.38E+01
TOTAL	4.87E+02	7.77E+02	1.04E+02

NOTES:

- The source of emission equation/factors are:
 - Wind erosion from active (frequently disturbed) piles
 - Batch and continuous drop operations
 - Unpaved roads grading and compacting of ash piles and dirt cover
- The sources for meteorological input parameters are:
 - Average wind speed (3.0 mph) and frequency of winds greater than 12 mph (3.0%)
 - Number of wet days per year (119)
- The sources of control efficiencies are:
 - Wet suppression (for haul trucks)
 - Wet suppression (for ash pile maintenance)
 - Wet suppression, compaction, and crutover (for ash open-storage pile)

REFERENCES:

- EPA-450/5-99-004, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, p. 2-33, Sep. 1992.
- EPA, AP-42, 4th Edition, Supplement B, Section 11.2.1.3, September, 1988.
- EPA, AP-42, 4th Edition, Supplement B, Section 11.2.1.2, September, 1988.
- Knoxville Fossil Plant Meteorological Tower, 1985-87 data base
- NOAA, 1993 Local Climatological Data, Annual Summary with Comparative Data, Nashville, Tennessee, 1942-1993 Average
- 90% (AWMA, Air Pollution Engineering Manual, pp. 143-144, 1992)
- 75% (AWMA, Air Pollution Engineering Manual, pp. 143-144, 1992)
- 90% (DOE/ER/01312-1 (Vol.2), Technical guide for Estimating Fugitive Dust Impacts from Coal Handling Operations, p. 4-7, 1984)

SAMPLE CALCULATIONS FOR THE ASH HANDLING PROCESS JOHNSONVILLE FOSSIL PLANT

All the bottom ash, pyrites, economizer ash, and the fly ash from the mechanical collectors and ESPs at Johnsonville Fossil Plant are collected and pumped as a wet slurry to the active ash pond. The only air emissions that occur in this phase of the wet disposal process are at the vents from the air separator tanks (one for each of the ten boiler units) on the vacuum-producing systems (e.g. HYDROVEYORS), and they are defined as categorically exempt insignificant activities by TAPCR 1200-3-9-.04(5)(f)62 and 1200-3-9-.04(5)(f)109(iv).

After the ash is sluiced to the active ash pond, some of the bottom ash is excavated from the pond inlet, moved to another portion of the pond, and stacked. In addition, some of the remaining ash from the active ash pond is dredged and transferred to an ash disposal area to gain additional sluicing capacity in the active ash pond. Calculations for estimates of fugitive emissions that occur during the excavating operations in the active ash pond are shown in Appendix B. These estimates show this is an insignificant activity because uncontrolled emissions are less than 5 tons per year [TAPCR 1200-3-9-.04(5)(a)4(i)]. These calculations assumed that the only frequently disturbed portion of the active ash pond subject to wind erosions was the portion where bottom ash was excavated and stacked; the remainder of the active ash pond is either submerged under a layer of water or remains wet at all times.

The two significant sources for the ash handling process are (1) the haul roads from the active ash pond to the ash disposal area and (2) the ash disposal area. Current operations dredge ash from the active ash pond and pump to the ash disposal area so the haul roads for hauling ash would not be a source; however, a worst-case scenario is assumed, so haul roads for ash hauling are used to estimate particulate emissions. Haul roads for hauling dirt for stack cover prior to seeding are currently used and are also included in the worst-case scenario to estimate particulate emissions.

MAXIMUM ALLOWABLE EMISSIONS

There is no air permit that limits emission from the ash handling system so no maximum allowable emission calculations were performed. There are no point sources of emission except the air separator vents noted above, and all ash is collected and transferred using a wet process.

ACTUAL EMISSIONS

The preceding table summarizes the estimated actual particulate emissions from the two significant sources in the ash handling process at Johnsonville. All emissions are from fugitive dust sources. The following discussion reviews the assumptions and equations used to estimate the particulate emissions from a representative sample of fugitive dust sources in the process.

(1) Wind Erosion from Active (Frequently Disturbed) Storage Piles

Source: EPA-450/2-92-004, Fugitive Dust Background Document And Technical Information Document For Best Available Control Measures, Section 2.3.1.3, page 2-25, September 1992.

$$E(TSP) = 1.7 \left(\frac{s}{1.5} \right) \left(\frac{d}{235} \right) \left(\frac{f}{15} \right)$$

Where: E = TSP (<30 μ) emission factor, lb/(acre·day) of pile area
 s = Silt content of material, weight %
 d = Number of dry days per year (<0.01 inches of precipitation per day)
 f = Frequency of wind speeds >12 mph at the mean pile height, %

Sample Calculation - Ash Disposal Area (Emission Unit 21C): Open Storage Pile Wind Erosion

For a worst-case scenario, the silt content of fly ash (100%) was used in this calculation. It is realized that the ash at this point is a mixture of fly ash, bottom ash, pyrites, and economizer ash, so the silt content would actually be somewhere intermediate to the silt content of fly ash (100%) and bottom ash (2.5%).

$$E = 1.7 \left(\frac{100}{1.5} \right) \left(\frac{365-119}{235} \right) \left(\frac{3.0}{15} \right) = 23.73 \text{ lb/(acre·day)}$$

The total area to be used for ash stacking is estimated to be 15 acres for each disposal area, and the area exposed as stacked ash will be limited to one disposal area of 15 acres at any one time prior to being covered with a dirt cap and seeded.

Uncontrolled Emissions:

$$\begin{aligned} \text{ANNUAL} &= \frac{23.73 \text{ lb}}{\text{acre·day}} \times 15.0 \text{ acres} \times \frac{365 \text{ day}}{\text{year}} \times \frac{\text{ton}}{2,000 \text{ lb}} = 65.0 \text{ tpy} \\ \text{HOURLY} &= \frac{23.73 \text{ lb}}{\text{acre·day}} \times 15.0 \text{ acres} \times \frac{\text{day}}{24 \text{ hour}} = 14.8 \text{ lb/hr} \end{aligned}$$

Controlled Emissions:

Controlled Emissions = (Uncontrolled emissions) (1-e/100)

Where: e = Control Efficiency (%) = 90%

$$ANNUAL = 65.0 \text{ tpy} \times \left(1 - \frac{90}{100}\right) = 6.50 \text{ tpy}$$

$$HOURLY = 14.8 \text{ lb/hr} \times \left(1 - \frac{90}{100}\right) = 1.48 \text{ lb/hr}$$

(2) Unpaved Road

Source: EPA, AP-42, 4th Edition, Supplement B, Section 11.2.1.2, September 1988

$$E = k (5.9) \left(\frac{s}{12}\right) \left(\frac{S}{30}\right) \left(\frac{W}{3}\right)^{0.7} \left(\frac{w}{4}\right)^{0.5} \frac{(365 - p)}{365}$$

Where: *E* = Emission factor, lb/VMT (VMT = Vehicle Miles Traveled)
k = Particle size multiplier (0.80 for TSP)
s = Silt content of road surface material, weight %
S = Mean vehicle speed, mph
W = Mean vehicle weight, tons
w = Mean number of wheels
p = Number of days per year with at least 0.01" of precipitation

Sample Calculation - Haul Road to Ash Disposal Area (Emission Unit 20A): Haul Ash in Dump Truck to Ash Disposal Area for Stacking, (One-way, Full Load, Gravel Road)

$$E = 0.8(5.9) \times \frac{28.5}{12} \times \frac{15}{30} \times \left(\frac{23}{3}\right)^{0.7} \left(\frac{10}{4}\right)^{0.5} \frac{(365-119)}{365} = 24.85 \text{ lb/VMT}$$

VMT = (Total weight hauled/weight hauled per trip) (length of each trip)

It is assumed that a total of 350,000 tons per year of ash is transferred from the active ash pond to the ash disposal area and it is hauled in dump trucks at a rate of 150 tons per hour.

Uncontrolled Emissions:

$$\begin{aligned} ANNUAL &= \frac{24.85 \text{ lb}}{VMT} \times \frac{350,000 \text{ tons}}{\text{year}} \times \frac{1 \text{ trip}}{12 \text{ tons}} \times \frac{0.4 \text{ miles}}{\text{trip}} \times \frac{\text{ton}}{2,000 \text{ lb}} = 145 \text{ tpy} \\ HOURLY &= \frac{24.85 \text{ lb}}{VMT} \times \frac{150 \text{ tons}}{\text{hour}} \times \frac{1 \text{ trip}}{12 \text{ tons}} \times \frac{0.4 \text{ miles}}{\text{trip}} = 124 \text{ lb/hr} \end{aligned}$$

Controlled Emissions:

Controlled emission = (Uncontrolled emission) (1-e/100)

Where: e = Control Efficiency (%)

The AWMA Air Pollution Engineering Manual, citing field-test data at a coal-fired power plant, indicates that wet suppression methods can effectively control unpaved-road fugitive emissions. TVA believes that an effective watering program will achieve 90 percent control efficiency for ash hauling and open storage pile fugitive emissions.

$$\begin{aligned} ANNUAL &= 145 \text{ tpy} \times \left(1 - \frac{90}{100}\right) = 14.5 \text{ tpy} \\ HOURLY &= 124 \text{ lb/hr} \times \left(1 - \frac{90}{100}\right) = 12.4 \text{ lb/hr} \end{aligned}$$

(3) Batch Drop Operations

Source: EPA, AP-42, 4th Edition, Supplement B, Section 11.2.3.3, September 1988.

$$E = k(0.0032) \frac{\left(\frac{u}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}}$$

Where: E = Particulate emission factor, lb/ton
k = Particle size multiplier, 0.74 for TSP (<30µm)
u = Mean wind speed, mph
M = Material moisture content, weight %

Sample Calculation - Ash Disposal Area (Emission Unit 21A): Dump Truck Discharge Ash to Disposal Area for Stacking

$$E = 0.74(0.0032) \times \frac{\left(\frac{5.0}{5}\right)^{1.3}}{\left(\frac{15}{2}\right)^{1.4}} = 1.41 \times 10^{-4} \text{ lb/ton}$$

Uncontrolled Emissions:

$$\text{ANNUAL} = 1.41 \times 10^{-4} \text{ lb/ton} \times 350,000 \text{ tons/yr} \times \frac{\text{ton}}{2,000 \text{ lb}} = 2.47 \times 10^{-2} \text{ tpy}$$

$$\text{HOURLY} = 1.41 \times 10^{-4} \text{ lb/ton} \times 150 \text{ tons/hr} = 2.12 \times 10^{-2} \text{ lb/hr}$$

Controlled Emissions:

Controlled emissions = (Uncontrolled emissions) (1-e/100)

Where: e = Control Efficiency (%) = 0%

$$\text{ANNUAL} = 2.47 \times 10^{-2} \text{ tpy} \times \left(1 - \frac{0}{100}\right) = 2.47 \times 10^{-2} \text{ tpy}$$

$$\text{HOURLY} = 2.12 \times 10^{-2} \text{ lb/hr} \times \left(1 - \frac{0}{100}\right) = 2.12 \times 10^{-2} \text{ lb/hr}$$

(4) Grading and Compacting with Bulldozer

Source: EPA, AP-42, 4th Edition, Supplement B, Section 11.2.1.2, September 1992

$$E = k(5.9) \left(\frac{s}{12}\right) \left(\frac{S}{30}\right) \left(\frac{W}{3}\right)^{0.7} \left(\frac{w}{4}\right)^{0.5} \frac{(365-p)}{365}$$

Where: E = Emission factor, lb/VMT (VMT = Vehicle Miles Traveled)

k = Particle size multiplier (0.80 for TSP)

s = Silt content of road surface material, weight %

S = Mean vehicle speed, mph

W = Mean vehicle weight, tons

w = Mean number of wheels

p = Number of days per year with at least 0.01" of precipitation

Sample Calculation - Ash Disposal Area (Emission Unit 21D): Bulldozer Grading and Roller Compacting Of Ash Stack

$$E = 0.8(5.9) \times \frac{100}{12} \times \frac{5}{30} \times \left(\frac{41}{3}\right)^{0.7} \left(\frac{4}{4}\right)^{0.5} \frac{(365-119)}{365} = 27.56 \text{ lb/VMT}$$

It is assumed that one bulldozer operated 4 hours per day, 260 days per year at a speed of 5 mph for ash pile maintenance activities. The bulldozer was assumed to have a mean vehicle weight of 41 tons and have an equivalent of 4 wheels.

Uncontrolled Emissions:

$$\text{ANNUAL} = 27.56 \text{ lb/VMT} \times \frac{260 \text{ days}}{\text{yr}} \times \frac{4 \text{ hr}}{\text{day}} \times \frac{5 \text{ miles}}{\text{hr}} \times \frac{\text{ton}}{2,000 \text{ lb}} = 71.6 \text{ tpy}$$
$$\text{HOURLY} = 27.56 \text{ lb/VMT} \times \frac{5 \text{ miles}}{\text{hr}} = 138 \text{ lb/hr}$$

Controlled Emissions:

$$\text{Controlled emissions} = (\text{Uncontrolled emissions}) (1-e/100)$$

Where: e = Control Efficiency (%)

TVA believes that an effective watering program will achieve 75 percent control efficiency for ash pile maintenance fugitive emissions, taking into account realistic limitations in the area that the water truck can cover as compared to the bulldozers.

$$\text{ANNUAL} = 71.6 \text{ tpy} \times \left(1 - \frac{75}{100}\right) = 17.9 \text{ tpy}$$

$$\text{HOURLY} = 138 \text{ lb/hr} \times \left(1 - \frac{75}{100}\right) = 34.4 \text{ lb/hr}$$

ATTACHMENT 5

**Emission Factors (Table 5-2 of Application) and Calculation of Particulate
Emissions from Coal Handling Facility
(43-0011-29)**

Pages 5-20 through 5-30 from 11-18-96 Permit Application

JOHNSONVILLE FOSSIL PLANT: SOLID-FUEL HANDLING PROCESS - ACTUAL PARTICULATE EMISSIONS FROM SIGNIFICANT SOURCES
 TABLE 5-2
 JULY, 1993-JUNE, 1994

EMISSION UNIT NUMBER	DESCRIPTION	EMISSION UNIT COMPONENT	APPLICABLE EMISSION EQUATION (1)	INPUT PARAMETERS (2)		EMISSION FACTOR (3) LB/(ACRE-DAY)	SCALING FACTOR (PROCESS MEASURE)	UNCONTROLLED TSP EMISSIONS		% CONTROL EFFICIENCY (3)	CONTROLLED TSP EMISSIONS	
				PARAMETER	VALUE			T/HR	LB/HR		T/HR	LB/HR
18A	COAL STORAGE YARD	OPEN STORAGE PILE WIND EROSION	WIND EROSION FROM ACTIVE STORAGE PILE (EPA-4202-92-004 SECTION 2.1.1.3)	WIND CONTENT, %	119	0.93 LB/(ACRE-DAY)	11.7 ACRES	2.34E+00	3.34E-01	0	2.34E+00	3.34E-01
18B		PAN SCRAPERS STOCKOUT HAULING (ONE-WAY FULL)	UNPAVED ROAD FUGITIVE DUST (AP-42, SEC. 11.2.1.2)	WIND FREQ > 11 MPH, %	5	3.05 LB/VMT	2,000 T/HR 9.22E+05 T/YR 22.3 T/TRIP 500 FT/TRIP	9.79E+00	4.23E+01	75	2.43E+00	1.06E+01
18C		PAN SCRAPERS STOCKOUT HAULING (ONE-WAY EMPTY)	UNPAVED ROAD FUGITIVE DUST (AP-42, SEC. 11.2.1.2)	WIND FREQ > 11 MPH, %	119	3.93 LB/VMT	2,000 T/HR 9.22E+05 T/YR 22.3 T/TRIP 500 FT/TRIP	7.43E+00	3.31E+01	75	1.91E+00	8.37E+00
18D		PAN SCRAPERS DISCHARGE COAL TO STORAGE PILE	BATCH/CONTINUOUS DROP OPERATIONS (AP-42, SECTION 11.2.1.3)	AVG WIND SPEED, MPH	10	2.49E-04 LB/T	2,000 T/HR 9.22E+05 T/YR	1.15E+01	4.98E-01	0	1.15E+01	4.98E-01
18E		PAN SCRAPERS RECLAIM HAULING (ONE-WAY FULL)	UNPAVED ROAD FUGITIVE DUST (AP-42, SEC. 11.2.1.2)	WIND FREQ > 11 MPH, %	119	3.03 LB/VMT	2,000 T/HR 9.22E+05 T/YR 22.3 T/TRIP 500 FT/TRIP	9.79E+00	4.23E+01	75	2.43E+00	1.06E+01
18F		PAN SCRAPERS RECLAIM HAULING (ONE-WAY EMPTY)	UNPAVED ROAD FUGITIVE DUST (AP-42, SEC. 11.2.1.2)	WIND FREQ > 11 MPH, %	119	3.93 LB/VMT	2,000 T/HR 9.22E+05 T/YR 22.3 T/TRIP 500 FT/TRIP	7.43E+00	3.31E+01	75	1.91E+00	8.37E+00
18G		BULLDOZER GRADING AND COMPACTING COAL PILE FOR PILE MAINTENANCE	UNPAVED ROAD FUGITIVE DUST (AP-42, SEC. 11.2.1.2)	WIND FREQ > 11 MPH, %	119	1.54 LB/VMT	260 DAYS/YR 4 HOURS/DAY 3 MILES/HR	4.06E+00	7.69E+00	0	4.06E+00	7.69E+00
18H		HALL ROAD WATERING WITH WATERING TRUCK FOR DUST SUPPRESSION	UNPAVED ROAD FUGITIVE DUST (AP-42, SEC. 11.2.1.2)	WIND FREQ > 11 MPH, %	119	3.44 LB/VMT	33 DAYS/YR 8 HOURS/DAY 10 MILES/HR	3.08E+00	2.44E+01	75	1.27E+00	6.11E+00
19A	SCREENING AND CRUSHING STATION #1 AND #2	COAL DISCHARGE FROM CONVEYOR BC-3 TO SCREENS/CRUISHER	BATCH/CONTINUOUS DROP OPERATIONS (AP-42, SECTION 11.2.1.3)	AVG WIND SPEED, MPH	5	2.49E-04 LB/T	1,000 T/HR 1.84E+06 T/YR	2.29E-01	2.49E-01	70	6.88E-02	7.46E-02
19B		COAL DISCHARGE FROM CONVEYOR BC-13 TO SCREENS/CRUISHER	BATCH/CONTINUOUS DROP OPERATIONS (AP-42, SECTION 11.2.1.3)	AVG WIND SPEED, MPH	5	2.49E-04 LB/T	1,000 T/HR 1.84E+06 T/YR	2.29E-01	2.49E-01	70	6.88E-02	7.46E-02
19C		COAL DISCHARGE FROM CONVEYOR BC-15 TO SCREENS/CRUISHER	BATCH/CONTINUOUS DROP OPERATIONS (AP-42, SECTION 11.2.1.3)	AVG WIND SPEED, MPH	5	2.49E-04 LB/T	1,000 T/HR 1.84E+06 T/YR	2.29E-01	2.49E-01	70	6.88E-02	7.46E-02

JOHNSONVILLE FOSSIL PLANT: SOLID-FUEL HANDLING EMISSIONS FROM SIGNIFICANT SOURCES
 TABLE (Continued)
 JULY 1993-JUNE 1994

EMISSION UNIT NUMBER	DESCRIPTION	EMISSION UNIT COMPONENT	APPLICABLE EMISSION EQUATION (E) PRIMARY CRUISER WITH HIGH MOISTURE CORE (AP-42, SECTION 11.2.3)	INPUT PARAMETERS (C) PARAMETER VALUE	EMISSION FACTOR	SCALING FACTOR (PROCESS MEASURED)	UNCONTROLLED EMISSIONS		% CONTROL EFFICIENCY (F)	CONTROLLED EMISSIONS	
							T/HR	LB/HR		T/HR	LB/HR
19D	SCREENING AND CRUSHING STATION #1 AND #2 (CONTINUED)	SCREENED/CRUSHED COAL DISCHARGE FROM CONVEYORS BC-1, BC-13, AND BC-15 (25% OF FEED TO CRUSHERS)			0.02 LB/T	5100 T/HR 9.22E+05 T/HR	9.22E+00	1.00E+01	70	2.77E+00	3.00E+00
19E		COAL DISCHARGE FROM SCREENS/CRUSHERS TO CONVEYOR BC-4 AND CONVEYOR BC-20	BATCH/CONTINUOUS DROP OPERATIONS (AP-42, SECTION 11.2.3.3)	R40 CONTENT, % AVG WIND SPEED, MPH	2.49E-04 LB/T	2,000 T/HR 3.69E+06 T/HR	4.59E-01	4.98E-01	70	1.38E-01	1.49E-01

SOLID-FUEL HANDLING PROCESS PARTICULATE EMISSION TOTALS FOR SIGNIFICANT SOURCES:

POINT-SOURCE	0.00E+00	0.00E+00	8.00E+00	0.00E+00
ESCAPE	4.66E-01	1.94E-02	1.64E-01	5.26E-01
EMISSION UNIT 18	1.01E-01	1.10E-01	2.04E-00	3.06E-00
EMISSION UNIT 19	1.63E-01	1.95E-02	1.99E-01	5.59E-01
TOTAL				

THE TOTALS ABOVE DO NOT INCLUDE EMISSION UNIT NUMBER 19B; THIS CONVEYOR TRANSFER FROM THE RAILCAR AND TRUCK UNLOADING STATION IS OUT OF SERVICE AND NOT EXPECTED TO BE USED. UNIT 19B CALCULATIONS ARE BASED ON 50% OF TOTAL PLANT COAL FEED TO SHOW POTENTIAL EMISSIONS FOR ILLUSTRATIVE PURPOSES; HOWEVER, INCLUDING THIS NUMBER IN THE TOTAL WOULD OVERSTATE THE EMISSIONS.

NOTES:

- (1) The source of emission coefficients are:
 - (a) Wind erosion from active (frequently disturbed) piles
 - (b) Batch and continuous drop operations
 - (c) Unspread road grading and compacting of coal pile
 - (d) Coal crushers, primary and secondary
- (2) The source for meteorological input parameters are:
 - (a) Average wind speed (3.0 mph) and frequency of winds greater than 12 mph (5.0%)
 - (b) Number of wet days per year (119)
- (3) The source of control efficiencies are:
 - (a) Enclosures of conveyors and transfer points
 - (b) Wet suppression (for haul roads)

REFERENCES:

- EPA-450/2-92-004, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, p 2-25, Sept. 1992.
- EPA, AP-42, 4th Edition, Supplement B, Section 11.2.3.1, September, 1988.
- EPA, AP-42, 4th Edition, Supplement B, Section 11.2.1.2, September, 1988.
- EPA, AP-42, Supplement A, Section 8.2.3.2, Table 8.2.3.1-1, August, 1982.
- Johnsonville Fossil Plant Meteorological Tower, 1983-87 data base
- NOAA, 1992 Local Climatological Data, Annual Summary with Comparative Data, Nashville, Tennessee, 1942-1993 Average
- 70% (AWMA, Air Pollution Engineering Manual, p. 794, 1992)
- 75% (AWMA, Air Pollution Engineering Manual, pp. 143-144, 1992)

**SAMPLE CALCULATIONS FOR THE SOLID-FUEL HANDLING PROCESS
JOHNSONVILLE FOSSIL PLANT**

MAXIMUM ALLOWABLE EMISSIONS

The only quantitative emission limit applying to the solid-fuel handling process is the particulate matter (PM) emissions standard of 82 pounds per hour based on the process weight rate. In the existing air permit, this limit applies only to the point sources (cyclone collectors). The existing point sources in the solid-fuel handling process are the dust collectors for the powerhouse bunkers and coal scales. Calculations in Appendix B show the powerhouse bunkers dust collectors are not a significant source and the coal scales dust collectors are an exempt source [TAPCR 1200-3-9-.04(5)(f)109(ii)]. Therefore, there are no significant point sources shown in the solid-fuel handling process. At one point in time, a Rotoclone dust collector was in operation at the Screening and Crushing Stations #1 and #2 (Emission Unit 19), however a January 9, 1984, letter transmitting permit application information for the solid-fuel handling facility indicated that equipment was no longer operational. Therefore, the fugitive dust equations shown in the sample calculations and the attached summary table were used to calculate the uncontrolled emissions generated at that emission unit and an estimated 70% control efficiency based on an enclosure was applied to predict the controlled emissions from that unit and this value is used to estimate potential annual emissions.

ACTUAL EMISSIONS

Currently coal is the only solid fuel burned at Johnsonville Fossil Plant. The following discussion reviews the assumptions and equations used to generate particulate emissions estimates for a representative sample of fugitive dust sources in the solid-fuel handling process.

Johnsonville Fossil Plant has two parallel lines of barge unloaders and conveyors feeding the powerhouse. Each has a current capacity of 700 tons per hour, 1,400 tons per hour total. The calculations for actual fugitive emissions are based on a total capacity of 2,000 tons per hour to allow for potential future upgrades of each conveyor line to 1,000 tons per hour.

A rail car thawer has been installed as part of this process, but is no longer in service. It is electrically heated, so there are no combustion emissions from this unit and it is not included in the sample calculations and emissions summary for the solid-fuel handling process.

(1) Wind Erosion from Active (Frequently Disturbed) Storage Piles

Source: EPA-450/2-92-004, Fugitive Dust Background Document And Technical Information Document For Best Available Control Measures, Section 2.3.1.3, page 2-25, September 1992.

$$E(TSP) = 1.7 \left(\frac{s}{1.5} \right) \left(\frac{d}{235} \right) \left(\frac{f}{15} \right)$$

Where: E = TSP (<30 μ) emission factor, lb/(acre·day) of pile area
 s = Silt content of material, weight %
 d = Number of dry days per year (<0.01 inches of precipitation per day)
 f = Frequency of wind speeds greater than 12 mph at the mean pile height, %

Sample Calculation - Coal Storage Yard (Emission Unit 18A): Open Storage Pile Wind Erosion

$$E = 1.7 \left(\frac{4.0}{1.5} \right) \left(\frac{365-119}{235} \right) \left(\frac{3.0}{15} \right) = 0.95 \text{ lb/(acre·day)}$$

The footprint for the coal storage pile under extreme operations (45-day supply assumed at full coal burn) is approximately 13.5 acres according to recently redesigned stockpile.

Uncontrolled Emissions:

$$\begin{aligned} \text{ANNUAL} &= \frac{0.95 \text{ lb}}{\text{acre·day}} \times 13.5 \text{ acres} \times \frac{365 \text{ day}}{\text{year}} \times \frac{\text{ton}}{2,000 \text{ lb}} = 2.34 \text{ tpy} \\ \text{HOURLY} &= \frac{0.95 \text{ lb}}{\text{acre·day}} \times 13.5 \text{ acres} \times \frac{\text{day}}{24 \text{ hour}} = 0.534 \text{ lb/hr} \end{aligned}$$

Controlled Emissions:

$$\text{Controlled Emissions} = (\text{Uncontrolled emissions}) (1 - e/100)$$

Where: e = Control Efficiency (%) = 0%

$$\text{ANNUAL} = 2.34 \text{ tpy} \times \left(1 - \frac{0}{100}\right) = 2.34 \text{ tpy}$$

$$\text{HOURLY} = 0.534 \text{ lb/hr} \times \left(1 - \frac{0}{100}\right) = 0.534 \text{ lb/hr}$$

(2) Unpaved Road

Source: EPA, AP-42, 4th Edition, Supplement B, Section 11.2.1.2, September 1988

$$E = k (5.9) \left(\frac{s}{12}\right) \left(\frac{S}{30}\right) \left(\frac{W}{3}\right)^{0.7} \left(\frac{w}{4}\right)^{0.5} \frac{(365 - p)}{365}$$

Where: E = Emission factor, lb/VMT (VMT = Vehicle Miles Traveled)
 k = Particle size multiplier (0.80 for TSP)
 s = Silt content of road surface material, weight %
 S = Mean vehicle speed, mph
 W = Mean vehicle weight, tons
 w = Mean number of wheels
 p = Number of days per year with at least 0.01" of precipitation

Sample Calculation - Coal Storage Yard (Emission Unit 18B): Pan Scrapers Stockout Hauling, One-way, Full Load

$$E = 0.8(5.9) \times \frac{4.0}{12} \times \frac{15}{30} \times \left(\frac{75}{3}\right)^{0.7} \left(\frac{4}{4}\right)^{0.5} \frac{(365-119)}{365} = 5.05 \text{ lb/VMT}$$

VMT = (Total weight hauled/weight hauled per trip) (length of each trip)

For calculation of estimated emissions, 25% of total coal unloaded through the barge unloading stations is stocked out to the coal storage yard. The remaining 75% of the coal unloaded is fed directly to the powerhouse. The coal stocked out and reclaimed (sum of both operations) averaged 36% of coal receipts for 1988-1994, so the values used in the calculations (25% stockout and 25% reclaim) should be conservative ones.

Uncontrolled Emissions:

$$ANNUAL = \frac{5.05 \text{ lb}}{VMT} \times 0.25 \times \frac{3.69 \times 10^6 \text{ tons}}{\text{year}} \times \frac{1 \text{ trip}}{22.5 \text{ tons}} \times \frac{500 \text{ feet}}{\text{trip}} \times \frac{\text{mile}}{5,280 \text{ feet}} \\ \times \frac{\text{ton}}{2,000 \text{ lb}} = 9.79 \text{ tpy}$$

$$HOURLY = \frac{5.05 \text{ lb}}{VMT} \times \frac{2,000 \text{ tons}}{\text{hour}} \times \frac{1 \text{ trip}}{22.5 \text{ tons}} \times \frac{500 \text{ feet}}{\text{trip}} \times \frac{\text{mile}}{5,280 \text{ feet}} = 42.5 \text{ lb/hr}$$

Controlled Emissions:

$$\text{Controlled emission} = (\text{Uncontrolled emission}) (1 - e/100)$$

Where: e = Control Efficiency (%)

The AWMA Air Pollution Engineering Manual, citing field-test data at a coal-fired power plant, indicates that wet suppression methods can effectively control unpaved-road fugitive emissions. TVA believes that an effective watering program will achieve 75 percent control efficiency for coal storage yard stockout/reclaim fugitive emissions, taking into account realistic limitations in the area that the water truck can cover as compared to the pan scrapers.

$$ANNUAL = 9.79 \text{ tpy} \times \left(1 - \frac{75}{100}\right) = 2.45 \text{ tpy}$$

$$HOURLY = 42.5 \text{ lb/hr} \times \left(1 - \frac{75}{100}\right) = 10.6 \text{ lb/hr}$$

(3) Batch Drop Operations

Source: EPA, AP-42, 4th Edition, Supplement B, Section 11.2.3.3, September 1988.

$$E = k(0.0032) \frac{\left(\frac{u}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}}$$

Where: E = Particulate emission factor, lb/ton
 k = Particle size multiplier, 0.74 for TSP ($<30\mu\text{m}$)
 u = Mean wind speed, mph
 M = Material moisture content, weight %

Sample Calculation - Coal Storage Yard (Emission Unit 18D): Pan Scraper Discharge Coal to Storage Pile

The average coal moisture for the previous 5-year period (fiscal years 1990-1994) was 10.0%, so this value is used for the material moisture content.

$$E = 0.74(0.0032) \times \frac{\left(\frac{5.0 \text{ mph}}{5}\right)^{1.3}}{\left(\frac{10}{2}\right)^{1.4}} = 2.49 \times 10^{-4} \text{ lb/ton}$$

It is assumed that for worst-case, 25% of total coal unloaded through the barge unloading station is stocked out and then hauled and dumped to the coal storage pile by pan scrapers.

Uncontrolled Emissions:

$$\text{ANNUAL} = 2.49 \times 10^{-4} \text{ lb/ton} \times 0.25 \times 3.69 \times 10^6 \text{ tons/yr} \times \frac{\text{ton}}{2,000 \text{ lb}} = 1.15 \times 10^{-1} \text{ tpy}$$
$$\text{HOURLY} = 2.49 \times 10^{-4} \text{ lb/ton} \times 2,000 \text{ tons/hr} = 4.98 \times 10^{-1} \text{ lb/hr}$$

Controlled Emissions:

Controlled emissions = (Uncontrolled emissions) (1-e/100)

Where: e = Control Efficiency (%) = 0%

$$ANNUAL = 1.15 \times 10^{-1} \text{ tpy} \times \left(1 - \frac{0}{100}\right) = 1.15 \times 10^{-1} \text{ tpy}$$

$$HOURLY = 4.98 \times 10^{-1} \text{ lb/hr} \times \left(1 - \frac{0}{100}\right) = 4.98 \times 10^{-1} \text{ lb/hr}$$

The same equations and procedures are used to calculate coal dust emissions from the clamshell operation at the Barge Unloading Station (Insignificant Activities in Appendix B).

(4) Grading and Compacting with Bulldozer

Source: EPA, AP-42, 4th Edition, Supplement B, Section 11.2.1.2, September, 1992

$$E = k(5.9) \left(\frac{s}{12}\right) \left(\frac{S}{30}\right) \left(\frac{W}{3}\right)^{0.7} \left(\frac{w}{4}\right)^{0.5} \frac{(365-p)}{365}$$

Where: *E* = Emission factor, lb/VMT (VMT = Vehicle Miles Traveled)
k = Particle size multiplier (0.80 for TSP)
s = Silt content of road surface material, weight %
S = Mean vehicle speed, mph
W = Mean vehicle weight, tons
w = Mean number of wheels
p = Number of days per year with at least 0.01" of precipitation

Sample Calculation - Coal Storage Yard (Emission Unit 18G): Bulldozer Grading and Compacting Coal Pile

$$E = 0.8(5.9) \times \frac{4.0}{12} \times \frac{5}{30} \times \left(\frac{61}{3}\right)^{0.7} \left(\frac{4}{4}\right)^{0.5} \frac{(365-119)}{365} = 1.54 \text{ lb/VMT}$$

It is assumed that one bulldozer operated 4 hours per day, 260 days per year at a speed of 5 mph for coal pile maintenance activities. The bulldozer currently used has a vehicle weight of 61 tons and is assumed to have an equivalent of 4 wheels.

Uncontrolled Emissions:

$$ANNUAL = 1.54 \text{ lb/VMT} \times \frac{260 \text{ days}}{\text{yr}} \times \frac{4 \text{ hr}}{\text{day}} \times \frac{5 \text{ miles}}{\text{hr}} \times \frac{\text{ton}}{2,000 \text{ lb}} = 4.00 \text{ tpy}$$

$$HOURLY = 1.54 \text{ lb/VMT} \times \frac{5 \text{ miles}}{\text{hr}} = 7.69 \text{ lb/hr}$$

Controlled Emissions:

Controlled emissions = (Uncontrolled emissions) (1-e/100)

Where: e = Control Efficiency (%) = 0%

$$ANNUAL = 4.00 \text{ tpy} \times \left(1 - \frac{0}{100}\right) = 4.00 \text{ tpy}$$

$$HOURLY = 7.69 \text{ lb/hr} \times \left(1 - \frac{0}{100}\right) = 7.69 \text{ lb/hr}$$

(5) Continuous Drop Operations

Source: EPA, AP-42, 4th Edition, Supplement B, Section 11.2.3.3, September 1988

$$E = k(0.0032) \frac{\left(\frac{u}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}}$$

Where: E = Uncontrolled particulate emission factor, lb/ton
 k = Particle size multiplier, 0.74 for TSP (<30µm)
 u = Mean wind speed, mph
 M = Material moisture content, weight %

Sample Calculation - Screening and Crushing Station #1 and #2 (Emission Unit 19A): Coal Discharge from Conveyor BC-3 to Screens/Crusher

$$E = 0.74(0.0032) \frac{\left(\frac{5.0}{5}\right)^{1.3}}{\left(\frac{10}{2}\right)^{1.4}} = 2.49 \times 10^{-4} \text{ lb/ton}$$

It is assumed that one-half of the coal burned at Johnsonville Boiler Units 1 - 10 during July 1993 - June 1994 was handled through this conveyor. The conveyor has a current maximum capacity of 700 tons/hr, but an anticipated upgrade to 1,000 tons/hr is expected in the future. The higher number is used for these hourly calculations.

Uncontrolled Emissions:

$$\begin{aligned} \text{ANNUAL} &= 2.49 \times 10^{-4} \text{ lb/ton} \times 0.5 \times 3.69 \times 10^6 \text{ tons/yr} \times \frac{\text{ton}}{2,000 \text{ lb}} = 2.29 \times 10^{-1} \text{ tpy} \\ \text{HOURLY} &= 2.49 \times 10^{-4} \text{ lb/ton} \times 1,000 \text{ tons/hr} = 2.49 \times 10^{-1} \text{ lb/hr} \end{aligned}$$

Controlled Emissions:

Controlled emissions = (Uncontrolled emissions) (1-e/100)

Where: e = Control Efficiency (%)

The discharge from conveyor BC-3 occurs inside the screening and crushing station, and the coal falls within an enclosed chute to screens and crushers, which are enclosed. Enclosure control efficiencies for conveyor transfer emissions are listed in the 70 - 90% range. Emissions are conservatively estimated using the lower value given in the AWMA, Air Pollution Manual, Page 794, Table 3, 1992.

$$\begin{aligned} \text{ANNUAL} &= 2.29 \times 10^{-1} \text{ tpy} \times \left(1 - \frac{70}{100}\right) = 6.88 \times 10^{-2} \text{ tpy} \\ \text{HOURLY} &= 2.49 \times 10^{-1} \text{ lb/hr} \times \left(1 - \frac{70}{100}\right) = 7.46 \times 10^{-2} \text{ lb/hr} \end{aligned}$$

(6) Screening and Crushing

Source: EPA, AP-42, Section 8.23.2, August 1982

Coal is either directly transferred from the barge unloading stations to the powerhouse or it is stocked out in the coal storage yard and reclaimed to feed to the powerhouse. All this coal is fed through the Screening and Crushing Station #1 and #2 where it is screened and approximately 25% of the coal feed is screened oversize material that is fed to the crusher; the remaining 75% bypasses the crushers. Each of these two hammermill crushers has a capacity of 700 tons per hour. The crushers are assumed to be primary crushers therefore an emission factor of 0.02 pounds per ton is used. This factor for high-moisture ore is assumed for the process since the definition of high-moisture ore is a moisture content of 4% by weight or greater. Coal moisture at Johnsonville Fossil Plant averaged 10% moisture for the five previous fiscal years (1990-1994), so the coal would be a high-moisture ore.

Sample Calculation - Screening and Crushing Stations #1 and #2 (Emission Unit 19D):
Screen/Crush Coal Discharged from BC-3 and BC-13 Conveyors.

Uncontrolled Emissions:

$$\begin{aligned} \text{ANNUAL} &= 0.02 \text{ lb/ton} \times 0.25 \times 3.69 \times 10^6 \text{ tons/yr} \times \frac{\text{ton}}{2,000 \text{ lb}} = 9.22 \text{ tpy} \\ \text{HOURLY} &= 0.02 \text{ lb/ton} \times 0.25 \times 2,000 \text{ tons/hr} = 10.0 \text{ lb/hr} \end{aligned}$$

Controlled Emissions:

Controlled emissions = (Uncontrolled emissions) (1-e/100)

Where: e = Control Efficiency (%) = 70%

Using 70% as control efficiency for an enclosure, the controlled emissions are:

$$\begin{aligned} \text{ANNUAL} &= 9.22 \text{ tpy} \times \left(1 - \frac{70}{100}\right) = 2.77 \text{ tpy} \\ \text{HOURLY} &= 10.0 \text{ lb/hr} \times \left(1 - \frac{70}{100}\right) = 3.00 \text{ lb/hr} \end{aligned}$$

ATTACHMENT 6

**AP-42 Emission Factors for Coal and Wood Combustion (Tables 1.1-19 and
1.6-3)**

And

**AP-42 Emission Factors for Natural Gas and Fuel Oil Combustion in Turbines
(Tables 3.1-1 and 3.1-2a)**

And

**Manufacturer's Emissions Data and Emissions Calculations for Combustion
Turbines of Source 11-26**

**Pages 4-50, 4-54, 4-55, and 4-59 of
May 2001 Permit Application Revisions**

Table 1.1-19. EMISSION FACTORS FOR CH₄, TNMOC, AND N₂O FROM BITUMINOUS AND SUBBITUMINOUS COAL COMBUSTION^a

Firing Configuration	SCC	CH ₄ ^b		TNMOC ^{b,c}		N ₂ O ^d	
		Emission Factor (lb/ton)	EMISSION FACTOR RATING	Emission Factor (lb/ton)	EMISSION FACTOR RATING	Emission Factor (lb/ton)	EMISSION FACTOR RATING
PC-fired, dry bottom, wall fired	1-01-002-02/22	0.04	B	0.06	B	0.03	B
	1-02-002-02/22						
	1-03-002-06/22						
PC-fired, dry bottom, tangentially fired	1-01-002-12/26	0.04	B	0.06	B	0.08	B
	1-02-002-12/26						
	1-03-002-16/26						
PC-fired, wet bottom	1-01-002-01/21	0.05	B	0.04	B	0.08	E
	1-02-002-01/21						
	1-03-002-05/21						
Cyclone furnace	1-01-002-03/23	0.01	B	0.11	B	0.09 ^e	E
	1-02-002-03/23						
	1-03-002-03/23						
Spreader stoker	1-01-002-04/24	0.06	B	0.05	B	0.04 ^f	D
	1-02-002-04/24						
	1-03-002-09/24						
Spreader stoker, with multiple cyclones, and reinjection	1-01-002-04/24	0.06	B	0.05	B	0.04 ^f	E
	1-02-002-04/24						
	1-03-002-09/24						
Spreader stoker, with multiple cyclones, no reinjection	1-01-002-04/24	0.06	B	0.05	B	0.04 ^f	E
	1-02-002-04/24						
	1-03-002-09/24						

Table 1.1-19 (cont.).

Firing Configuration	SCC	CH ₄ ^b		TNMOC ^{b,e}		N ₂ O ^d	
		Emission Factor (lb/ton)	EMISSION FACTOR RATING	Emission Factor (lb/ton)	EMISSION FACTOR RATING	Emission Factor (lb/ton)	EMISSION FACTOR RATING
Overfeed stoker ^f	1-01-002-05/25 1-02-002-05/25 1-03-002-07/25	0.06	B	0.05	B	0.04 ^f	E
Overfeed stoker, with multiple cyclones ^g	1-01-002-05/25 1-02-002-05/25 1-03-002-07/25	0.06	B	0.05	B	0.04 ^f	E
Underfeed stoker	1-02-002-06 1-03-002-08	0.8	B	1.3	B	0.04 ^f	E
Underfeed stoker, with multiple cyclone	1-02-002-06 1-03-002-08	0.8	B	1.3	B	0.04 ^f	E
Hand-fed units	1-03-002-14	5	E	10	E	0.04 ^f	E
FBC, bubbling bed	1-01-002-17 1-02-002-17 1-03-002-17	0.06 ^h	E	0.05 ^h	E	3.5 ^h	B
FBC, circulating bed	1-01-002-18 1-02-002-18 1-03-002-18	0.06	E	0.05	E	3.5	B

^a Factors represent uncontrolled emissions unless otherwise specified and should be applied to coal feed, as fired. SCC = Source Classification Code. To convert from lb/ton to kg/Mg, multiply by 0.5.

^b Reference 32. Nominal values achievable under normal operating conditions; values 1 or 2 orders of magnitude higher can occur when combustion is not complete.

^c TNMOC are expressed as C₂ to C₁₀ alkane equivalents (Reference 71). Because of limited data, the effects of firing configuration on TNMOC emission factors could not be distinguished. As a result, all data were averaged collectively to develop a single average emission factor for pulverized coal units, cyclones, spreaders, and overfeed stokers.

^d References 14-15.

Table 1.6-3. EMISSION FACTORS FOR SPECIATED ORGANIC COMPOUNDS, TOC, VOC, NITROUS OXIDE, AND CARBON DIOXIDE FROM WOOD RESIDUE COMBUSTION^a

Organic Compound	Average Emission Factor ^b (lb/MMBtu)	EMISSION FACTOR RATING
Acenaphthene	9.1 E-07 ^c	B
Acenaphthylene	5.0 E-06 ^d	A
Acetaldehyde	8.3 E-04 ^e	A
Acetone	1.9 E-04 ^f	D
Acetophenone	3.2 E-09 ^g	D
Acrolein	4.0 E-03 ^h	C
Anthracene	3.0 E-06 ⁱ	A
Benzaldehyde	<8.5 E-07 ^j	D
Benzene	4.2 E-03 ^k	A
Benzo(a)anthracene	6.5 E-08 ^l	B
Benzo(a)pyrene	2.6 E-06 ^m	A
Benzo(b)fluoranthene	1.0 E-07 ⁿ	B
Benzo(e)pyrene	2.6 E-09 ^f	D
Benzo(g,h,i)perylene	9.3 E-08 ⁿ	B
Benzo(j,k)fluoranthene	1.6 E-07 ^o	D
Benzo(k)fluoranthene	3.6 E-08 ^p	B
Benzoic acid	4.7 E-08 ^q	D
bis(2-Ethylhexyl)phthalate	4.7 E-08 ^q	D
Bromomethane	1.5 E-05 ^f	D
2-Butanone (MEK)	5.4 E-06 ^f	D
Carbazole	1.8 E-06 ^f	D
Carbon tetrachloride	4.5 E-05 ^r	D
Chlorine	7.9 E-04 ^s	D
Chlorobenzene	3.3 E-05 ^f	D
Chloroform	2.8 E-05 ^f	D
Chloromethane	2.3 E-05 ^f	D
2-Chloronaphthalene	2.4 E-09 ^f	D
2-Chlorophenol	2.4 E-08 ^u	C
Chrysene	3.8 E-08 ^c	B
Crotonaldehyde	9.9 E-06 ^j	D
Decachlorobiphenyl	2.7 E-10 ^r	D
Dibenzo(a,h)anthracene	9.1 E-09 ^l	B
1,2-Dibromoethene	5.5 E-05 ^f	D
Dichlorobiphenyl	7.4 E-10 ^r	C
1,2-Dichloroethane	2.9 E-05 ^r	D
Dichloromethane	2.9 E-04 ^v	D
1,2-Dichloropropane	3.3 E-05 ^f	D
2,4-Dinitrophenol	1.8 E-07 ^w	C
Ethylbenzene	3.1 E-05 ^f	D
Fluoranthene	1.6 E-06 ^x	B
Fluorene	3.4 E-06 ⁱ	A
Formaldehyde	4.4 E-03 ^y	A
Heptachlorobiphenyl	6.6E-11 ^r	D

Table 1.6-3. (cont.)

Organic Compound	Average Emission Factor ^b (lb/MMBtu)	EMISSION FACTOR RATING
Hexachlorobiphenyl	5.5 E-10 ^r	D
Hexanal	7.0 E-06 ^r	D
Heptachlorodibenzo-p-dioxins	2.0 E-09 ^{aa}	C
Heptachlorodibenzo-p-furans	2.4 E-10 ^{aa}	C
Hexachlorodibenzo-p-dioxins	1.6 E-06 ^{aa}	C
Hexachlorodibenzo-p-furans	2.8 E-10 ^{aa}	C
Hydrogen chloride	1.9 E-02 ^j	C
Indeno(1,2,3,c,d)pyrene	8.7 E-08 ^l	B
Isobutyraldehyde	1.2 E-05 ^r	D
Methane	2.1 E-02 ^r	C
2-Methylnaphthalene	1.6 E-07 ^r	D
Monochlorobiphenyl	2.2 E-10 ^r	D
Naphthalene	9.7 E-05 ^{ab}	A
2-Nitrophenol	2.4 E-07 ^w	C
4-Nitrophenol	1.1 E-07 ^w	C
Octachlorodibenzo-p-dioxins	6.6 E-08 ^{aa}	B
Octachlorodibenzo-p-furans	8.8 E-11 ^{aa}	C
Pentachlorodibenzo-p-dioxins	1.5 E-09 ^{aa}	B
Pentachlorodibenzo-p-furans	4.2 E-10 ^{aa}	C
Pentachlorobiphenyl	1.2 E-09 ^r	D
Pentachlorophenol	5.1 E-08 ^{ac}	C
Perylene	5.2 E-10 ^f	D
Phenanthrene	7.0 E-06 ^{ad}	B
Phenol	5.1 E-05 ^{ae}	C
Propanal	3.2 E-06 ^r	D
Propionaldehyde	6.1 E-05 ^f	D
Pyrene	3.7 E-06 ^{af}	A
Styrene	1.9 E-03 ^r	D
2,3,7,8-Tetrachlorodibenzo-p-dioxins	8.6 E-12 ^{aa}	C
Tetrachlorodibenzo-p-dioxins	4.7 E-10 ^{aa}	C
2,3,7,8-Tetrachlorodibenzo-p-furans	9.0 E-11 ^{aa}	C
Tetrachlorodibenzo-p-furans	7.5 E-10 ^{aa}	C
Tetrachlorobiphenyl	2.5 E-09 ^r	D
Tetrachloroethene	3.8 E-05 ^t	D
o-Tolualdehyde	7.2 E-06 ^j	D
p-Tolualdehyde	1.1 E-05 ^r	D
Toluene	9.2 E-04 ^r	C
Trichlorobiphenyl	2.6 E-09 ^r	C
1,1,1-Trichloroethane	3.1 E-05 ^t	D
Trichloroethene	3.0 E-05 ^t	D
Trichlorofluoromethane	4.1 E-05	D
2,4,6-Trichlorophenol	<2.2 E-08 ^{ak}	C

Table 1.6-3. (cont.)

Organic Compound	Average Emission Factor ^b (lb/MMBtu)	EMISSION FACTOR RATING
Vinyl Chloride	1.8 E-05 ^c	D
o-Xylene	2.5 E-05 ^c	D
Total organic compounds (TOC)	0.039 ^{ai}	D
Volatile organic compounds (VOC)	0.017 ^{aj}	D
Nitrous Oxide (N ₂ O)	0.013 ^{ak}	D
Carbon Dioxide (CO ₂)	195 ^{al}	A

^a Units of lb of pollutant/million Btu (MMBtu) of heat input. To convert from lb/MMBtu to lb/ton, multiply by (HHV * 2000), where HHV is the higher heating value of the fuel, MMBtu/lb. To convert lb/MMBtu to kg/J, multiply by 4.3E-10. These factors apply to Source Classification Codes (SCC) 1-0X-009-YY, where X = 1 for utilities, 2 for industrial, and 3 for commercial/institutional, and where Y = 01 for bark-fired boiler, 02 for bark and wet wood-fired boiler, 03 for wet wood-fired boiler, and 08 for dry wood-fired boiler.

^b Factors are for boilers with no controls or with particulate matter controls.

^c References 26, 34, 36, 59, 60, 65, 71-73, 75.

^d References 26, 33, 34, 36, 59, 60, 65, 71-73, 75.

^e References, 26, 35, 36, 46, 50, 59, 60, 65, 71-75.

^f Reference 26.

^g Reference 33.

^h Reference 26, 50, 83.

ⁱ References 26, 34, 36, 59, 60, 65, 71-73, 75.

^j References 26, 50.

^k References 26, 35, 36, 46, 59, 60, 65, 70, 71-75.

^l References 26, 36, 59, 60, 65, 70-75.

^m References 26, 33, 36, 59, 60, 65, 70-73, 75.

ⁿ References 26, 33, 36, 59, 60, 65, 71-73, 75.

^o Reference 34.

^p References 26, 36, 60, 65, 71-75.

^q References 26, 33.

^r References 26.

^s Reference 83.

^t References 26, 72.

^u References 35, 60, 65, 71, 72.

^v References 26, 72.

^w References 35, 60, 65, 71, 72.

^x References 26, 33, 34, 59, 60, 65, 71-75.

^y References 26, 28, 35, 36, 46 - 51, 59, 60, 65, 70, 71-75, 79, 81, 82.

^z Reference 50.

^{aa} Reference 26, 45.

^{ab} References 26, 33, 34, 36, 59, 60, 65, 71-75, 83.

^{ac} References 26, 35, 60, 65, 71, 72.

^{ad} References 26, 33, 34, 36, 59, 60, 65, 71 - 73.

^{ae} References 26, 33, 34, 35, 60, 65, 70, 71, 72.

^{af} References 26, 33, 34, 36, 59, 60, 65, 71 - 73, 83.

^{ag} References 26, 45.

^{ah} References 26, 35, 60, 65, 71.

^{ai} TOC = total organic compounds. Factor is the sum of all factors in table except nitrous oxide and carbon dioxide.

^{aj} VOC volatile organic compounds. Factor is the sum of all factors in table except hydrogen chloride, chlorine, formaldehyde, tetrachloroethene, 1,1,1-trichloroethane, dichloromethane, acetone, nitrous oxide, methane, and carbon dioxide.

^{ak} Reference 83.

^{al} References 19 - 26, 33 - 49, 51 - 57, 77, 79 - 82, 84 - 86.

Table 3.1-1. EMISSION FACTORS FOR NITROGEN OXIDES (NO_x) AND CARBON MONOXIDE (CO) FROM STATIONARY GAS TURBINES

Emission Factors ^a				
Turbine Type	Nitrogen Oxides		Carbon Monoxide	
Natural Gas-Fired Turbines ^b	(lb/MMBtu) ^c (Fuel Input)	Emission Factor Rating	(lb/MMBtu) ^c (Fuel Input)	Emission Factor Rating
Uncontrolled	3.2 E-01	A	8.2 E-02 ^d	A
Water-Steam Injection	1.3 E-01	A	3.0 E-02	A
Lean-Premix	9.9 E-02	D	1.5 E-02	D
Distillate Oil-Fired Turbines ^e	(lb/MMBtu) ^f (Fuel Input)	Emission Factor Rating	(lb/MMBtu) ^f (Fuel Input)	Emission Factor Rating
Uncontrolled	8.8 E-01	C	3.3 E-03	C
Water-Steam Injection	2.4 E-01	B	7.6 E-02	C
Landfill Gas-Fired Turbines ^g	(lb/MMBtu) ^h (Fuel Input)	Emission Factor Rating	(lb/MMBtu) ^h (Fuel Input)	Emission Factor Rating
Uncontrolled	1.4 E-01	A	4.4 E-01	A
Digester Gas-Fired Turbines ⁱ	(lb/MMBtu) ^k (Fuel Input)	Emission Factor Rating	(lb/MMBtu) ^k (Fuel Input)	Emission Factor Rating
Uncontrolled	1.6 E-01	D	1.7 E-02	D

^a Factors are derived from units operating at high loads (≥ 80 percent load) only. For information on units operating at other loads, consult the background report for this chapter (Reference 16), available at "www.epa.gov/ttn/chief".

^b Source Classification Codes (SCCs) for natural gas-fired turbines include 2-01-002-01, 2-02-002-01, 2-02-002-03, 2-03-002-02, and 2-03-002-03. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value.

^c Emission factors based on an average natural gas heating value (HHV) of 1020 Btu/scf at 60°F. To convert from (lb/MMBtu) to (lb/10⁶ scf), multiply by 1020.

^d It is recognized that the uncontrolled emission factor for CO is higher than the water-steam injection and lean-premix emission factors, which is contrary to expectation. The EPA could not identify the reason for this behavior, except that the data sets used for developing these factors are different.

^e SCCs for distillate oil-fired turbines include 2-01-001-01, 2-02-001-01, 2-02-001-03, and 2-03-001-02.

^f Emission factors based on an average distillate oil heating value of 139 MMBtu/10³ gallons. To convert from (lb/MMBtu) to (lb/10³ gallons), multiply by 139.

^g SCC for landfill gas-fired turbines is 2-03-008-01.

^h Emission factors based on an average landfill gas heating value of 400 Btu/scf at 60°F. To convert from (lb/MMBtu), to (lb/10⁶ scf) multiply by 400.

ⁱ SCC for digester gas-fired turbine is 2-03-007-01.

^k Emission factors based on an average digester gas heating value of 600 Btu/scf at 60°F. To convert from (lb/MMBtu) to (lb/10⁶ scf) multiply by 600.

Table 3.1-2a. EMISSION FACTORS FOR CRITERIA POLLUTANTS AND GREENHOUSE GASES FROM STATIONARY GAS TURBINES

Emission Factors ^a - Uncontrolled				
Pollutant	Natural Gas-Fired Turbines ^b		Distillate Oil-Fired Turbines ^d	
	(lb/MMBtu) ^c (Fuel Input)	Emission Factor Rating	(lb/MMBtu) ^e (Fuel Input)	Emission Factor Rating
CO ₂ ^f	110	A	157	A
N ₂ O	0.003 ^g	E	ND	NA
Lead	ND	NA	1.4 E-05	C
SO ₂	0.94S ^h	B	1.01S ^h	B
Methane	8.6 E-03	C	ND	NA
VOC	2.1 E-03	D	4.1 E-04 ⁱ	E
TOC ^k	1.1 E-02	B	4.0 E-03 ^l	C
PM (condensable)	4.7 E-03 ^l	C	7.2 E-03 ^l	C
PM (filterable)	1.9 E-03 ^l	C	4.3 E-03 ^l	C
PM (total)	6.6 E-03 ^l	C	1.2 E-02 ^l	C

^a Factors are derived from units operating at high loads (>80 percent load) only. For information on units operating at other loads, consult the background report for this chapter (Reference 16), available at "www.epa.gov/ttn/chief". ND = No Data, NA = Not Applicable.

^b SCCs for natural gas-fired turbines include 2-01-002-01, 2-02-002-01 & 03, and 2-03-002-02 & 03.

^c Emission factors based on an average natural gas heating value (HHV) of 1020 Btu/scf at 60°F. To convert from (lb/MMBtu) to (lb/10⁶ scf), multiply by 1020. Similarly, these emission factors can be converted to other natural gas heating values.

^d SCCs for distillate oil-fired turbines are 2-01-001-01, 2-02-001-01, 2-02-001-03, and 2-03-001-02.

^e Emission factors based on an average distillate oil heating value of 139 MMBtu/10³ gallons. To convert from (lb/MMBtu) to (lb/10³ gallons), multiply by 139.

^f Based on 99.5% conversion of fuel carbon to CO₂ for natural gas and 99% conversion of fuel carbon to CO₂ for distillate oil. CO₂ (Natural Gas) [lb/MMBtu] = (0.0036 scf/Btu)(%CON)(C)(D), where %CON = weight percent conversion of fuel carbon to CO₂, C = carbon content of fuel by weight, and D = density of fuel. For natural gas, C is assumed at 75%, and D is assumed at 4.1 E+04 lb/10⁶scf. For distillate oil, CO₂ (Distillate Oil) [lb/MMBtu] = (26.4 gal/MMBtu) (%CON)(C)(D), where C is assumed at 87%, and the D is assumed at 6.9 lb/gallon.

^g Emission factor is carried over from the previous revision to AP-42 (Supplement B, October 1996) and is based on limited source tests on a single turbine with water-steam injection (Reference 5).

^h All sulfur in the fuel is assumed to be converted to SO₂. S = percent sulfur in fuel. Example, if sulfur content in the fuel is 3.4 percent, then S = 3.4. If S is not available, use 3.4 E-03 lb/MMBtu for natural gas turbines, and 3.3 E-02 lb/MMBtu for distillate oil turbines (the equations are more accurate).

ⁱ VOC emissions are assumed equal to the sum of organic emissions.

^k Pollutant referenced as THC in the gathered emission tests. It is assumed as TOC, because it is based on EPA Test Method 25A.

^l Emission factors are based on combustion turbines using water-steam injection.

TABLE 4-8
SUMMARY OF EMISSION FACTORS FOR DETERMINING
ACTUAL EMISSIONS FROM COMBUSTION TURBINES 1-16
JOHNSONVILLE FOSSIL PLANT

Pollutant	Emission Factor, lb/10 ⁶ Btu [HHV]		Reference No.	
	Natural Gas	Fuel Oil	Natural Gas	Fuel Oil
Particulate Matter (PM)	7.00E-03	2.90E-02	manufacturer's data	manufacturer's data
Sulfur Dioxide (SO ₂)-Avg	0.0034	0.259	5, see sample calcs	5, see sample calcs
Sulfur Dioxide (SO ₂)-Max	0.0034	0.480	5, see sample calcs	5, see sample calcs
Nitrogen Oxides (NO _x)	0.361	0.604	manufacturer's data	manufacturer's data
Carbon Monoxide (CO)	0.0266	0.0266	manufacturer's data	manufacturer's data
Volatile Organic Compounds (VOC)	2.13E-03	5.32E-03	manufacturer's data	manufacturer's data
Sulfuric Acid Mist (H ₂ SO ₄)-Avg	0	0.0209	5, see sample calcs	5, see sample calcs
Sulfuric Acid Mist (H ₂ SO ₄)-Max	0	0.0387	5, see sample calcs	5, see sample calcs
Particulate HAPs				
Antimony (Sb)	1.80E-07	2.20E-05	1	2
Arsenic (As)	2.30E-07	1.10E-05	3	5
Beryllium (Be)	1.00E-08	3.10E-07	3	5
Cadmium (Cd)	4.00E-08	4.80E-06	3	5
Chromium (Cr)	1.10E-06	1.10E-05	3	5
Cobalt (Co)	8.00E-08	9.10E-06	3	2
Lead (Pb)	4.00E-07	1.40E-05	3	5
Manganese (Mn)	4.00E-07	7.90E-04	3	5
Nickel (Ni)	2.40E-06	4.60E-06	3	5
Particulate HAPs Total^a	4.84E-06	8.67E-04		
Gaseous HAPs				
Hydrogen Chloride (HCl)		3.06E-03		4
Mercury (Hg)	8.00E-10	1.20E-06	3	5
Selenium (Se)	2.00E-08	2.50E-05	3	5
Organic HAPs (CAS Number)				
1,3-Butadiene (106990)	4.30E-07	1.60E-05	5	5
Acetaldehyde (75070)	4.00E-05		5	
Acrolein (107028)	6.40E-06		5	
Benzene (71432)	1.20E-05	5.50E-05	5	5
Ethyl benzene (100414)	3.20E-05		5	
Formaldehyde (50000)	7.10E-04	2.80E-04	5	5
Naphthalene (91203)	1.30E-06	3.50E-05	5	5
Propylene Oxide (75569)	2.90E-05		5	
Toluene (108883)	1.30E-04		5	
Xylenes (1330207)	6.40E-05		5	
Polycyclic Organic Matter (POM)	2.20E-06	4.00E-05	5	5
Organic HAPs Total	1.03E-03	4.26E-04		
Gaseous HAP Total^b	1.03E-03	3.51E-03		

^aParticulate HAPs total includes antimony, arsenic, beryllium, cadmium, chromium, cobalt, manganese, and nickel.

^bGaseous HAPs total includes HCl, mercury, selenium and Organic HAPs total.

TABLE 4-11
MANUFACTURER'S EMISSION ESTIMATES FOR GE 7001B COMBUSTION
TURBINES, PERTINENT OPERATING PARAMETERS AND RELATED DATA

Johnsonville Fossil Plant	Natural Gas	Fuel Oil
Manufacturer's Emission Estimates at 100% Load, 59°F ^a		
NO _x , ppmv (15% O ₂)	100	155
CO, ppmv	10	10
VOC, ppmv	1.4	3.5
PM, lb/CT-hr	5	20
Heat Input at Peak-Load and Electrical Generation at 0°F Ambient Temperature ^b		
Peak-Load Output, MW/CT	79.8	78.9
Heat Rate, Btu (HHV)/kW-hr	11,065	11,065
Peak-Load Heat Input, 10 ⁶ Btu (HHV)/CT-hr	883	873
Heat Rate, Btu (LHV)/kW-hr	9,968	10,438
Peak-Load Heat Input, 10 ⁶ Btu (LHV)/CT-hr	796	824
Peak-Load Stack Flow, 10 ³ ft ³ /min	541	535
Design Heat Input at 59°F Ambient Temperature ^c		
Heat Input, 10 ⁶ Btu/hr		749.6
Stack Flow, 10 ³ dscfm		459.25
Stack Temperature, °F		1034
Stack H ₂ O, %		3.3
Stack Flow, acfm		1338
Maximum Dependable Capacity (MDC) at 60°F ^d		
Net MDC Output, MW/CT	59.1	57.8
Max Heat Rate, Btu (HHV)/kW-hr	12,154	11,766
MDC Heat Input, 10 ⁶ Btu/CT-hr	718	680
K-value ^e	12.1	13.2
LHV, Btu/lb ^e	20,610	18,330
Ratio of HHV Heat Rate to LHV Heat Rate	1.11	1.06

^aFax from S.C. Strunk to J.D. Lokey, 2/23/98

^bJohnsonville Fossil Plant Title V Application, 11/18/96

^cPermit Application for Johnsonville Fossil Plant GE 7001B CT units, 5/9/83

^dExcel file "CT98 Gen Plan copy.xls" in email from S.C. Strunk to J.D. Lokey, 1/14/98

^eAlternative Control Techniques Document-NO_x Emissions from Stationary Gas Turbines, EPA, January 1993

Determination of Emission Factors (lb/10⁶ Btu heat input) from Manufacturer's data.

Manufacturer's data for criteria pollutants is used to estimate emissions. Table 4-11 is a listing of manufacturer's data, pertinent operating parameters and related data that are used to determine emission factors.

PM

From Table 4-11.

1. Manufacturer's emission estimate for TVA's GE MS700 1B at 100% load, 59°F.
Natural gas: 5 lb/CT-hr
Fuel oil: 20 lb/CT-hr
2. Maximum Dependable Capacity Heat Input, 60°F
Natural gas: 718 x 10⁶ Btu/CT-hr
Fuel Oil: 680 x 10⁶ Btu/CT-hr

Calculation of Emission factor

Natural gas:

$$\frac{5 \text{ lb}}{\text{CT} - \text{hr}} \times \frac{\text{CT} - \text{hr}}{718 \times 10^6 \text{ Btu}} = \frac{0.0070 \text{ lb}}{10^6 \text{ Btu}}$$

Fuel oil:

$$\frac{20 \text{ lb}}{\text{CT} - \text{hr}} \times \frac{\text{CT} - \text{hr}}{680 \times 10^6 \text{ Btu}} = \frac{0.029 \text{ lb}}{10^6 \text{ Btu}}$$

NO_x

From Table 4-11.

1. Manufacturer's emission estimate for TVA's GE MS700 1B at 100% load, 59°F.
Natural gas: 100 ppmvd
Fuel oil: 155 ppmvd
2. Maximum Dependable Capacity Heat Input, 60°F
Natural gas: 718 x 10⁶ Btu/CT-hr
Fuel Oil: 680 x 10⁶ Btu/CT-hr
3. Generation Output, 60°F
Natural gas: 59.1 MW/CT
Fuel oil: 57.8 MW/CT
4. K-value relating ppmvd NO_x to mass of NO_x emissions per mass of fuel input, a constant that depends on the fuel's stoichiometry.
Natural gas: 12.1 ppmvd/(lb NO_x/10³ lb fuel)
Fuel oil: 13.2 ppmvd/(lb NO_x/10³ lb fuel)

ATTACHMENT 7

**EPA LETTER DATED APRIL 6, 2000
ALTERNATIVE MONITORING AND TESTING
PROPOSALS FOR COMBUSTION TURBINES
NSPS – 40 CFR 60, SUBPART GG**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

RECEIVED

APR 06 2000

4APT-ARB

Mr. Jeryl W. Stewart
Compliance Validation Program
Department of Environment and Conservation
Division of Air Pollution Control
9th Floor, L&C Annex
401 Church Street
Nashville, Tennessee 37243-1531

SUBJ: Alternative Monitoring and Testing Proposals for Combustion Turbines Located at the Tennessee Valley Authority Gallatin and Johnsonville Facilities

Dear Mr. Stewart:

Thank you for your March 13, 2000, letter requesting a determination regarding several alternative monitoring and testing proposals that the Tennessee Valley Authority (TVA) submitted for four new combustion turbines (CTs) that will be installed at the Gallatin Facility and for eight new CTs that will be installed at the Johnsonville Facility. These CTs will be subject to sulfur dioxide (SO₂) and nitrogen oxides (NO_x) emission limits under 40 C.F.R. Part 60, Subpart GG (Standards of Performance for Stationary Gas Turbines). In addition, they will be subject to NO_x emission limits under the terms of a Prevention of Significant Deterioration (PSD) permit issued by your agency and acid rain monitoring requirements for SO₂ and NO_x pursuant to 40 C.F.R. Part 75. The alternative monitoring and testing proposals from TVA are summarized along with our comments in the remainder of this letter.

SO₂ custom fuel monitoring

Since TVA will not have intermediate bulk storage for the natural gas burned in the CTs at the Gallatin and Johnsonville Facilities, 40 C.F.R. §60.334(b)(2) would require that the company collect gas samples on a daily basis and analyze them for sulfur content. Under the terms of a custom fuel monitoring policy issued by the U.S. Environmental Protection Agency (EPA) Headquarters on August 14, 1987, the sulfur monitoring frequency for pipeline quality natural gas can be reduced from a daily to a semiannual basis. In order to qualify for this reduction, companies must conduct sampling twice a month for six months followed by quarterly sampling for six quarters and demonstrate that the sulfur content of the samples is well below the applicable standard with low variability. TVA asked that it be allowed to use a semiannual sampling frequency immediately upon the startup of the CTs at the Gallatin and Johnsonville Facilities, and

in a July 8, 1999, letter to you we indicated that TVA would have to provide historical data on the sulfur content of the natural gas from its fuel supplier(s) in order to justify an immediate reduction the sulfur monitoring frequency for natural gas burned in the CTs at the Gallatin and Johnsonville Facilities.

Based upon data provided by TVA in a February 22, 2000, letter that was enclosed with your request, it will be acceptable for the company to use a semiannual sulfur monitoring frequency for natural gas immediately upon startup at the Gallatin and Johnsonville Facilities. The data for Gallatin were for 35 samples collected between January 1998 and January 1999, and the data for Johnsonville were for 22 samples collected between January 1995 and September 1999. In all cases, the sulfur content of the samples analyzed was either at or below the method detection limit of 0.0001 weight percent. This concentration is three order of magnitude below the applicable standard of 0.8 weight percent in 40 C.F.R. §60.333(b), and the results confirm low variability in the sulfur concentration of the gas supplied to TVA. On this basis, semiannual monitoring for sulfur content in the gas used to fire the CTs at the Gallatin and Johnsonville Facilities will be adequate.

Use of NO_x monitor data for initial performance test

TVA made two different proposals involving NO_x emission testing that must be conducted in order to demonstrate compliance with both Subpart GG and PSD limits. One proposal is to drop the requirement to sample at four different load points across the CTs' operating ranges, and the other one is to demonstrate compliance using data from certified continuous emission monitoring systems (CEMS) that will be installed on the units. Based upon the fact that NO_x CEMS will be installed and certified on the CTs at Gallatin and Johnsonville, conducting the initial performance test at four different operating rates will not be necessary, and using the CEMS to conduct the initial performance test would be acceptable under certain conditions.

TVA cited the fact that NO_x emissions at the Gallatin and Johnsonville Facilities will not be controlled using water injection as the basis for dropping the requirement to test at four operation loads, but this fact does not by itself constitute a basis for allowing the company to conduct the initial performance test at fewer than four loads. The basis for this position is that, in addition to providing data to develop a water-to-fuel injection ratio curve for excess emission monitoring purposes, conducting a four-load test also provides assurance that a turbine is capable of complying with the applicable NO_x limit across the unit's entire operating range. This assurance is important because EPA generally requires that performance testing be conducted under "worst case" conditions, and Region 4 experience has been that predicting the operating load that represents worst case conditions for stationary gas turbines is difficult. In TVA's case, however, the CEMS installed and certified on its CTs will provide credible evidence of compliance even after the initial performance test has been completed. Therefore, conducting the initial performance test at multiple loads will not be necessary.

Using the certified NO_x CEMS to conduct the initial performance test would be acceptable

provided that TVA completes certification testing which verifies that its CEMS sampling probes are located in representative locations and conducts pre- and post-test calibration checks of the CEMS in accordance with the provisions in EPA Method 20. If the CEMS are calibrated properly before and after each test run, using the CEMS to conduct the NO_x performance test would constitute a Method 20 alternative only to the extent that sampling would be conducted at a single point, rather than at eight points selected based upon the results of a pre-test traverse. In order to be certified under the acid rain rule, the CEMS must pass a relative accuracy test audit (RATA), and passing the RATA provides justification for single point sampling by demonstrating that the CEMS probe is located at points where the pollutant and diluent gas concentrations are representative of the average concentrations in the stack.

One issue that was not addressed in the TVA proposal was the number and duration of test runs that would be conducted with the CEMS. In order to ensure that representative results are obtained, we recommend that compliance be determined on the basis of at least three hours of CEMS data for each of the CTs at the Gallatin and Johnsonville Facilities. These data could be collected over three one-periods or they could be collected using shorter test periods similar to the 21-minute test runs conducted during a RATA. Regardless of the number of test runs conducted, however, a calibration check conducted in accordance with Section 6.2.3 of Method 20 must be performed on the CEMS following each run.

Fuel oil nitrogen content monitoring

TVA asked that the requirement in 40 C.F.R. §60.334(b) to monitor the nitrogen content of the fuel oil burned in its CTs be waived. Under Subpart GG, the two operating parameters used to track NO_x excess are water-to-fuel injection rates and fuel nitrogen content. Baseline values for both parameters are established during an initial performance test, and 40 C.F.R. §60.334(c)(1) defines how excess emissions are identified in terms of these parameters. TVA will be installing, certifying, operating, and maintaining NO_x CEMS on its CTs in order to comply with requirements under 40 C.F.R. Part 75 and will also be using these CEMS to track excess emissions under Subpart GG. Since TVA will be monitoring NO_x excess emissions directly using its CEMS, monitoring the nitrogen content of the oil burned in the CTs is unnecessary, and the waiver requested by the company is acceptable.

Correcting NO_x data to International Standard Organization (ISO) conditions

The enclosed March 12, 1993, EPA determination summarizes requirements for CEMS that are used for NO_x excess emission monitoring under Subpart GG, and one of these requirements is that the CEMS be capable of calculating emissions corrected to 15 percent oxygen and ISO standard day conditions (288 Kelvin, 60 percent relative humidity, and 101.3 kilopascals pressure). In several recent determinations, Region 4 has indicated that making the ISO correction on a continuous basis is not necessary for turbines that are subject to PSD NO_x limits that are substantially more stringent than those under Subpart GG. In these determinations, Region 4 has indicated, however, that records of the ambient temperature and humidity data used

to correct the results to ISO conditions must be maintained so that results can be calculated in terms of the standard in Subpart GG whenever requested by the EPA or a state or local air pollution control agency.

In addition to requesting that a correction to ISO day conditions not be required for its CTs, TVA requested that the requirement to maintain records of the ambient data used to make the ISO correction also be waived. The justification provided for this proposal was that the PSD NO_x limits for its CTs (15 parts per million for gas and 42 parts per million for oil) are so far below the standard in Subpart GG (75 parts per million) that NSPS compliance will be assured even if the ISO correction is not made. Although we have determined that it will not be necessary for TVA's CEMS to correct results to ISO conditions on a continuous basis, there is not enough information at this time to justify waiving the requirement to keep records of the ambient data used to make the ISO correction.

One basis for our conclusion that there is not enough information to justify waiving the requirement to keep records of the data used to make the ISO correction is that, even though TVA's PSD limits are tighter than the corresponding NSPS limit, this assures compliance with Subpart GG only to the extent that the company remains in compliance with the PSD limits. If the company does ever violate either of its PSD limits, there would be a point at which it would be necessary to correct results to ISO conditions in order to verify NSPS compliance. A second basis for our conclusion that there is not enough information to justify waiving the requirement to keep records of the data used to make the ISO correction is that the averaging time for the PSD limit (30 days) is substantially longer than the averaging time of the NSPS limit (one hour). Because of this difference in averaging times, meeting the long-term PSD limit does not necessarily assure compliance with the short-term ISO-corrected NSPS limit. Therefore, a waiver of the requirement to maintain records of the data used to make the ISO correction cannot be granted at this time. We would, however, be willing to reconsider this issue at a later date if TVA collects at least one year of operating data verifying that emissions from its CTs are always well below the applicable ISO-corrected NSPS limits based upon a one-hour average.

Fuel oil sulfur monitoring

According to 40 C.F.R. §60.334(b)(1) the sulfur content of fuel held in a bulk storage tank must be determined each time fuel is transferred to the tank from any other source. At the Gallatin and Johnsonville Facilities, the amount of sampling that would have to be conducted in order to comply with this requirement would be limited since oil is transferred into the storage tanks at both facilities from barges. At another facility where TVA plans to install CTs, oil will be delivered in tanker trucks, and using the procedures in 40 C.F.R. §60.334(b)(1) to monitor the sulfur content of the oil at this facility would be burdensome because TVA would have to collect and analyze a sample after each tanker truck delivery. Therefore, TVA has proposed to use vendor analyses, rather than onsite sampling to monitor the sulfur content of the oil burned at the facility.

Provided that all of the oil delivered to the facility in question meets the sulfur content limit of 0.8 weight percent promulgated at 40 C.F.R. §60.333(b), TVA's proposal for monitoring the sulfur content of the oil used to fire the CTs at this facility will be acceptable. The basis for this determination is that if all of the oil delivered to the facility has a sulfur content of less than 0.8 weight percent, the oil contained in the storage tank and used to fire the CTs will meet the applicable standard by default. If the sulfur content of any oil delivered to the facility exceeds the applicable standard, it would be necessary to collect and analyze samples from the storage tank to ensure that the average sulfur content of the oil burned is less than 0.8 weight percent. This issue is not expected to be a concern at the facility in question, however, because the American Society for Testing and Materials limit on the sulfur content of distillate oil (0.5 weight percent) is well below the standard in Subpart GG.

If you have any questions about the issues addressed in this letter, please contact Mr. David McNeal of the EPA Region 4 staff at (404) 562-9102.

Sincerely,



R. Douglas Neeley
Chief
Air and Radiation Technology Branch
Air, Pesticides and Toxics
Management Division

Enclosure

- (1) March 12, 1993, EPA policy on the use of CEMS for excess emission monitoring under Subpart GG

ATTACHMENT 8

NON-APPLICABLE REQUIREMENTS

**BASED UPON APPENDIX A OF 2007 PERMIT AND
APPLICATION**

Applicable Regulations

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1. State of Tennessee Division 68 – 201 Tennessee Air Quality Act	
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3. U.S. Environmental Protection Agency (EPA) Code of Federal Regulations (CFR) Title 40	

Tennessee Code Annotated (TCA) 68-201 – Air Pollution Control

Citation	Title	Applicable Regulation	Comments
PART 1 - AIR QUALITY			
68-201-101	Short Title	No	Gives this part the title “Tennessee Air Quality Act.” No Applicable Requirement
68-201-102	Definitions	Yes	Defines terms used in this part. No Applicable Requirement
68-201-103	Intent and Purpose	No	States intent and purpose of the Act. No Applicable Requirement
68-201-104	Creation of Air Pollution Control Board - Members - Meetings - Organization	No	Provides for creation of the Air Pollution Control Board, and its organization, members, and meetings. No Applicable Requirement
68-201-105	Powers and Duties of Board and Department	No	Establishes that the Board may require sources to furnish information required in order for it to perform its duties. Allows for inspections of sources. No Applicable Requirement
68-201-106	Matters to Be Considered in Exercising Powers	No	The Board has no jurisdiction with respect to air pollution existing solely within a facility. Specifies what must be considered by the Board in exercising its powers to prevent/abate/control air pollution. No Applicable Requirement
68-201-107	Powers and Duties of Technical Secretary	Yes	Establishes the powers and duties of the Technical Secretary which include declaring air pollution episodes, and holding hearings. Respondent/petitioner to a hearing may appeal any determination in writing within 15 days of receipt of any order. State Only Requirement
68-201-108	Conduct Hearings	Yes	A source may request a hearing before the Board regarding a decision/action of the Technical Secretary regarding a permit/order/assessment. Provides for public hearings. State Only Requirement
68-201-109	Emergency Stop Orders for Air Contaminant Sources- Hearings	Yes	A source must stop immediately or reduce emission of air contaminants if ordered by the Commissioner should he find that these emissions are causing imminent danger to human health/safety. A hearing on the matter is required within 24-hours. State Only Requirement
68-201-110	Judicial Review	Yes	Provides for appeals from any final order/determination by any person adversely affected by such. State Only Requirement
68-201-111	Right of Board or Commissioner to Injunctive Relief	No	Board/Commissioner may institute civil litigation to prevent violation of any board rule/regulation/order. No Applicable Requirement
68-201-112	Penalty for Violations - Duty of District Attorneys General - Abatement of Public Nuisance	Yes	Provides for fines for willful/knowing violations. Provides authority to the Board to abate public nuisances. State Only Requirements
68-201-113	Existing Civil or Criminal Remedies Not Impaired	No	Existing civil/criminal remedies for wrongful actions are not impaired by this part. No Applicable Requirement

Tennessee Code Annotated (TCA) 68-201 – Air Pollution Control

Citation	Title	Applicable Regulation	Comments
68-201-114	Intent or Remedies - Rights of Action Unaffected	No	Remedies provided for in this part are to provide additional/cumulative remedies to prevent/abate/control air pollution and do not affect any other rights/actions. No Applicable Requirement
68-201-115	Local Pollution Control Programs. Exemption from State Supervision. Applicability Part to Air Contaminant Sources Burning Wood Waste	No	Provides for establishment of local air pollution control programs. Local entities must hold a certificate of exemption from state supervision. Part does not apply to burning of wood waste for disposition of such. No Applicable Requirement
68-201-116	Orders and Assessments of Damages and Civil Penalty Appeal	Yes	Upon order by the Technical Secretary, in response to a violation, a source must comply with the order within the time specified. Part provides for civil/criminal penalties. Approved local programs may issue an assessment against a violator. Anyone who receives an assessment may appeal by filing a petition for review within 30 days with the Technical Secretary. Provides for citizen intervention. State Only Requirement
68-201-117	Levy of Noncompliance and Non-payment Penalties - Suit for Collection or Assessment of Penalty	Yes	If found in violation, a source must pay any assessed non-compliance penalties authorized by the board/EPA/exempted local programs. Board/local programs are authorized to file suit for such. State Only Requirement
68-201-118	Variances	Yes	Allows for the filing of variances by a source. Hearings may be held, but are not required. Variances are for a 1-year period, but may be extended for 1 year at a time. Burden of proof is on the source. State Only Requirement
PART 2 - MISCELLANEOUS PROVISIONS			
68-201-201		No	Repealed. No Applicable Requirement
68-201-202	Local Ordinances	No	Allows cities/towns/counties with a population >600,000 (1960 federal census) to enact ordinances/regulations no less stringent than the provisions of Part I. Violations are misdemeanors. No Applicable Requirement
68-201-203	Emissions from Light-duty Vehicles	No	Allows the State air pollution control board to initiate a voluntary inspection and maintenance program to study emissions from light-duty vehicles in the metropolitan area in and around Davidson County. No Applicable Requirement

**State of Tennessee
Division 1200-03
Tennessee Air Pollution Control Regulations**

Citation	Title	Applicable Regulation	Comments
CHAPTER 1200-03-01 GENERAL PROVISIONS			
1200-03-01-.01	General Rules	No	Titles all Division 1200-03 regulations as “Tennessee Air Pollution Control Regulations” (APCR). Defines “ambient air standard” and intent of such standards. Pollutant limits must be effect-related. For multiple sources in an area, limitations must be on each source. Defines “emission standard”. No Applicable Requirement
1200-03-01-.02	Severability	No	If any portion of the APCR is adjudged to be invalid or unconstitutional, all other parts remain unaffected. No Applicable Requirement
CHAPTER 1200-03-02 DEFINITIONS			
1200-03-02-.01	General Definitions	Yes	Defines terms in the APCR not elsewhere defined. No Applicable Requirement
1200-03-02-.02	Abbreviations	Yes	Explains meanings of abbreviations used in the APCR, unless context clearly indicates otherwise. No Applicable Requirement
CHAPTER 1200-03-03 AMBIENT AIR QUALITY STANDARDS			
1200-03-03-.01	Primary Air Quality Standard	No	Explains what a primary ambient air quality standard is intended to do. No Applicable Requirement
1200-03-03-.02	Secondary Air Quality Standard	No	Explains what a secondary ambient air quality standard is intended to do. No Applicable Requirement
1200-03-03-.03	Tennessee’s Ambient Standard Air Quality Standards	No	Presents, in tabular form, the primary and secondary ambient air quality standards (AAQS) for the State and specifies that all averaging periods are to be consecutive time periods. No Applicable Requirement
1200-03-03-.04	Nondegradation of standard	No	AAQS are not to allow any significant deterioration of air quality in the State. No Applicable Requirement
1200-03-03-.05	Achievement	No	Establishes schedules of achievement with the AAQS for each pollutant for which a standard has been established. No Applicable Requirement

State of Tennessee
Division 1200-03
Tennessee Air Pollution Control Regulations

Citation	Title	Applicable Regulation	Comments
CHAPTER 1200-03-04 OPEN BURNING			
1200-03-04-.01	Purpose	No	States purpose of this chapter. No Applicable Requirement
1200-03-04-.02	Definitions	Yes	Defines terms used in this chapter. Terms not defined here have meaning given them in 1200-03-02. No Applicable Requirement
1200-03-04-.03	Open Burning Prohibited	Yes	Open burning is prohibited unless specifically exempted. Specifies material prohibited from being burned. Applicable Requirement
1200-03-04-.04	Exceptions to Open Burning	Yes	Specific exemptions which allow open burning are presented, including disposition of wood waste. Applicable Requirement
1200-03-04-.05	Repealed	No	No Applicable Requirement
CHAPTER 1200-03-05 VISIBLE EMISSION REGULATIONS			
1200-03-05-.01	General Standards	No	Opacity from any source is not to exceed 20% (aggregate of more than 5 minutes in any one hour or more than 20 minutes in any 24-hour period). For fuel burning installations with heat input >600 MMBtu/hr, opacity is not to exceed 20% (6-minute average), except for one six-minute period per hour of not more than 40%. Said standards apply unless otherwise specified in a subsequent rule. No Applicable Requirement
1200-03-05-.02	Exceptions	Yes	Opacity exceedances are allowed for routine startup/shutdown, and other temporary conditions. A log of these activities is required to be maintained, unless such activities are part of the permit conditions. Applicable Requirement
1200-03-05-.03	Methods of Evaluation and Recording	Yes	Opacity is to be determined by a certified evaluator pursuant to the rules of this chapter. Where the Technical Secretary has agreed in writing, an opacity monitor, which meets the criteria contained in 1200-03-10-.02, may be used to determine compliance. Monitor must meet operational availability/quality assurance requirements. Use of monitor must be included in the operating permit and SIP. These standards do not apply to NSPS sources (1200-03-16). Applicable Requirement

**State of Tennessee
Division 1200-03
Tennessee Air Pollution Control Regulations**

Citation	Title	Applicable Regulation	Comments
1200-03-05-.04	Exemption	Yes	For an existing source, in order to determine compliance with an opacity standard to which an identical new source must comply, the owner or operator must notify the Technical Secretary in writing that this is a revision to the existing source's requirement and an in-stack monitor must be installed in accordance with 1200-03-10-.02. Applicable Requirement
1200-03-05-.05	Standard for Certain Existing Sources	Yes	Existing sources which meet the criteria specified herein may elect to be subject to an opacity standard not to exceed 40%. No affected units at the facility. Applicable Requirement
1200-03-05-.06	Large Wood-Fired Fuel Burning Equipment	No	No affected units on site. No Applicable Requirement
1200-03-05-.07		No	Repealed. No Applicable Requirement
1200-03-05-.08	Titanium Dioxide (TiO ₂) Manufacturing	No	No affected units on site. No Applicable Requirement
1200-03-05-.09	Kraft Mill Recovery Furnaces	No	No affected unit on site. No Applicable Requirement
1200-03-05-.10	Choices of Visible Emission Standard for Certain Fuel Burning Equipment	No	Fuel burning equipment with heat input >50 MMBtu/hr and <600 MMBtu/hr in operation on July 31, 1981, and subject to 1200-03-05-.01 may opt for an opacity limit of 20%. All fuel-burning equipment at an installation will be subject. No Applicable Requirement
1200-03-05-.11	Soda Recovery Boilers	No	No affected unit on site. No Applicable Requirement
1200-03-05-.12	Coke Battery Underfire (combustion) Stacks	No	No affected unit on site. No Applicable Requirement
CHAPTER 1200-03-06 NON-PROCESS EMISSION STANDARDS			

State of Tennessee
Division 1200-03
Tennessee Air Pollution Control Regulations

Citation	Title	Applicable Regulation	Comments
1200-03-06-.01	General Non-Process Emissions	Yes	Owner or operator of an existing (under construction/in operation prior to April 3, 1972) fuel-burning installation proposing to modify, rebuild, or replace a source, may do so only if the source will meet the maximum allowable emission standards for a new installation. Other than for PSD affected units, a fuel change is not a modification. PSD non-process sources must comply with 1200-03-09, as do sources in or impacting nonattainment areas. Applicable Requirement
1200-03-06-.02	Non-Process Particulate Emission Standards	Yes	Procedures for determining non-process PM emission standards for existing and new fuel burning equipment, and incinerators are presented herein. Applicable Requirement
1200-03-06-.03	General Non-Process Gaseous Emissions	Yes	Stationary sources established after April 3, 1972, which emit gaseous contaminants must install and utilize BACT. Applicable Requirement
1200-03-06-.04	Nitrogen Oxides (Repealed)	No	No Applicable Requirement
1200-03-06-.05	Wood-Fired Fuel Burning Equipment	No	No affected unit on site No Applicable Requirement
1200-03-06-.06	Commercial and Industrial Solid Waste Incineration Units that Commenced Construction On or Before November 30, 1999	No	No affected unit on site No Applicable Requirement
CHAPTER 1200-03-07 PROCESS EMISSION STANDARDS			
1200-03-07-.01	General Process Particulate Emission Standards	No	Owner/operator of an existing process emission source, proposing to modify, rebuild or replace said source, may do so only if the source will meet the maximum allowable emission standard for a new process emission source. A change in fuels is not a modification. No Applicable Requirement

State of Tennessee
Division 1200-03
Tennessee Air Pollution Control Regulations

Citation	Title	Applicable Regulation	Comments
1200-03-07-.02	Choice of Particulate Emission Standards - Existing Process	Yes	Sources under construction/in operation prior to August 9, 1969, shall determine a PM standard from the diffusion equation or process weight tables specified herein if written notification is provided to the Technical Secretary prior to July 1, 1972. Otherwise the table 1 process weight standards apply. For sources under construction on or after August 9, 1972, and before July 7, 1974, the diffusion equation must be used to determine the standard, unless written notification to the Technical Secretary indicates that the tabulated process weight standard is preferred. Otherwise, the tabulated standard will apply. Applicable Requirement
1200-03-07-.03	New Processes	Yes	Allowable PM from process emission sources beginning operation on/after April 3, 1972, shall be determined from Process Weight Table 2. BACT may be required in nonattainment areas. Sources in/impacting nonattainment areas must comply with 1200-03-09-.01 (5) (nonattainment New Source Review). Applicable Requirement
1200-03-07-.04	Limiting Allowable Emissions	Yes	PM process emissions shall not be required to be <0.02 grains/dry scf corrected to 70 degrees F and 1 atm unless found necessary by the Board. Likewise, maximum allowable is 0.25 gr/dscf at 70 degrees F/1 atm. Does not apply to vents from liquid storage tanks. Applicable Requirement
1200-03-07-.05	Specific Process Emission Standards	No	Standards specified in 1200-03-07-.02 through -.04 apply if a standard for a specifically designated type of process emission source is contained in a subsequent rule of this chapter. No Applicable Requirement
1200-03-07-.06	Standards of Performance for New Stationary Sources	Yes	The State has adopted EPA's NSPS and will designate new standards as promulgated by EPA. State Only Requirement
1200-03-07-.07	General Provisions and Applicability for Process Gaseous Emission Standards	Yes	After April 3, 1972, any new/modified source of gaseous air contaminants must utilize equipment/technology deemed reasonable/proper by the Technical Secretary. Applicable Requirement
1200-03-07-.08	Specific Process Emission Standards	No	No affected units at the facility. No Applicable Requirement
1200-03-07-.09	Sulfuric Acid Mist	No	No affected unit on site. No Applicable Requirement

**State of Tennessee
Division 1200-03
Tennessee Air Pollution Control Regulations**

Citation	Title	Applicable Regulation	Comments
1200-03-07-.10	Grain Loading Limit for Certain Existing Sources	Yes	A certificate of validation for a PM limit of 1.0 gr/dscf at 70° F and 1 atm may be granted to a source in lieu of the standards of 1200-03-07-.04 (02) if the source commenced operation prior to April 3, 1972, and other specified criteria are met. No Applicable Requirement
1200-03-07-.11	Carbon Monoxide, Electric Arc Furnaces	No	No affected unit on site. No Applicable Requirement
1200-03-07-.12	Carbon Monoxide, Catalytic Cracking Units	No	No affected unit on site. No Applicable Requirement
CHAPTER 1200-03-08 FUGITIVE DUST			
1200-03-08-.01	Fugitive Dust	Yes	Reasonable precautions must be used to prevent airborne PM. A non-inclusive list of precautions is specified herein. Any visible emission beyond the property line in excess of 5 minutes/hour or 20 minutes/day (excluding those from malfunctions as specified in 1200-03-20) are prohibited. Compliance schedules are presented. Applicable Requirement
1200-03-08-.02	Special Additional Control Area Fugitive Dust Requirements	No	Specific fugitive dust requirements for particulate Additional Control Area. No Applicable Requirement
1200-03-08-.03	New and/or Modified Source	Yes	Fugitive dust sources constructed or modified after November 6, 1988, must meet emission standards specified in their construction and subsequent operating permits. Standards will be visible emission standards to be read by technique specified in said permit(s). Applicable Requirement
CHAPTER 1200-03-09 CONSTRUCTION AND OPERATING PERMITS			
1200-03-09-.01	Construction Permits	Yes	Requires a person to apply for and obtain a permit from the Technical Secretary to construct or modify an air contaminant source prior to construction or modification. Specifies requirements for applying for and obtaining a construction permit, including PSD and nonattainment New Source Review, for construction of a new or modification of an existing air contaminant source. Applicable Requirements

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Citation	Title	Applicable Regulation	Comments
1200-03-09-.02	Operating Permits	Yes	Requires a person operating an air contaminant source to obtain an operating permit from the Technical Secretary within specified time frames and specifies certain procedures for obtaining a permit. Also specifies requirements in accordance with Title V of the federal Clean Air Act for operating permit applications and for operating permit issued under the Title V permit regulations. Applicable Requirements
1200-03-09-.03	General Provisions	Yes	Specifies generally applicable provisions including requirement to comply with all regulations at the earliest practicable time, prohibits circumvention of the regulations, prohibits emissions from causing a traffic hazard, limits transferability of a construction or operating permit, and provides authority to the Technical Secretary to suspend or revoke a permit. Applicable Requirements
1200-03-09-.04	Exemptions	Yes	Specifies air contaminant sources that are exempt from permitting requirements. Specifies major source operating permit insignificant emission units and requirements applicable to those units. Applicable Requirements
1200-03-09-.05	Appeal of Permit Application Denials and Permit Conditions	Yes	Provides for appealing a permit denied by the Technical Secretary or the Department and specifies procedures for the appeal process. State Only Requirements.
CHAPTER 1200-03-10 REQUIRED SAMPLING, RECORDING, AND REPORTING			
1200-03-10-.01	Sampling Required to Establish Air Contaminant Emission Levels	Yes	Regulation requires new sources to provide adequate sampling ports, safe access thereto, and other sampling and testing facilities that may be required. Applicants for operating permits may be required to conduct performance test. Technical Secretary may conduct tests. For existing source, the Technical Secretary may require the sources to perform compliance testing. For existing sources, he may require performance test in support of an operating permit application. Source may test or Technical Secretary may test. Periodic tests may be required as a permit condition. Emission data may be required to be filed with the Technical Secretary for a minimum of one year. Applicable Requirement

**State of Tennessee
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Citation	Title	Applicable Regulation	Comments
1200-03-10-.02	Monitoring of Source Emissions, Recording, and Reporting of the Same are Required	Yes	<p>Technical Secretary may require the source to install, calibrate, operate, and maintain prescribed sampling equipment; to sample in accordance with prescribed methods; to establish and maintain records; and to make periodic emission reports. Specific sources required to comply include fossil fuel-fired steam generators (construction commenced after April 3, 1972). All required monitoring equipment must meet the performance specifications given in Federal Register Volume 40, Number 194 and be installed, calibrated, operated, and maintained per these rules. Schedules for ordering, installing, testing, and operating equipment, and submitting detailed monitoring programs are presented. Allowance is made for failure to monitor as a result of approved monitoring system malfunctions. A log of malfunction must be maintained and must contain the data specified here. Written quarterly excess emission reports are required of specified sources. Requirements for completing this excess emissions summary are specified herein.</p> <p>Applicable Requirement</p>
1200-03-10-.03	Malfunction of Equipment, Reports Required (Repealed)	No	No Applicable Requirement
1200-03-10-.04	Sampling, Reporting and Recording Required for Major Stationary Sources	Yes	<p>Authorizes the Technical Secretary to require by permit condition any periodic or enhanced monitoring, recording or reporting deemed necessary for verification of a source's compliance with applicable requirements as specified in 1200-03-09-.02(11).</p> <p>Applicable Requirements</p>
CHAPTER 1200-03-11 HAZARDOUS AIR CONTAMINANTS			
1200-03-11-.01	General Provisions	Yes	<p>Lists designated hazardous air pollutants (HAPs) including asbestos. New/modified sources of HAPs require a construction permit. Information on the HAPs sources which must be filed with the Technical Secretary is specified per the schedules specified herein. Notification schedule for startups is given. Source changes, other than modifications, must be reported within 30 days after the change. Sources not previously required to have a construction or operating permit must do so within 90 days following the Board's determination that the sources' emissions are HAPs. Terms are defined herein. Existing sources of HAPs become new sources upon modification where an applicable standard applies. Methods of determining emission rates and their units are specified. Activities that do not constitute modifications are listed. Requirements for monitoring, recordkeeping, and reporting, where required by a rule, are specified.</p> <p>State Only Requirement</p>

State of Tennessee
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Citation	Title	Applicable Regulation	Comments
1200-03-11-.02	Asbestos	Yes	Demolition/renovation activities at this facility must meet the requirements specified herein. Requirements include determination of amount of material affected, written notification, prevention of atmospheric asbestos PM emissions. Sources subject to this rule are exempt from the General Provisions (1200-03-11-.01). State Only Requirement
1200-03-11-.03	Beryllium	No	No affected unit on site. No Applicable Requirement
1200-03-11-.04	Mercury	No	No affected unit on site. No Applicable Requirement
1200-03-11-.05	Vinyl Chloride	No	No affected unit on site. No Applicable Requirement
1200-03-11-.06	Equipment Leaks (Fugitive Emission Sources)	No	No affected unit on site. No Applicable Requirement
1200-03-11-.07	Equipment Leaks (Fugitive Emission Sources) of Benzene	No	No affected activities on site. No Applicable Requirement
1200-03-11-.08	Emission Standards for Emissions of Radionuclides Other than Radon from Department of Energy Facilities	No	Applies to Department of Energy facilities that emit any Radionuclides other than radon-222 and radon-220 into the air, except that this subpart does not apply to disposal at facilities subject to 40 CFR part 191, subpart B or 40 CFR part 192. Specific emission limits, sampling, monitoring, recording and reporting requirements. No Applicable Requirement
1200-03-11-.09	Inorganic Arsenic Emissions From Glass Manufacturing Plants	No	No affected unit on site. No Applicable Requirement
1200-03-11-.10	Inorganic Arsenic Emissions From Primary Copper Smelters	No	No affected unit on site. No Applicable Requirement
1200-03-11-.11	Inorganic Arsenic Emissions From Arsenic Trioxide and Metallic Arsenic Production Facilities	No	No affected unit on site. No Applicable Requirement
1200-03-11-.12 through 1200-03-11-.16	Reserved	No	Reserved No Applicable Requirement
1200-03-11-.17	National Emissions Standards for Radon Emissions From Department of Energy Facilities	No	Adopts by reference the Federal regulations 40 CFR 61 Subpart Q as published in the December 15, 1989 edition of the Federal Register. No Applicable Requirement

**State of Tennessee
Division 1200-03
Tennessee Air Pollution Control Regulations**

Citation	Title	Applicable Regulation	Comments
CHAPTER 1200-03-12 METHODS OF SAMPLING AND ANALYSIS			
1200-03-12-.01	General	Yes	Required samples are to be taken in such number, duration, and location as to be statistically significant and representative. Alternate materials, equipment, and procedures may be used in place of those specified upon reliable demonstration that results produced are comparable to those obtained from specified materials, equipment, and procedures. Applicable Requirement
1200-03-12-.02	Procedures for Ambient Air Sampling and Analysis	Yes	Should a source be required to perform ambient sampling and analysis of sulfur dioxide, ozone (O ₃), PM ₁₀ , photochemical oxidants, carbon monoxide (CO), non-methane hydrocarbons (NMHC), nitrogen dioxide (NO ₂), and fluorides, the procedures to be used are specified herein. Alternate/equivalent procedures may be approved. Applicable Requirement
1200-03-12-.03	Sources Sampling and Analysis	Yes	Procedures and equipment to be used in source sampling/analysis are specified herein. Applicable Requirement
1200-03-12-.04	Monitoring Required for Determining Compliance of Certain Large Sources	Yes	Provides sources a choice of methods for determining compliance with sulfur dioxide (SO ₂) limitations based upon type of fuel burned. These include use of fuel analysis or in-stack continuous emissions monitors (CEMS). Applicable Requirement
CHAPTER 1200-03-13 VIOLATIONS			
1200-03-13-.01	Violation Statement	Yes	Failure to comply with any of these regulations is a violation subject to enforcement. Applicable Requirement
CHAPTER 1200-03-14 CONTROL OF SULFUR DIOXIDE EMISSIONS			
1200-03-14-.01	General Provisions	Yes	Establishes 8 categories for classifying counties based upon limits necessary to attain/maintain the SO ₂ AAQS. Hawkins County is classified as Class V. Regardless of limits specified herein, source must comply with PSD and NSR requirements. Fuel burning sources > 1000 MMBtu/hr must monitor SO ₂ AAQ. Sources, upon approval of petition to Technical Secretary, may terminate sampling if data for 2 calendar years verifies compliance with Tennessee AAQS. Specific conditions that must be met for petition approval are stipulated. Applicable Requirement

State of Tennessee
Division 1200-03
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Citation	Title	Applicable Regulation	Comments
1200-03-14-.02	Non-Process Emission Standards	Yes	Fuel burning installations in operation prior to April 3, 1972, with heat input >1 Billion Btu/hr and located in a Class V county must not exceed 4.0 lb SO ₂ /MMBtu (24-hr basis). If ≤ 600 MMBtu/hr, limit is determined on a 1-hr basis. Equipment constructed after April 3, 1972, with a rated capacity ≤ 250 MMBtu/hr is limited to 4.0 lb SO ₂ /MMBtu (1-hr average) in a Class V county. Sources constructed after April 3, 1972, with capacity > 250 MMBtu/hr are limited to 0.80 lb SO ₂ /MMBtu (maximum 1-hour average) when liquid fossil fuel is burned; to 1.2 lb SO ₂ /MMBtu (maximum 1-hour average) when solid fossil fuel is burned; or to the limit established by the equation herein specified when burning different fossil fuels simultaneously. Applicable Requirement
1200-03-14-.03	Process Emission Standards	No	No affected units at this facility. No Applicable Requirement
1200-03-14-.04	CAIR Annual SO ₂ Trading Program	No	See comments for 40 CFR 96 and 97.
CHAPTER 1200-03-15 EMERGENCY EPISODE REQUIREMENTS			
1200-03-15-.01	Purpose	Yes	The purpose of this chapter is to establish criteria to prevent undesirable levels of air contaminants during adverse meteorological conditions. Primary responsibility to initiate activity required by this Chapter rests with the Technical Secretary. No specific requirements. No Applicable Requirement
1200-03-15-.02	Episode Criteria	Yes	Air pollution episode criteria are established. No specific regulatory requirement. No Applicable Requirement

State of Tennessee
Division 1200-03
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Citation	Title	Applicable Regulation	Comments
1200-03-15-.03	Required Emissions Reduction	Yes	<p>Upon declaration, by the Technical Secretary, of an air pollution alert, sources must follow the requirements for the corresponding episode level as tabulated herein, or follow the approved emissions reduction plan for the source or facility. Major sources significantly impacting a nonattainment area must submit an acceptable air pollution episode emissions reduction plan to the Technical Secretary. Major sources are specified herein. Plans may be required of non-major sources. The Technical Secretary may via a hearing establish a plan for a source that fails to submit an approved plan.</p> <p>Applicable Requirement</p>
CHAPTER 1200-03-16 NEW SOURCE PERFORMANCE STANDARDS¹			
1200-03-16-.01	General Provisions	Yes	<p>Visible emissions, PM, SO₂, and other pollutant standards specified for an affected facility herein, supersede standards in any other rule. Standards apply to any new or modified facility which commenced after the date specified in each rule. Limitations established pursuant to PSD and NSR requirements must comply with such regardless of the standards established herein. Terms used in this Chapter are defined. Performance test requirements and procedures are specified. Regulations specifying compliance with standards and maintenance requirements are presented. Notification, recordkeeping and monitoring requirements are established. Requirements regarding modifications are presented, as are those for reconstruction. General control device requirements and specifications are established.</p> <p>Applicable Requirement</p>

¹ TAPCR 1200-03-16 is not included in Tennessee's State Implementation Plan. Applicable rules in this chapter are State-only regulations.

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Citation	Title	Applicable Regulation	Comments
1200-03-16-.02	Fossil Fuel-Fired Steam Generating Units for Which Construction is Commenced After April 3, 1972	Yes	Applies to units constructed after April 3, 1972. Construction commenced on units at this facility in 1952. No affected units at this facility. No Applicable Requirement
1200-03-16-.03	Electric Utility Steam Generating Units for Which Construction Commenced After September 18, 1978	Yes	Applies to units constructed after September 18, 1978. Construction commenced on units at this facility in 1952. No affected units at this facility. No Applicable Requirement
1200-03-16-.04	Incinerators	No	No affected unit on site. No Applicable Requirement
1200-03-16-.10	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After April 21, 1976, and Prior to May 19, 1978	No	No affected unit on site No Applicable Requirement
1200-03-16-.11	Standard of Performance for Storage Vessels for Petroleum Liquids Constructed After May 18, 1978	No	No affected unit on site No Applicable Requirement
1200-03-16-.22	Coal Preparation Plants	Yes	Applies only to facilities which “commenced” construction on or after February 9, 1977. Construction commenced on the unit at this facility in 1962. No affected sources at this facility. No Applicable Requirement
1200-03-16-.31	Stationary Gas Turbines	Yes	Combustion turbines (1-16) at this facility were constructed prior to October 3, 1977. Combustion turbines (1-16) are not affected. Combustion turbines (17-20) are affected. Applicable Requirement
1200-03-16-.53	Non-Metallic Mineral Processing Plants	No	No affected units on site. No Applicable Requirement
1200-03-16-.58	[Reserved]	[Reserved]	[Reserved]
1200-03-16-.59	Industrial-Commercial-Institutional Steam Generating Units	No	Applies only to units constructed, modified, and reconstructed after November 6, 1988 with heat input greater than 100 MMBtu/hr. Units at this facility were constructed prior to this date. No affected units at the site. No Applicable Requirement

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Citation	Title	Applicable Regulation	Comments
1200-03-16-.61	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After June 2, 1990.	Yes	No affected units at the facility. No Applicable Requirement
1200-03-16-.62 through 1200-03-16-.73	[Reserved]	[Reserved]	[Reserved]
1200-03-16-.75 through 1200-03-16-.99	[Reserved]	[Reserved]	[Reserved]
1200-03-16-.32 through 1200-03-16-.52 , 1200-03-16-.54 through 1200-03-16-.57, 1200-03-16-.60, 1200-03-16-.74	Standards of performance for various manufacturing operations	No	No affected unit on site for any of the listed rules. No Applicable Requirement
CHAPTER 1200-03-17 CONFLICT OF INTEREST			
1200-03-17-.01	Purpose and Intent	No	Describes the purpose and intent of the rule. No Applicable Requirement
1200-03-17-.02	Conflict of interest on the part of the Board and Technical Secretary	No	Defines what a conflict of interest is and describes requirements and procedures to be followed by the Technical Secretary or Board Member if a conflict of interest is determined. No Applicable Requirement
1200-03-17-.03	Conflict of interest in the permitting of Municipal Solid waste Incineration Units.	No	Specifies requirements for the Technical Secretary or Board Member if a conflict of interest exists. No Applicable Requirement

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Citation	Title	Applicable Regulation	Comments
CHAPTER 1200-03-18 VOLATILE ORGANIC COMPOUNDS			
1200-03-18-.01	Definitions	Yes	Provides definitions of terms used in this chapter. No Applicable Requirement
1200-03-18-.02	General Provisions and Applicability	Yes	Describes provisions that are generally applicable and the sources subject to the provisions. Applicable Requirement
1200-03-18-.03	Compliance Certification, Recordkeeping, and Reporting Requirements for Coating and Printing Sources	No	Specifies compliance certification, recordkeeping, and reporting requirements for coating and printing sources. No Applicable Requirement
1200-03-18-.04	Compliance Certification, Recordkeeping, and Reporting Requirements for Non-coating and Non-printing Sources	Yes	Specifies compliance certification, recordkeeping, and reporting requirements for non-coating and non-printing sources. Applicable Requirement
1200-03-18-.05	[Reserved]	[Reserved]	[Reserved]
1200-03-18-.06	Handling, Storage, and Disposal of Volatile Organic Compounds (VOC)	No	Specifies requirements for facilities in Davidson, Rutherford, Sumner, Williamson, and Wilson County for the handling, storage, and disposal of volatile organic compounds. No Applicable Requirement
1200-03-18-.07	Source-specific Compliance Schedules	Yes	Allows for existing sources to petition for a source-specific compliance schedule meeting certain criteria and containing specific information. Applicable Requirement
1200-03-18-.08 through 1200-03-18-.10	[Reserved]	[Reserved]	[Reserved]
1200-03-18-.20	Coating of Miscellaneous Metal Parts	Yes	Specifies requirements for certain miscellaneous metal parts and products coating line. No Applicable Requirements
1200-03-18-.24	Gasoline Dispensing Facilities - Stage I and Stage II Vapor Recovery	No	Specifies requirements for gasoline dispensing facilities in Davidson, Rutherford, Shelby, Sumner, Williamson, and Wilson County meeting certain criteria. No Applicable Requirement

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Citation	Title	Applicable Regulation	Comments
1200-03-18-.28	Petroleum Liquid Storage in External Floating Roof Tanks	Yes	Specifies requirements for floating roof tanks meeting certain criteria. No Applicable Requirement
1200-03-18-.29	Petroleum Liquid Storage in Fixed Roof Tanks	Yes	Specifies requirements for fixed roof tanks meeting certain criteria No Applicable Requirement
1200-03-18-.31	Solvent Metal Cleaning	No	Specifies requirements for solvent metal cleaning sources meeting certain criteria. No Applicable Requirement
1200-03-18-.79	Other Facilities That Emit Volatile Organic Compounds (VOC's)	No	Specifies requirements for facilities in Davidson, Rutherford, Sumner, Williamson, or Wilson County emitting volatile organic compounds meeting certain criteria. No Applicable Requirement
1200-03-18-.80	Test Methods and Compliance Procedures: General Provisions	Yes	Describes general provisions for test methods and compliance procedures for sources subject to this chapter. Applicable Requirement
1200-03-18-.83	Test Methods and Compliance Procedures: Emission Capture and Destruction or Removal Efficiency and Monitoring Requirements	Yes	Specifies test methods and compliance procedures for determining the efficiency of volatile organic compound capture systems. Applicable Requirement
1200-03-18-.84	Test Methods and Compliance Procedures: Determining the Destruction or Removal Efficiency of a Control Device	Yes	Specifies test methods to determine volatile organic compound concentrations in a gas stream. Applicable Requirement
1200-03-18-.86	Performance Specifications for Continuous Emissions Monitoring of Total Hydrocarbons	Yes	Provides performance specifications for continuous emission monitoring of total hydrocarbons. Applicable Requirement
1200-03-18-.87	Quality Control Procedures for Continuous Emission Monitoring Systems (CEMS)	Yes	Requires owner or operator of a CEMS to develop and implement a CEMS quality control program and specifies the minimum requirements for such a program. Applicable Requirement
CHAPTER 1200-03-19 EMISSION STANDARDS AND MONITORING REQUIREMENT FOR ADDITIONAL CONTROL AREAS			

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Citation	Title	Applicable Regulation	Comments
1200-03-19-.01	Purpose	No	Establishes that the purpose of this Chapter is to establish specific emission standards for existing air contaminant sources located in or significantly impacting upon an additional control area. No specific regulatory requirements. No Applicable Requirement
1200-03-19-.02	General Requirements	Yes	Requirements apply only to sources which are located in or significantly impact on the areas specified in 1200-03-19. This facility is located in the New Johnsonville Additional Control Area. Applicable Requirement
1200-03-19-.03	Particulate and Sulfur Dioxide Additional Control Areas within Tennessee	Yes	Describes additional control areas for PM and SO ₂ . No specific regulatory requirements. No Applicable Requirement
1200-03-19-.04		No	Reserved. No Applicable Requirement
1200-03-19-.05	Operating Permits and Emission Limiting Conditions	No	No Applicable Requirement
1200-03-19-.06	Logs for Operating Hours	Yes	No affected units at the facility. No Applicable Requirement
1200-03-19-.07 through 1200-03-19-.10	[Reserved]	[Reserved]	No Applicable Requirement
1200-03-19-.11	Particulate Matter Emission Regulations for the Bristol Additional Control Area	No	No affected units at the facility. No Applicable Requirement
1200-03-19-.12	Particulate Matter Emission Regulations for Air Contaminant Sources in or Significantly Impacting the Particulate Additional Control Areas in Campbell County	No	No affected units at the facility. No Applicable Requirement
1200-03-19-.13	Particulate Matter Emission Regulations for the Bull Run Additional Control Area and Odoms Bend Additional Control Area	No	Provides that sources in the Bull Run and Odoms Bend Additional Control Area are subject to general requirements for unclassified and attainment areas. No Applicable Requirement
1200-03-19-.14	Sulfur Dioxide Emission Regulations for the New Johnsonville Additional Control Area	Yes	Specifies sulfur dioxide emission limits for coal fired fuel burning installations and for electric generating turbines. Applicable Requirement

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Citation	Title	Applicable Regulation	Comments
1200-03-19-.15 through 1200-03-19-.18	[Reserved]	[Reserved]	[Reserved]
1200-03-19-.19	Sulfur Dioxide Emission Standards for Copper Basin Additional Control Area	No	No affected unit on the site. No Applicable Requirement
CHAPTER 1200-03-20 LIMITS ON EMISSION DUE TO MALFUNCTION, STARTUPS, AND SHUTDOWNS			
1200-03-20-.01	Purpose	No	The purpose of this Chapter is to place reasonable limits on emissions from fuel burning, process emission, and other sources which result from malfunctions, startups, or shutdowns. No specific regulatory requirements. No Applicable Requirement
1200-03-20-.02	Reasonable Measures Required	Yes	Reasonable measures are required to minimize emissions during startups/shutdowns/malfunctions. Contains a non-inclusive list of minimization measures. Sources in or significantly affecting a nonattainment area and which have failures due to poor maintenance, careless operation, other preventable upset condition, or preventable equipment breakdown are not malfunctions and are considered violations. Applicable Requirement
1200-03-20-.03	Notice Required When Malfunction Occurs	Yes	Exceedances of emission standards or emissions of such quantity or duration that cause damage to property or public health must be reported along with pertinent information to the Technical Secretary. Opacity violations (excluding emissions caused by hazardous air pollutants) of < 20 minutes per day (midnight to midnight) need not be reported. Prompt notification by phone within 24 hours is required. When the condition causing the exceedance is corrected and equipment returns to operation, additional notification is required. No notification is required of sources in attainment or unclassified areas which do not significantly impact a nonattainment area and which will not or do not occur over more than a 24-hour period (or will not reoccur over more than a 24-hr period), provided no property or public health damage is anticipated. Applicable Requirement

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Citation	Title	Applicable Regulation	Comments
1200-03-20-.04	Logs and Reports	Yes	Logs of all malfunctions, startups, shutdowns resulting in emissions exceedances must be kept at the plant. Specifications of data to be entered and schedule for data entry are specified. Sources located in or significantly impacting on a nonattainment area must submit a report within 30 days after the end of each calendar quarter. Data required in this report is specified. Emissions reported under 1200-03-10-.02 or 1200-03-16 are not required to be reported under this section. Applicable Requirement
1200-03-20-.05	Copies of Logs Required	Yes	Technical Secretary may require submittal of upset log within 10 days after receipt of request by the source. Applicable Requirement
1200-03-20-.06	Report Required Upon the Issuance of a Notice of Violation (NOV)	Yes	Excess emissions from units subject to regulation shall be automatically cited with an NOV (except for visible emission from startup or shutdown under 1200-03-05-.02(1) or de minimis under 1200-03-20-.06). Source is required to submit within 20 days, data specified herein, to be used by the Technical Secretary in determining whether to excuse or validate the NOV. Information not submitted in the required time is precluded from consideration for excusing an NOV. No NOV will be issued for units using properly certified/operated CEMS unless the de minimis levels specified herein are violated. Irrespective of startup and shutdown exemptions, no emission shall be allowed to cause or contribute to a violation of the Ambient Air Quality Standards (AAQS). Applicable Requirement
1200-03-20-.07	Special Reports Required	Yes	Technical Secretary may require of the source a quarterly report which contains at least the information specified herein. Said report must be submitted within 30 days after the end of each calendar quarter. Applicable Requirement
1200-03-20-.08	Rights Reserved	Yes	Nothing in this Chapter shall be construed to limit the obligation of the source to attain and maintain AAQS. No specific regulatory requirements. Applicable Requirement
1200-03-20-.09	Additional Sources Covered	Yes	Technical Secretary may require reporting in accordance with the provisions of this Chapter for sources in nonattainment areas or significantly impacting nonattainment areas, if there is reason to believe an AAQS may be violated in the general vicinity where the source is located. Criteria for determining "reason" are specified. No affected units at this facility. No Applicable Requirement
CHAPTER 1200-03-21 GENERAL ALTERNATE EMISSION STANDARDS			

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Citation	Title	Applicable Regulation	Comments
1200-03-21-.01	General Alternate Emission Standard	Yes	Owner or operator of any PM, SO ₂ , CO, and /or NO _x source regulated by other rules in these regulations may apply to the Technical Secretary for a Certification of Alternate Control if the specifications presented here are met. Alternate emission standards and emissions shall be considered as an addition to existing standard, be subject to public hearing, and included in the SIP. GEP is required on all stacks. Certificate becomes void 90 days after the Board amends any rule or regulation listed on the certificate if said change reduces allowable emissions. Applicable Requirement
CHAPTER 1200-03-22 LEAD EMISSION STANDARDS			
1200-03-22-.01	Definitions	Yes	Terms used in this Chapter are defined here. No specific regulatory requirements. No Applicable Requirements
1200-03-22-.02	General Lead Emission Standards	No	No affected unit on the site. No Applicable Requirement
1200-03-22-.03	Specific Emission Standard for Existing Sources of Lead	No	No affected unit on the site. No Applicable Requirement
1200-03-22-.04	Standards for New or Modified Sources of Lead	No	No affected unit on the site. No Applicable Requirement
1200-03-22-.05	Source Sampling and Analysis	No	No affected unit on the site. No Applicable Requirement
1200-03-22-.06	Lead Ambient Monitoring Requirements	No	No affected unit on the site. No Applicable Requirement
CHAPTER 1200-03-23 VISIBILITY PROTECTION			
1200-03-23-.01	Purpose	No	Stated purpose of Chapter is to assure reasonable progress in preventing any future or remedying any existing visibility impairment in Class I Federal areas resulting from man-made sources. No specific regulatory requirements. No Applicable Requirements
1200-03-23-.02	Definitions	Yes	Terms used in this Chapter are defined here. No specific regulatory requirements. No Applicable Requirements

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Citation	Title	Applicable Regulation	Comments
1200-03-23-.03	General Visibility Protection Standards	Yes	Sources are prohibited from producing emissions in excess of the standards in this Chapter. Permit conditions must be met. Applicable Requirement
1200-03-23-.04	Specific Emission Standards for Existing Stationary Facilities	Yes	Technical Secretary must specify BART (Best Available Retrofit Technology) as a permit condition for an existing stationary source that causes visibility impairment in any Class I Federal area. No affected units at the facility. No Applicable Requirement
1200-03-23-.05	Specific Emission Standards for Existing Sources	Yes	Technical Secretary may specify a limitation equivalent to BART as a permit condition for any source that causes visibility impairment in any Class I Federal area, except existing stationary sources. No affected units at the facility. No Applicable Requirement
1200-03-23-.06	Visibility Standards for New and Modified Sources	Yes	New major stationary sources or major modification in attainment/unclassifiable areas must meet PSD requirements. No affected units at this facility. No Applicable Requirement
1200-03-23-.07	Visibility Monitoring Requirements	Yes	Visibility monitoring may be required in the vicinity of a source regulated by this Chapter. No Applicable Requirement
1200-03-23-.08	Exemptions from BART Requirements	No	Sources may apply for exemptions from BART. Fossil fuel-fired power plants with capacity ≥ 750 MWe must demonstrate that it is located at such a distance from <u>all</u> mandatory Class I Federal areas that it does or will not, by itself or in combination with other sources, emit any air pollutant which may reasonably be anticipated to cause or contribute to significant visibility impairment in said areas. Written notification to all Federal Land Managers is required. Opportunity for public hearing is required. No Applicable Requirement
CHAPTER 1200-03-24 STACK HEIGHT REGULATIONS GOOD ENGINEERING PRACTICE			
1200-03-24-.01	General Provisions	Yes	Good Engineering Practice (GEP) stack height is required of all sources constructed after December 31, 1970. Coal-fired steam electric generating units which commenced operation prior to July 1, 1957, whose stacks were constructed under contract awarded before February 8, 1974 are not subject to GEP. Applicable Requirement
1200-03-24-.02	Definitions	Yes	Terms used in this Chapter are defined here. Applicable Requirement

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Citation	Title	Applicable Regulation	Comments
1200-03-24-.03	Good Engineering Practice Stack Height Standards	Yes	Standards prescribed in this Chapter may not be exceeded. Applicable Requirement
1200-03-24-.04	Specific Emission Standards	Yes	For an affected source, the emission limit determined to be necessary under the provisions of this Chapter must be specified on the construction/operating permit which is subject to public hearing and included in the SIP. No Applicable Requirement.
CHAPTER 1200-03-25 STANDARD FOR INFECTIOUS WASTE INCINERATORS			
1200-03-25-.01 through 1200-03-25-.10	Compliance requirements for infectious waste incinerators.	No	No affected units on the site. No Applicable Requirement
CHAPTER 1200-03-26 ADMINISTRATIVE FEES SCHEDULE			
1200-03-26-.01	Tennessee Visible Emissions Evaluation Course Fees	Yes	Specifies fees for the Tennessee Visible Emissions Evaluation Course. Applicable Requirement
1200-03-26-.02	Construction, Modification, and Annual Emission Fees	Yes	Establishes fees for construction, modification, and annual emissions. Provides definitions used in this chapter, specifies fee schedules, required payment of fees, and late fees. Applicable Requirement
1200-03-26-.03	Repealed	No	Repealed
CHAPTER 1200-03-27 NITROGEN OXIDES			
1200-03-27-.01	Definitions	Yes	Provides definitions of terms used in this chapter. No Applicable Requirement
1200-03-27-.02	General Provisions and Applicability	Yes	Specifies the general provisions applicable to sources subject to this chapter and specifies the applicability of this chapter. Applicable Requirement
1200-03-27-.03	Standards and Requirements	No	Specifies nitrogen oxide emission standards for certain sources in Davidson, Rutherford, Sumner, Williamson or Wilson County and specifies compliance schedules for meeting the emission standards. No Applicable Requirement
1200-03-27-.04	Standards for Cement Kilns	No	Specifies NO _x emission control requirements for certain cement kilns and includes compliance certification and recording requirements. No Applicable Requirement

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Citation	Title	Applicable Regulation	Comments
1200-03-27-.05	Reserved	[Reserved]	[Reserved]
1200-03-27-.06	NO _x Budget Trading Program for State Implementation Plans (40 CFR 96)	No	See comments for 40 CFR 96 and 97.
1200-03-27-.07	Voluntary NO _x Emissions Reduction Program	No	Establishes the Voluntary NO _x Emissions Reduction Program. No Applicable Requirement.
1200-03-27-.08	[Reserved]	[Reserved]	[Reserved]
1200-03-27-.09	Compliance Plans for NO _x Emissions from Stationary Internal Combustion (IC) Engines		No affected units on the site. No Applicable Requirement
1200-03-27-.10	CAIR NO _x Annual Trading Program	No	See comments for 40 CFR 96 and 97.
1200-03-27-.11	CAIR NO _x Ozone Season Trading Program	No	See comments for 40 CFR 96 and 97.
CHAPTER 1200-03-29 LIGHT-DUTY MOTOR VEHICLE INSPECTION AND MAINTENANCE			
1200-03-29-.01 through 1200-03-29-.10	Requirements for light-duty motor vehicle inspection and maintenance.	No	No Applicable Requirements
1200-03-29-.11	Waiver Provisions	No	Allows a person to operate a motor vehicle that fails to meet the applicable motor vehicle emission performance test criteria. No Applicable Requirements.
1200-03-29-.12	Area of Applicability	No	Specifies what areas are subject to the requirements. No Applicable Requirements.
CHAPTER 1200-03-30 ACID PRECIPITATION CONTROL			
1200-03-30-.01	Acid Rain Program General Provisions	Yes	Describes the general provisions of the Acid Rain Program, specifies the definitions of terms and measurements, abbreviations, and acronyms to be used in the Chapter, the applicability of the regulations, exemption for new sources, exemption for retired units and standard requirements to be met by applicable units. Applicable Requirements

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Citation	Title	Applicable Regulation	Comments
1200-03-30-.02	Designated Representative	Yes	Describes the requirement for and responsibilities of the designated representative. Applicable Requirements
1200-03-30-.03	Acid Rain Permit Application	Yes	Specifies the requirement for the designated representative of any source with an affected unit to submit an Acid Rain permit application by specific dates and describes the implications of submitting a complete application. Applicable Requirements
1200-03-30-.04	Acid Rain Compliance Plan and Compliance Options	Yes	Specifies the requirement for including a complete compliance plan with an Acid Rain permit application and describes the content of the compliance plan and options for conditional approval and repowering extensions. Applicable Requirements
1200-03-30-.05	Acid Rain Permit	Yes	Specifies the contents of an Acid Rain permit and the implications of a permit shield. Applicable Requirements
1200-03-30-.06	Acid Rain Permit Issuance Procedures	No	Describes the procedures to be followed by the Technical Secretary in issuing an Acid Rain permit and the procedures to be followed in the event of an appeal of an Acid Rain permit. No Applicable Requirements
1200-03-30-.07	Permit Revisions	Yes	Describes the permit revision process, the types of permit modifications and what qualifies for each type. Applicable Requirements
1200-03-30-.08	Compliance Certification	Yes	Specifies the requirement for submittal of an annual compliance certification report by the designated representative. Applicable Requirements
1200-03-30-.09	Nitrogen Oxides Emissions Reduction Program	No	Reserved
1200-03-30-.10	Sulfur Dioxide Opt-Ins	No	Reserved
CHAPTER 1200-03-31			
CASE-BY-CASE DETERMINATION OF HAZARDOUS AIR POLLUTANT CONTROL REQUIREMENTS			
1200-03-31-.01	General Provisions	No	Reserved
1200-03-31-.02	Definitions	Yes	Provides definitions used in the chapter including a list of hazardous air pollutants, including an exclusion of electric utility steam generating units until EPA decides that they should be regulated pursuant to Section 112(n) of the Clean Air Act. No Applicable Requirement

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Citation	Title	Applicable Regulation	Comments
1200-03-31-.03	Intent of the Board	Yes	Describes the intent of the Board in implementing the chapter and instructing the Technical Secretary on things to consider and requirements in setting more stringent requirements than those set by EPA. No Applicable Requirement
1200-03-31-.04	Standard for Existing Sources	Yes	Describes emission requirements for existing sources. No Applicable Requirement
1200-03-31-.05	Standard for New Sources	Yes	Describes emission requirements for new sources. No Applicable Requirement
1200-03-31-.06	Opportunity for Early Reductions Schedule	Yes	Describes provisions to be met to allow for 6 additional years to comply with future MACT requirements by taking early reductions in emissions before a MACT is established. No Applicable Requirement
1200-03-31-.07	Residual Risk and Revisions to MACT	Yes	Specifies required action to be taken if the existing MACT standards are insufficient to protect the public pursuant to the residual risk provisions of Section 112(f) of the Clean Air Act. Applicable Requirement
1200-03-31-.08 through -.12	Reserved	No	Reserved
1200-03-31-.13	Perchloroethylene Air Emission Standards for Dry Cleaning Facilities	No	No Applicable Requirement
CHAPTER 1200-03-32 PREVENTION OF ACCIDENTAL RELEASES			
1200-03-32-.01	Purpose and Intent	No	Describes the purpose and intent of the Chapter. No Applicable Requirement
1200-03-32-.02	Definitions	Yes	Provides definitions specific to the Chapter. No Applicable Requirement
1200-03-32-.03	Duty to File Accidental Release Plans	Yes	Requires sources subject to Section 112(r) of the Clean Air Act to file any plan or submittal required with the Technical Secretary, describes the responsibility and authority of the Technical Secretary, and requires annual certification of compliance with the plan. No Applicable Requirement
CHAPTER 1200-03-033 REGULATIONS FOR THE ACCREDITATION AND CERTIFICATION OF ASBESTOS ABATEMENT PERSONNEL			

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Citation	Title	Applicable Regulation	Comments
1200-03-33	Repealed	No	No Applicable Requirements
CHAPTER 1200-03-34 CONFORMITY			
1200-03-34-.01	Conformity of Transportation Plans, Programs, and Projects	No	Describes the procedures for interagency consultation and resolution of conflicts before making conformity determinations and developing applicable implementation plans, specifies roles and responsibilities of various participants in the interagency, definitions of terms used, applicability of the requirements, specifies conformity determination criteria and procedures, requirements for adoption or approval of projects by recipients of funds designated under title 23 U.S.C. or the Federal Transit Act, procedures for determining regional transportation-related emissions, procedures for determining localized CO and PM ₁₀ concentrations, using the motor vehicle emissions budget, enforceability of design concept and scope and project-level mitigation and control measures, and a list of types of projects exempt from the conformity determination requirements. No Applicable Requirements
1200-03-34-.02	Conformity of General Federal Actions	Yes	Prohibits any department, agency or instrumentality of the Federal Government from engaging in, supporting or financially assisting any activity which does not conform to an applicable implementation plan with specified exceptions, defines terms used in the regulations, specifies the applicability of the requirements, specifies the requirements for a conformity analysis, reporting, public participation, frequency of determinations, criteria for determining conformity of general Federal actions, procedures for conformity determinations of general Federal actions, and the requirements for mitigation of air quality impacts. Applicable Requirements
CHAPTER 1200-03-36 MOTOR VEHICLE TAMPERING			
1200-03-36-.01	Purpose	No	Describes the purpose and content of the regulations. No Applicable Requirement
1200-03-36-.02	Definitions	Yes	Provides the definition of terms used in the regulations. No Applicable Requirement
1200-03-36-.03	Motor Vehicle Tampering Prohibited	Yes	Prohibits any person from tampering with a motor vehicle or motor vehicle engine that is in compliance with Federal motor vehicle standards. No Applicable Requirement
1200-03-36-.04	Recordkeeping Requirements	Yes	Requires maintaining complete record of all emission repairs for a minimum of one year. Applicable Requirement

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Citation	Title	Applicable Regulation	Comments
1200-03-36-.05	Exemptions	Yes	Permits the Technical Secretary to exempt motor vehicles or motor vehicle engines from the rule. No Applicable Requirement
CHAPTER 1200-03-37 CLEAN AIR MERCURY RULE			
1200-03-37	Clean Air Mercury Rule	No	No Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 52 – Approval and Promulgation of Implementation Plans**

Part	Title	Applicable Regulations	Comment
52.01	Definitions	No	Provides information not regulatory in nature. No Applicable Requirements
52.02	Introduction	No	Outlines contents of Part and Administrator’s approval process. No Applicable Requirements
52.04	Classification of Regions	No	States the location of criteria used for area classifications. No Applicable Requirements
52.05	Public Availability of Emission Data	No	Indicates that each subpart includes Administrator’s disapproval of plans and procedures for making emissions data available to the public and that the Administrator has promulgated requirements. No Applicable Requirements
52.06	Legal Authority	No	Reviews Administrator’s actions when a plan does not contain demonstration of adequate legal authority. No Applicable Requirements
52.07	Control Strategies	No	Outlines approval procedures for control strategies contained in Plans. No Applicable Requirements
52.08	Rules and Regulations	No	Indicates that each subpart will identify only those rules and regulations which have been disapproved. No Applicable Requirements
52.09	Compliance Schedules	No	Indicates that each subpart will identify those compliance schedules which have been disapproved.

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 52 – Approval and Promulgation of Implementation Plans**

Part	Title	Applicable Regulations	Comment
			It is also noted that individual source plans have not been evaluated. Finally, if a source is operating under a compliance plan under review by the Administrator, it must comply with the plan regardless of the approval status. No Applicable Requirements unless a specific compliance plan has been submitted to the Administrator.
52.10	Review of New Sources and Modifications	No	States that if a state NSR program does not meet specific requirements the Administrator has the authority to prevent construction or modification. No Applicable Requirements
52.11	Prevention of Air Pollution Emergency Episodes	No	Indicates that each subpart will identify those portions of the contingency plans which are disapproved. No Applicable Requirements
52.12	Source Surveillance	No	Indicates that each subpart will identify those portions of the source surveillance program which are disapproved. No Applicable Requirements
52.13	Air Quality Surveillance; Resources; Intergovernmental Cooperation	No	Indicates that each subpart will identify those portions of the air quality surveillance program which are disapproved. No Applicable Requirements
52.14	State Ambient Air Quality Standards	No	States that any state standard less stringent than a national standard will not be considered part of the plan. No Applicable Requirements
52.15	Public Availability of Plans	No	States the Plan must be made available to the Public. No Applicable Requirements
52.16	Submission to Administrator	Yes	Identifies where requests and reports required by regulations must be submitted. Applicable requirement if dictated by other regulation, or due to a request by the USEPA.
52.18	Abbreviations	No	Abbreviations are those contained in 40 CFR 60.
52.20	Attainment Dates for National Standards	No	Attainment dates are contained in each subpart for the affected areas. No Applicable Requirements
52.21	Prevention of Significant Deterioration of Air Quality	Yes	Outlines the PSD program for any plan for which that section has not been approved. The regulations contained herein are applicable to a source located in an attainment area. The regulations do not contain applicable requirements with respect to Title V. However, the terms and conditions attached to any permit issued pursuant to these regulations do constitute applicable requirements.

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 52 – Approval and Promulgation of Implementation Plans**

Part	Title	Applicable Regulations	Comment
52.23	Violation and Enforcement	Yes	States violation of an applicable Plan approved regulatory provision or permit condition is subject to enforcement under Section 113. No Applicable Requirements
52.24	Statutory Restriction on New Sources (NSR)	Yes	Outlines the NSR program for any plan for which that section has not been approved. The regulations contained herein are applicable to a source located in a nonattainment area. The regulations do not contain applicable requirements with respect to Title V. However, the terms and conditions attached to any permit issued pursuant to these regulations do constitute applicable requirements.
52.26	Visibility Monitoring Strategy	No	Provides regulations for plans whose general visibility provisions have been disapproved. No action required by a source. No Applicable Requirements
52.27	Protection of Visibility from Sources in Attainment Areas	No	Provides regulations for plans whose visibility provisions for attainment areas have been disapproved. No action required by a source. No Applicable Requirements
52.28	Protection of Visibility from Sources in Nonattainment Areas	No	Provides regulations for plans whose visibility provisions for nonattainment areas have been disapproved. No action required by a source. No Applicable Requirements
52.29	Visibility Long-term Strategies	No	Provides regulations for plans whose visibility provisions for Class I areas have been disapproved. No action required by a source. No Applicable Requirements
52.30	Criteria for Limiting Application of Sanctions Under Section 110(m) of the Clean Air Act on a Statewide Basis	No	Describes criteria EPA is to consider in determining whether to limit sanctions after a deficiency in a SIP has been identified. No Applicable Requirements
52.31	Selection of Sequence of Mandatory Sanctions for Findings Made Pursuant to Section 179 of the Clean Air Act	No	Provides schedule and criteria for invoking emission offset sanctions and highway funding sanctions in nonattainment areas for which the Part D implementation plan revision has not been approved. No Applicable Requirements
52.32	Sanctions Following Findings of SIP inadequacy	No	Provides that the Administrator may determine that a state implementation plan is inadequate and start the sanction process outlined in Section 52.31. No Applicable Requirements
52.33	Compliance Certifications	No	Permits the use of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test had been performed.

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 52 – Approval and Promulgation of Implementation Plans**

Part	Title	Applicable Regulations	Comment
			No applicable requirements
52.34	Action on petitions submitted under Section 126 relating to emissions of nitrogen oxides	No	Section sets forth the Administrator's findings with respect to the 1-hour NAAQS for ozone that certain new and existing sources of emissions of NO _x in certain states emit or would emit NO _x in violation of the prohibition in section 110(a)(2)(D)(i) of the Clean Air Act (CAA) on emission in amounts that contribute significantly to nonattainment in certain states that submitted petitions in 1997-1998 addressing such NO _x emissions under section 126 of the CAA. No applicable requirements.
52.35	What are the requirements of the Federal Implementation Plans (FIPs) for the Clean Air Interstate Rule relating to emissions of nitrogen oxides?	No	Sets forth the applicability of the Clean Air Interstate Rule FIP for nitrogen oxides for states that do not have an approved SIP
52.36	What are the requirements of the Clean Air Interstate Rule Federal Implementation Plans (FIPs) relating to emissions of sulfur dioxide?	No	Sets forth the applicability of the Clean Air Interstate Rule FIP for sulfur dioxide for states that do not have an approved SIP
Subpart RR - Tennessee			
52.2219	Reserved	No	Reserved
52.2220	Identification of Plan	Yes	Sets forth the applicable Tennessee State Implementation Plan and incorporates all EPA approvals prior to December 1, 1998. Applicable Requirement
52.2221	Classification of Regions	No	Specifies the priority classifications for all areas of the state. No Applicable Requirements
52.2222	Approval Status	No	Lists the approval status of the plan. No Applicable Requirements
52.2223	Compliance Schedules	Yes	Compliance schedules for owners or operators of boilers >250 million Btu/hr heat input who elect to meet requirements of TAPCR 1200-03-14 by either low-sulfur fuel or stack gas desulfurization. Applicable Requirements
52.2224	Legal Authority	No	Identifies specific areas lacking specific legal authority. No Applicable Requirements
52.2225	VOC Rule Deficiency Correction	No	Approves revisions concerning RACT rules and identifies specific deficiencies in Tennessee's, Nashville's and Memphis' regulations.

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 52 – Approval and Promulgation of Implementation Plans**

Part	Title	Applicable Regulations	Comment
			No Applicable Requirements
52.2226	Extensions	No	Identifies the NAAQS compliance extensions granted the state by the administrator. No Applicable Requirements
52.2227	Prevention Of Air Pollution Emergency Episodes	No	Identifies a deficiency in the state plan concerning mobile sources. No Applicable Requirements
52.2228	Review of New Sources and Modifications	No	State did not submit a plan for review of new or modified sources. Conditional approval of Nashville-Davidson County regulations. No Applicable Requirements
52.2229	Rules And Regulations	No	Specific rules of Memphis-Shelby County and Knox County are disapproved for inconsistencies with EPA policy and requirements. No Applicable Requirements
52.2230	Attainment Dates for National Standards	No	Lists the dates by which the NAAQS are to be attained by region. No Applicable Requirements
52.2231	Control Strategy: Sulfur Oxides and Particulate Matter	No	Conditional approval of Chattanooga TSP plan. Certification of emission limits not being based on dispersion techniques not permitted by EPA's stack height rule (excludes Johnsonville 1-10). No Applicable Requirements
52.2232	Reserved	No	Reserved
52.2233	Significant Deterioration of Air Quality	Yes	Disapproves paragraph 1200-03-09-.01(4)-(o)-2 concerning innovative control technology waivers. Also EPA retains authority for permits which involve vessel emissions where a source is not willing to include all vessel emissions in the definition of source. Applicable Requirements
52.2234	Visibility Protection	Yes	Part indicates the Plan is disapproved for visibility protection of Class I areas. Applicable Requirements
52.2235	Control Strategy: Ozone	No	Determines that Nashville ozone nonattainment area has attained the ozone standard and nonattainment provisions of the Clean Air Act do not apply so long as no violations of the standard are monitored. No Applicable Requirements
52.2236	Control Strategy; lead	No	Indicates acceptance of Tennessee's maintenance plan for Fayette County lead nonattainment area.

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 52 – Approval and Promulgation of Implementation Plans**

Part	Title	Applicable Regulations	Comment
			No Applicable Requirement
52.2237	NOx RACT and NOx conformity exemption	No	EPA approves Tennessee’s RACT rule and request for NOx conformity exemption. No Applicable Requirement
52.2239	Original Identification of plan section	Yes	Section identifies the original “Tennessee Air Pollution Control Implementation Plan” and all revisions submitted by Tennessee that were federally approved prior to December 1, 1998. Applicable Requirement
52.2240	Interstate pollutant transport provisions ; What are the FIP requirements for decreases in emissions of nitrogen oxides?	Yes	Specifies that the owner or operator of each NOx source located within the State of Tennessee and for which requirements are set forth under the Federal CAIR NOx Annual and Ozone Season Trading Programs in Part 97 of this chapter must comply with such applicable requirements. Applicable Requirement
52.2241	Interstate pollutant transport provisions ; What are the FIP requirements for decreases in emissions of sulfur dioxide?	Yes	Specifies that the owner or operator of each SO2 source located within the State of Tennessee and for which requirements are set forth under the Federal CAIR SO2 Annual and Ozone Season Trading Programs in Part 97 of this chapter must comply with such applicable requirements. Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR Subpart 58 – Ambient Air Quality Surveillance**

Subpart	Title	Applicable Regulations	Comment
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**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR Subpart 58 – Ambient Air Quality Surveillance**

Subpart	Title	Applicable Regulations	Comment
A	General Provisions	Yes	Contains definitions, states purpose and defines applicability which includes owners or operators of proposed sources. Applicable Requirements
B	Monitoring Criteria	Yes	Specifies monitoring criteria for monitoring networks including quality assurance requirements which specifies compliance with Appendix B for PSD monitors. No Applicable Requirements
C	State and Local Air Monitoring Stations (SLAMS)	No	Requires the establishment of SLAMS networks and describes monitoring program requirements for SLAMS networks. No Applicable Requirements
D	National Air Monitoring Stations (NAMS)	No	Requires the establishment of NAMS networks and describes monitoring program requirements for NAMS networks. No Applicable Requirements
E	Photochemical Assessment Monitoring Stations (PAMS)	No	Requires the establishment of PAMS networks and describes monitoring program requirements for PAMS networks. No Applicable Requirements
F	Air Quality Index Reporting	No	Requires states to report air quality indexes in areas with populations greater than specified. No Applicable Requirements
G	Federal Monitoring	No	Provides for establishing of federal monitoring networks under certain circumstances. No Applicable Requirements
App. A	Quality Assurance Requirements for State and Local Monitoring Stations (SLAMS)	No	Specifies quality assurance requirements for SLAMS networks. No Applicable Requirements
App. B	Quality Assurance Requirements for Prevention of Significant Deterioration (PSD) Air Monitoring	Yes	Specifies quality assurance requirements for PSD monitoring stations. No Applicable Requirements
App. C	Ambient Air Quality Monitoring Methodology	No	Specifies monitoring methods to be used in SLAMS networks. No Applicable Requirements
App. D	Network Design for SLAMS, NAMS, and PAMS	No	Describes monitoring objectives and general criteria for establishing SLAMS, NAMS, and PAMS networks. No Applicable Requirements
App. E	Probe Siting Criteria for Ambient Air Quality Monitoring	No	Describes probe siting criteria for air monitors in SLAMS, NAMS, and PAMS networks. No Applicable Requirements

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR Subpart 58 – Ambient Air Quality Surveillance**

Subpart	Title	Applicable Regulations	Comment
App. F	Annual SLAMS Air Quality Information	No	Describes information to be compiled and submitted annually to EPA for SLAMS stations. No Applicable Requirements
App. G	Uniform Air Quality Index and Daily Reporting	No	Describes the uniform air quality index to be used by States required to report indexes. No Applicable Requirements

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 60 – Standards of Performance for New Stationary Sources**

Subpart	Standard of Performance For:	Proposed Date	Effective Date	Affected Unit	Comment
A	General Provisions		11/17/75	Yes	Applies to any source which contains an affected unit or facility designated in Part 60.
B	Adoption and Submittal of State Plans for Designated Facilities		11/17/75	No	Applies to State actions only.
C	Emission Guidelines and Compliance Times		10/18/77	No	No affected units
D	Fossil-Fuel Fired Steam Generators for Which Construction is Commenced after August 17, 1971	8/17/71	12/23/71	No	No affected units
Da	Electric Utility Steam Generating Units for Which Construction is Commenced after September 18, 1978	9/18/78	6/11/79	No	No affected units
Db	Industrial-Commercial-Institutional Steam Generating Units	6/19/84	11/25/86	No	No affected units
Dc	Small Industrial-Commercial-Institutional Steam Generating Units	6/9/89	9/12/90	No	No affected units
E	Incinerators	8/17/71	12/13/71	No	No affected units
Ea	Municipal Waste Combustors	12/20/89	8/12/91	No	No affected Units
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced after June 11, 1973, and Prior to May 19, 1978	6/11/73	3/8/74	No	No affected units
Ka	Storage Vessels for Petroleum Liquids for Which Construction,	5/18/78	4/5/80	No	No affected units

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 60 – Standards of Performance for New Stationary Sources**

Subpart	Standard of Performance For:	Proposed Date	Effective Date	Affected Unit	Comment
	Reconstruction, or Modification Commenced after May 18, 1978, and Prior to July 23, 1984				
Kb	Storage Vessels for Volatile Organic Liquids for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984	7/23/84	4/8/87	No	No affected units
Y	Coal Preparation Plants	10/24/74	1/15/76	Yes	Applicable requirement
GG	Stationary Gas Turbines	10/3/77	9/10/79	Yes	Combustion Turbines (1-16) are not affected Combustion Turbines (17-20) are affected
OOO	Nonmetallic Minerals Processing Plants	8/31/83	8/1/85	No	No affected units
HHHH	Emission Guidelines and Compliance Times for Coal-fired Electric Steam Generating Units	1/30/04	5/18/05	No	Not Applicable

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 61 – National Emission Standards for Hazardous Air Pollutants**

Subpart	National Emission Standard For:	Affected Unit	Comment
A	General Provisions	Yes	Applies to any stationary source of a regulated pollutant for which a standard is prescribed in this Part.
C	Beryllium	No	No affected units
E	Mercury	No	No affected units
M	Asbestos	Yes	Renovation or demolition activities involving asbestos-containing materials at any unit or facility is applicable (40 CFR 61.145, Standard for Demolition and Renovation). Likewise, should the “Source” apply asbestos containing materials by spraying, the requirements of 40 CFR 61.146 (Standard for Spraying) are applicable.
Y	Benzene Emissions from Benzene Storage Vessels	No	No affected units

U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 63 – National Emission Standards for Hazardous Air Pollutants for Source Categories

Subpart	Title	Affected Unit	Comment
A	General Provisions Note this may be dependent on Subpart UUUUU (EGU's)	No	These provisions are applicable when a subsequent subpart is applicable. No subparts are applicable to "source" at this time.
B	Requirements for Control Technology Determinations for Major Sources in Accordance with Clean Air Act Sections 112(g) and 112(j)	No	Applies to a major source of HAPs in a source category/subcategory for which EPA has failed to promulgate a standard by the 112(j) deadline. Not an Applicable Requirement .
D	Regulations Governing Compliance Extensions for Early Reductions of Hazardous Air Pollutants	No	Applicable only if TVA files an application for compliance extension for early reductions. No affected units.
H	National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks	No	No affected units
Q	National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers	No	No affected units
T	National Emission Standards for Halogenated Solvent Cleaning	No	No affected units
YYYY	National Emissions Standards for Stationary Combustion Turbines	No	No applicable requirements even though facility is affected. Federal Register March 5, 2004 Page 10535
ZZZZ	National Emission Standards for Hazardous Air Pollutants for Stationary reciprocating Internal Combustion Engines.	No	No affected units
DDDDD	National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and institutional boilers and process heaters.	No	No affected units
UUUUU	National Emission Standards for Hazardous Air Pollutants From Coal- and Oil-Fired Electric Utility Steam Generating Units.	Yes	Applicable to Coal- and Oil-Fired Electric Utility Steam Generating Units.

Part	Title	Applicable Regulations	Comments
64.1	Definitions	No	Provides definitions for terms used in the regulation No Applicable Requirement
64.2	Applicability	Yes	Describes the general applicability of the regulation and specifies what emission limitation or standard and what units are exempt from the regulation. Applicable Requirement
64.3	Monitoring design criteria	Yes	Provides general criteria for monitoring design, performance criteria, evaluation factors and special criteria. Applicable Requirement
64.4	Submittal requirements	Yes	Specifies the information which the owner or operator of the source must submit to the regulatory authority concerning the monitoring system and documentation of compliance. Applicable Requirement
64.5	Deadlines for submittals	Yes	Specifies deadlines for submittal of required information. Applicable Requirement
64.6	Approval of monitoring	Yes	Requires the regulatory authority to act on monitoring submitted in the application and specifies minimum requirements for permit terms and conditions. Applicable Requirement
64.7	Operation of approved monitoring	Yes	Requires the owner or operator of the source to conduct monitoring in accordance with the issued part 70 or 71 permit, to provide proper maintenance of the monitors, when to collect acceptable data from the monitors, actions to be taken in response to excursions or exceedances during startup, shutdown, or malfunction conditions to minimize emissions and information needed to document such conditions, and what to do if emission limits are exceeded and the monitoring does not indicate the exceedances. Applicable Requirement
64.8	Quality improvement plan (QIP) requirements	Yes	Specifies when a QIP may be required, the elements contained in a QIP, when the owner or operator must develop a QIP, and when a QIP must be modified. Applicable Requirement
64.9	Reporting and recordkeeping requirements	Yes	Specifies what information must be reported as a minimum to the permitting authority and what records must be maintained and how to maintain the records. Applicable Requirement
64.10	Savings provisions	Yes	Indicates that compliance with this requirement does not affect compliance with other regulatory requirements or limits the authority of the administrator or permitting authority. Applicable Requirement

U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 66 – Assessment And Collection Of Noncompliance Penalties by EPA

Part	Title	Applicable Regulations	Comment
Subpart A - Purpose and Scope			
66.1	Applicability and Effective Date	No	Describes applicability of this part to proceedings for the assessment by EPA of a noncompliance penalty. No Applicable Requirement
66.2	Program Description	No	Describes what is contained in part 66. No Applicable Requirement
66.3	Definitions	No	Provides definitions of terms used in this part. No Applicable Requirement
66.4	Limitation on Review of Regulations	Yes	Describes what may not be challenged, reviewed or re-examined in a hearing conducted under this part and specifies limitations on review. Applicable Requirement
66.5	Savings Clause	No	Specifies the impact of proceedings under this part on other proceedings. No Applicable Requirement
66.6	Effect of Litigation: Time Limits	No	Describes the impact of failure of meeting time limits contained in this part on other proceedings under these regulations. No Applicable Requirement
Subpart B - Notice of Noncompliance			
66.11	Issuance of Notices of Noncompliance	No	Specifies the responsibilities of the Administrator in issuing a notice of noncompliance. No Applicable Requirement
66.12	Content of Notices of Noncompliance	No	Describes the content of a notice of noncompliance. No Applicable Requirement
66.13	Duties of Source Owner or Operator Upon Receipt of a Notice of Noncompliance	Yes	Specifies the action a source owner or operator must take within 45 days of receipt of a notice of noncompliance. Applicable Requirement
Subpart C - Calculation of Noncompliance Penalties			
66.21	How to Calculate the Penalty	Yes	Requires all penalty calculations be in accordance with the Technical Support Document and the Manual. Applicable Requirement
66.22	Contracting Out Penalty Calculation	No	Allows the Administrator to contract out the penalty calculation if the source owner or operator fails to carry out responsibilities under §66.13.

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 66 – Assessment And Collection Of Noncompliance Penalties by EPA**

Part	Title	Applicable Regulations	Comment
			No Applicable Requirement
66.23	Interim Recalculation of Penalty	Yes	Specifies action to be taken by the Administrator or source's owner if either feels that the penalty calculation is no longer accurate. Applicable Requirement
Subpart D - Exemption Requests; Revocation of Exemptions			
66.31	Exemptions Based on an Order, Extension or Suspension	Yes	Describes specific situations which are exempt from penalties and specifies the conditions for an exemption and the required demonstration by the source owner. Applicable Requirement
66.32	De Minimis Exemptions	Yes	Allows the Administrator to exempt an owner or operator from penalties for de minimis noncompliance upon petition for such exemption and specifies what the Administrator must consider and do in making the determination. Applicable Requirement
66.33	De Minimis Exemptions: Malfunctions	Yes	Allows the Administrator to exempt an owner or operator from penalties for de minimis noncompliance due to a malfunction upon petition demonstrating entitlement to such exemption and specifies what the Administrator must consider and do in making the determination. Applicable Requirement
66.34	Termination of Exemptions	No	Specifies when an exemption from penalty will be terminated and the actions required by the Administrator in terminating the exemption. No Applicable Requirement
66.35	Revocation of Exemptions	No	Specifies when an exemption from penalty will be revoked and the actions required by the Administrator in revoking the exemption. Not an Applicable Requirement
Subpart E - Decisions on Exemption Requests and Challenges to Notices of Noncompliance			
66.41	Decision on Petitions	No	Describes the actions the Administrator must take within 30 days after receipt of a petition. No Applicable Requirement
66.42	Procedure for Hearings	No	Specifies procedures for holding hearings and the time frames for the Presiding Officer to issue an initial decision. No Applicable Requirement
66.43	Final Decision; Submission of Penalty Calculation	Yes	Requires the owner or operator to submit penalty calculations and payment within 45 days of an adverse Agency decision. Applicable Requirement
Subpart F - Review of Penalty Calculation			

U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 66 – Assessment And Collection Of Noncompliance Penalties by EPA

Part	Title	Applicable Regulations	Comment
66.51	Action Upon Receipt of Penalty Calculation	No	Describes action to be taken by the Administrator within 30 days of receipt of a penalty calculation. No Applicable Requirement
66.52	Petitions for Reconsideration of Calculation.	Yes	If an owner or operator wished to challenge EPA's recalculation of a penalty, they must file a petition within 45 days of receipt of notice containing specified information. Applicable Requirement
66.53	Decisions on Petitions	No	Describes action to be taken by the Administrator within 30 days of receipt of a petition for reconsideration. No Applicable Requirement
66.54	Procedures for Hearing	No	Describes procedures for hearings. No Applicable Requirement
Subpart G - Payment			
66.61	Duty to Pay	Yes	Specifies when payments of penalties must be made. Applicable Requirement
66.62	Method of Payment	Yes	Describes how payments are to be made. Applicable Requirement
66.63	Nonpayment Penalty	Yes	Specifies a nonpayment penalty for failure to make a timely payment of a penalty. Applicable Requirement
Subpart H - Compliance and Final Adjustment			
66.71	Determination of Compliance	Yes	Requires the owner or operator paying a penalty to notify the Administrator when he believes the source is in full compliance and submit all necessary information. Specifies when the Administrator must make a determination of compliance. Provides for the owner or operator to petition for reconsideration or notify that the violated applicable requirement has been superseded and specifies when the Administrator must respond to the petition. Applicable Requirement
66.72	Additional Payment or Reimbursement	Yes	Specifies when the owner or operator is to submit recalculation of penalties after achieving compliance and what action the Administrator is to take. Applicable Requirement
66.73	Petition for Reconsideration and Procedure for Hearing	Yes	Specifies the time frame and form for petitioning for reconsideration and for the evaluation of and hearing on the petition. Applicable Requirement

U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 66 – Assessment And Collection Of Noncompliance Penalties by EPA

Part	Title	Applicable Regulations	Comment
Subpart H - Compliance and Final Adjustment			
66.74	Payment or Reimbursement	Yes	Specifies a time frame after any adjustment of a penalty when payment or reimbursement of any deficiency or overpayment is to occur. Applicable Requirement
Subpart I - Final Action			
66.81	Final Action	No	Describes what constitutes a final Agency action and specifies what final Agency actions are appealable. No Applicable Requirement
Subpart J - Supplemental Rules for Formal Adjudicatory Hearings			
66.91	Applicability of Supplemental Rules	No	Specifies what rules will govern all hearings held under this part. No Applicable Requirement
66.92	Commencement of Hearings	No	Specifies what actions must be taken upon the Administrator granting a hearing. No Applicable Requirement
66.93	Time Limits	No	Specifies when the Presiding Officer is to schedule a hearing and issue an initial decision. No Applicable Requirement
66.94	Presentation of Evidence	Yes	Specifies the sequence for the Administrator and the owner or operator to present evidence and what evidence is to be presented. Applicable Requirement
66.95	Decisions of the Presiding Officer; Appeal to the Administrator	Yes	Specifies requirements for the Presiding Officer to issue decisions and calculate penalties. Also specifies procedures for appealing the issued decision. Applicable Requirement
Appendices to Part 66			
App. A	Technical Support Document		See Appendix A to Part 67
App. B	Instruction Manual		See Appendix B to Part 67
App. C	Computer Program		See Appendix C to Part 67

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 68 – Chemical Accident Prevention Provisions**

Part	Title	Applicable Regulations	Comment
Subpart A - General			
68.1	Scope	No	Describes the scope of part 68 provisions. No Applicable Requirement
68.3	Definitions	Yes	Provides definitions of terms used in this part. No Applicable Requirement
68.10	Applicability	Yes	Details compliance dates and eligibility criteria for the 3 prevention programs. No Applicable Requirement
68.12	General Requirements	Yes	Lists requirements for processes in each of the prevention programs. No Applicable Requirement
68.15	Management	Yes	Describes management systems required for Programs 2 or 3. No Applicable Requirement
Subpart B - Hazard Assessment			
68.20	Applicability	Yes	Specifies hazard assessment requirements for each program. Not an Applicable Requirement
68.22	Offsite Consequence Analysis Parameters	Yes	Lists parameters to be used in offsite consequence analyses. Not an Applicable Requirement
68.25	Worst-Case Release Scenario Analysis	Yes	Details methodologies to be used in worst-case release analyses. Not an Applicable Requirement
68.28	Alternative Release Scenario Analysis	Yes	Provides details on alternative release scenario analyses. Not an Applicable Requirement
68.30	Defining Offsite Impacts - Population	Yes	Requires estimation of populations potentially affected by releases. Not an Applicable Requirement
68.33	Defining Offsite Impacts - Environment	Yes	Requires identification of environmental receptors potentially affected. Not an Applicable Requirement
68.36	Review and Update	Yes	Requires updates of offsite consequence analyses every 5 years or with significant changes. Not an Applicable Requirement
68.39	Documentation	Yes	Lists records on offsite consequence analyses to be retained on site. Not an Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 68 – Chemical Accident Prevention Provisions**

Part	Title	Applicable Regulations	Comment
68.42	Five-year Accident History	Yes	Requires accident histories for releases causing deaths, injuries, or significant property damages. Not an Applicable Requirement
Subpart C - Program 2 Prevention Program			
68.48	Safety Information	Yes	Details safety information that sources are required to develop. Not an Applicable Requirement
68.50	Hazard Review	Yes	Requires review of hazards associated with substances and processes. Not an Applicable Requirement
68.52	Operating Procedures	Yes	Requires development of procedures for safe process operation. Not an Applicable Requirement
68.54	Training	Yes	Requires employees be trained in the process operating procedures. Not an Applicable Requirement
68.56	Maintenance	Yes	Requires maintenance procedures be developed for processes. Not an Applicable Requirement
68.58	Compliance Audits	Yes	Requires an audit of compliance with provisions of this subpart every 3 years. Not an Applicable Requirement
68.60	Incident Investigation	Yes	Details investigation required for any incident that resulted in, or could have caused, a catastrophic release. Not an Applicable Requirement
Subpart D - Program 3 Prevention Program			
68.65	Process Safety Information	Yes	Requires compilation of process safety information. Not an Applicable Requirement
68.67	Process Hazard Analysis	Yes	Requires performance of an initial process hazard analysis, with updates every 5 years, and establishment of a system to address findings and recommendations from the analysis. Not an Applicable Requirement
68.69	Operating Procedures	Yes	Requires development of procedures for safe process operation. Not an Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 68 – Chemical Accident Prevention Provisions**

Part	Title	Applicable Regulations	Comment
68.71	Training	Yes	Requires employees be trained in the process operating procedures. Not an Applicable Requirement
68.73	Mechanical Integrity	Yes	Requires development of maintenance procedures, employee training, and inspection and testing for specified process equipment. Not an Applicable Requirement
68.75	Management of Change	Yes	Requires development of procedures to manage process changes. Not an Applicable Requirement
68.77	Pre-startup Review	Yes	Requires performance of a pre-startup safety review for new and modified sources. Not an Applicable Requirement
68.79	Compliance Audits	Yes	Requires an audit of compliance with provisions of this subpart every 3 years. Not an Applicable Requirement
68.81	Incident Investigation	Yes	Details investigation required for any incident that resulted in, or could have caused, a catastrophic release. Not an Applicable Requirement
68.83	Employee Participation	Yes	Requires consultation with employees and their representatives on process safety matters. Not an Applicable Requirement
68.85	Hot Work Permit	Yes	Requires issuance of an internal permit for welding and similar operations on or near covered processes. Not an Applicable Requirement
68.87	Contractors	Yes	Specifies that contractors are to be informed about process safety procedures. Not an Applicable Requirement
Subpart E - Emergency Response			
68.90	Applicability	Yes	Details exemption from emergency response program requirements. Not an Applicable Requirement
68.95	Emergency Response Program	Yes	Requires development of emergency response program with specified elements. Not an Applicable Requirement
Subpart F - Regulated Substances for Accidental Release Prevention			
68.100	Purpose	No	Establishes purpose of this subpart. Not an Applicable Requirement
68.115	Threshold Determination	Yes	Details procedures to determine whether a threshold quantity of a regulated substance is present at a source. Not an Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 68 – Chemical Accident Prevention Provisions**

Part	Title	Applicable Regulations	Comment
68.120	Petition Process	Yes	Specifies requirements for petitions to modify list of regulated substances. Not an Applicable Requirement
68.125	Exemptions	No	Provides an exemption for ammonia used in farming. Not an Applicable Requirement
68.126	Exclusion	No	Provides exclusion for flammable substances used as fuel or held for sale as fuel at retail facilities. Not an Applicable Requirement.
68.130	List of Substances	Yes	Establishes the list of regulated substances. Not an Applicable Requirement
Subpart G - Risk Management Plan			
68.150	Submission	Yes	Requires submittal of a single Risk Management Plan (RMP) for all covered processes. Not an Applicable Requirement
68.151	Assertion of Claims of Confidential Business Information	Yes	Permits a source to assert that some information is confidential business information, specifies what information can not be confidential and what information must be submitted to EPA. Not an Applicable Requirement
68.152	Substantiating Claims of Confidential Business Information	Yes	Requirements to Substantiate a claim of CBI and how the information must be submitted to EPA. No Applicable Requirements. Not an Applicable Requirement
68.155	Executive Summary	Yes	Details requirements for the RMP executive summary. Not an Applicable Requirement
68.160	Registration	Yes	Specifies identifying information to be provided in the RMP. Not an Applicable Requirement
68.165	Offsite Consequence Analysis	Yes	Specifies data on offsite consequence analysis to be given in the RMP. Not an Applicable Requirement
68.168	Five-year Accident History	Yes	Specifies data on 5-year accident history to be given in the RMP. Not an Applicable Requirement
68.170	Prevention Program/Program 2	Yes	Specifies data on Program 2 processes to be given in the RMP. Not an Applicable Requirement
68.175	Prevention Program/Program 3	Yes	Specifies data on Program 3 processes to be given in the RMP. Not an Applicable Requirement
68.180	Emergency Response Program	Yes	Specifies information on emergency response plan to be given in the RMP. Not an Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 68 – Chemical Accident Prevention Provisions**

Part	Title	Applicable Regulations	Comment
68.185	Certification	Yes	Details requirements for certification to be given in the RMP. Not an Applicable Requirement
68.190	Updates	Yes	Details requirements for RMP updates at least every 5 years. Not an Applicable Requirement
68.195	Required Corrections	Yes	Requirements for Submitting specified corrections to an RMP. Not an Applicable Requirement
Subpart H - Other Requirements			
68.200	Recordkeeping	Yes	Requires maintenance of relevant records for 5 years. Not an Applicable Requirement
68.210	Availability of Information to the Public	Yes	Specifies that the RMP shall be available to the public. Not an Applicable Requirement
68.215	Permit Content and Air Permitting Authority or Designated Agency Requirements	Yes	Details interface with Part 70 Operating Permit program. Not an Applicable Requirement
68.220	Audits	Yes	Provides for RMP audits by implementing agency with mechanism for requiring revisions in the RMP. Not an Applicable Requirement
Appendices to Part 68			
App. A	Table of Toxic Endpoints	Yes	Toxic endpoints to be used in offsite consequence analyses Not an Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 70 – State Operating Permit Programs**

Part	Title	Applicable Regulations	Comment
70.1	Program Overview	No	Provides an overview of the Title V permit program, allows states to establish additional or more stringent requirements, includes Title IV permits in the Title V program, and allows the coordination of the issuance of the permit with permits under RCRA and the Clean Water Act. Not an Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 70 – State Operating Permit Programs**

Part	Title	Applicable Regulations	Comment
70.2	Definitions	No	Provides definitions of terms used in this part. Not an Applicable Requirement
70.3	Applicability	Yes	Specifies what sources must have a permit and what sources are exempt from the permitting requirements and allows sources not subject to permits to opt into the permit program. Requires inclusion of fugitive emissions in the same manner as stack emissions. Applicable Requirement
70.4	State Program Submittals and Transition	Yes	Requires the Governor of each state to submit by a specified deadline a proposed part 70 program and specifies the elements of a program that must be contained in the proposed program for approval. Allows the Administrator to grant full, partial, or interim approval of programs under certain conditions and specifies state action in response to approval. Applicable Requirement
70.5	Permit Application	Yes	Requires the owner or operator of a part 70 source to submit a timely and complete permit application and specifies the time frames for submittal of a complete application. Requires states to provide standard application forms and specifies what the application form must include and the information that the owner or operator of the source must provide. Allows the state to develop a list of insignificant sources which may be exempt from the permitting requirements. Applicable Requirement
70.6	Permit Content	Yes	Specifies the standard requirements and content of a permit issued under this part. Requires the permit to be federally enforceable and specify compliance requirements. Provides for general permits and permits for temporary sources. Allows for a permit shield to be granted. Defines what is an emergency and how it may be used as a defense for noncompliance with a permit condition. Applicable Requirement
70.7	Permit Issuance, Renewal, Reopenings, and Revisions	Yes	Specifies the conditions under which a permit may be issued and prohibits a part 70 source from operating without a permit unless it has submitted a timely and complete application. Requires that permit renewal applications be timely and complete and subject to the same procedural requirements as an initial permit. Defines what an administrative permit amendment is and when it can be used. Defines a permit modification and specifies when and how it may be used. Provides for reopening of a permit for cause. Allows for public participation. Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 70 – State Operating Permit Programs**

Part	Title	Applicable Regulations	Comment
70.8	Permit Review by EPA and Affected States	No	Requires that the Administrator and affected states review permits before issuance and submit recommendations and objections to the permitting authority. Specifies EPA's role and responsibility in issuing a permit. Provides for public petition to the Administrator objecting to the issuance of a permit and specifies EPA action in response to a petition. Prohibits default issuance of a permit. Not an Applicable Requirement
70.9	Fee Determination and Certification	Yes	Requires owners and operators of a part 70 source to pay a fee and requires states to develop a fee program according to specified requirements that cover the cost of implementing the permit program. Applicable Requirement
70.10	Federal Oversight and Sanctions	No	Provides for federal oversight of the states permit program and specifies the actions and sanctions to be taken by the Administrator if a state fails to submit or implement a permit program. Specifies criteria for the withdrawal of a state program and provides for the federal collection of fees. Not an Applicable Requirement
70.11	Requirements for Enforcement Authority	No	Specifies required enforcement authority that each approved program must contain. Not an Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 72 – Permits Regulation**

Part	Title	Applicable Regulation	Comment
Subpart A - Acid Rain Program General Provisions			
72.1	Purpose and Scope	No	Provides the purpose and scope of the regulations in this part. Not an Applicable Requirement
72.2	Definitions	Yes	Provides definitions of terms used in this regulation. Not an Applicable Requirement
72.3	Measurements, Abbreviations, and Acronyms	Yes	Provides measurements, abbreviations, and acronyms used in this regulation. Not an Applicable Requirement
72.4	Federal Authority	Yes	Identifies authority reserved to the Administrator. Not an Applicable Requirement
72.5	State Authority	Yes	Allows states to adopt regulations not less stringent than EPA regulations. Not an Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 72 – Permits Regulation**

Part	Title	Applicable Regulation	Comment
72.6	Applicability	Yes	Identifies what are affected units to which these regulations are applicable and provides for petition for determination of an affected unit. Not an Applicable Requirement
72.7	New Units Exemption	Yes	Provides for the exemption of certain new utility units from the requirements. Not an Applicable Requirement
72.8	Retired Units Exemption	Yes	Provides for the exemption of units retired before the issuance of a Phase II permit. Not an Applicable Requirement
72.9	Standard Requirements	Yes	Requires sources to apply for an Acid Rain permit, operate in compliance with the application or permit, including monitoring requirements, sulfur dioxide requirements, nitrogen oxides requirements, excess emissions requirements, and recordkeeping and reporting requirements. Applicable Requirement
72.10	Availability of Information	No	Provides for the availability of information to the public. Not an Applicable Requirement
72.11	Computation of Time	Yes	Specifies when a time period is to begin on the occurrence of an act or event. Applicable Requirement
72.12	Administrative Appeals	Yes	Provides for procedures for appeals of decisions of the Administrator. Applicable Requirement
72.13	Incorporation by Reference	Yes	Incorporates certain ASTM methods by reference. Applicable Requirement
Subpart B - Designated Representative			
72.20	Authorization and Responsibilities of the Designated Representative	Yes	Requires that a designated representative be identified for a source in accordance with certain requirements. Applicable Requirement
72.21	Submissions	Yes	Requires submission of Acid Rain Program submittals containing certain certifications by the designated representative to the Administrator and the owners or operators of affected units. Applicable Requirement
72.22	Alternate Designated Representative	Yes	Provides for the designation of an alternate designated representative. Applicable Requirement
72.23	Changing the Designated Representative, Alternate Designated Representative; Changes in the Owners and Operators	Yes	Provides for the changing of designated and alternate designated representatives, and owners and operators with certain conditions. Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 72 – Permits Regulation**

Part	Title	Applicable Regulation	Comment
72.24	Certificate of Representation	Yes	Specifies the contents of a complete certificate of representation. Applicable Requirement
72.25	Objections	No	Specifies the effect of objections submitted to the Administrator and prohibits the Administrator from adjudicating any private legal dispute concerning actions of designated representatives. Not an Applicable Requirement
72.26	Delegation by designated representative and alternate designated representative	Yes	Specifies delegation authorities of designated representative and alternate designated representative. Applicable Requirement
Subpart C - Acid Rain Permit Applications			
72.30	Requirement to Apply	Yes	Requires designated representatives to submit complete Acid Rain permit applications by applicable deadlines. Applicable Requirement
72.31	Information Requirements for Acid Rain Permit Applications	Yes	Identifies specific information required for Acid Rain permit applications Applicable Requirement
72.32	Permit Application Shield and Binding Effect of Permit Application	Yes	Provides for an application shield upon submittal of a complete application and binds the source to operating according to the provisions in the application upon submittal of the application. Applicable Requirement
72.33	Identification of Dispatch System	Yes	Provides for the identification of dispatch systems for Phase I units. Applicable Requirement
Subpart D - Acid Rain Compliance Plan and Compliance Options			
72.40	General	Yes	Specifies the content and conditions of compliance plans and compliance options to be contained in an Acid Rain permit application. Applicable Requirement
72.41	Phase I Substitution Plans	No	Allows for the inclusion in the permit application of a substitution plan for Phase I units only. Specifies content and conditions of such a plan. Not an Applicable Requirement
72.42	Phase I Extension Plans	No	Provides for a 2-year extension of the deadline for meeting Phase I sulfur dioxide emission reduction requirements. Specifies the content of the required Early Ranking Application and the Phase I Extension Plan and conditions of an extension. Not an Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 72 – Permits Regulation**

Part	Title	Applicable Regulation	Comment
72.43	Phase I Reduced Utilization Plans	No	Requires the inclusion of a reduced utilization plan in a Phase I permit application if the owner/operators plan to reduce utilization of a Phase I unit by shifting generation to another unit or through energy conservation. Specifies the contents of a reduced utilization plan and contains special provisions. Not an Applicable Requirement
72.44	Phase II Repowering Extensions	Yes	Allows for extension of Phase II compliance for units being repowered by qualifying repowering technology. Requires the submittal of a petition for approval of repowering technology and a repowering extension plan and specifies the content of such petition and plan. Applicable Requirement
Subpart E - Acid Rain Permit Contents			
72.50	General	Yes	Specifies contents of an acid rain permit. Applicable Requirement
72.51	Permit Shield	Yes	Affected units operated in accordance with the acid rain permit are deemed to be operating in compliance with the acid rain program. Applicable Requirement
Subpart F - Federal Acid Rain Permit Issuance Procedures			
72.60	General	No	Describes the scope of the subpart and specifies a six month deadline for approval or disapproval of a permit application after receipt of a complete application. Not an Applicable Requirement.
72.61	Completeness	Yes	Specifies a 30 day time period for the Administrator to determine the completeness of an application and requires the designated representative to submit any supplemental requested information to the Administrator within 30 days of the Administrator's request. Applicable Requirement
72.62	Draft Permit	Yes	The Administrator will issue a draft permit after receipt of a complete application. Provides for a 30 day public comment period on the draft permit. Not an Applicable Requirement
72.63	Administrative Record	Yes	Requires the Administrator to prepare an administrative record for an acid rain permit or denial of a permit and specifies the content of the records. Not an Applicable Requirement
72.64	Statement of Basis	Yes	Specifies what a statement of basis will contain. Not an Applicable Requirement
72.65	Public Notice of Opportunities for	Yes	Requires the Administrator to give public notice of a draft permit or denial and opportunity for

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 72 – Permits Regulation**

Part	Title	Applicable Regulation	Comment
	Public Comment		public review and comment and specifies the content of such public notice. Not an Applicable Requirement
72.66	Public Comments	Yes	Requires submittal of written comments from the public and specifies the form of the comment and limitations on the contents of public comments. Not an Applicable Requirement
72.67	Opportunity for Public Hearing	Yes	Provides opportunity for public hearing and allows the Administrator to hold a public hearing on his own motion or at the request of any person. Not an Applicable Requirement
72.68	Response to Comments	Yes	Requires the Administrator to consider comments received during public comment or public hearing, identify changes to draft permit and state reason for change and briefly describe and respond to relevant comments. Not an Applicable Requirement
72.69	Issuance and Effective Date of Acid Rain Permits	Yes	Requires the Administrator to issue or deny a permit after close of the public comment period. The term of the permit will be for 5 years and will take effect on January 1, 1995. Not an Applicable Requirement
Subpart G - Acid Rain Phase II Implementation			
72.70	Relationship to Title V Operating Permit Program	Yes	Requires each state permitting authority to incorporate Acid Rain Program requirements into each affected sources permit Not an Applicable Requirement
72.71	Acceptance of State and Rain Programs - General	Yes	Requires each state to submit to the Administrator an operating permit program meeting Title V requirements. Upon approval of a state program, the Administrator will suspend federal issuance of Phase II acid rain permits. The Administrator will issue all Phase I acid rain permits. Not an Applicable Requirement
72.72	Criteria for State Operating Permit Program	Yes	Specifies certain criteria and requirements for an approvable state permitting program to incorporate acid rain program requirements. Not an Applicable Requirement
72.73	State Issuance of Phase II Permits	Yes	Specifies the responsibilities of states with full, interim, or partial permit program approvals to issue Phase II permits and the dates by which the permits are to be issued and the term of the permits. Not an Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 72 – Permits Regulation**

Part	Title	Applicable Regulation	Comment
72.74	Federal Issuance of Phase II Permits	Yes	Provides for the Administrator to issue the Phase II acid rain permits in states which do not have a full, interim, or partially approved permit program and specifies the dates for issuance of the permit. The Administrator will suspend federal issuance of the permit after approval of the state program. Not an Applicable Requirement
Subpart H - Permit Revisions			
72.80	General	Yes	Describes general requirements governing the Administrator or state revision of an acid rain permit. Not an Applicable Requirement
72.81	Permit Modifications	Yes	Specifies what permit revisions shall follow the permit modification procedures and the permit issuance requirements that the modifications must follow. Applicable Requirement
72.82	Fast-track Modifications	Yes	Specifies the responsibilities of the designated representative in requesting a fast-track modification, the procedures to be followed and the time frames for processing the modification request. Applicable Requirement
72.83	Administrative Permit Amendment	Yes	Specifies the type of permit revisions that shall follow the administrative permit amendment procedures. Applicable Requirement
72.84	Automatic Permit Amendment	Yes	Specifies the permit revisions that shall be deemed to automatically amend an acid rain permit. Applicable Requirement
72.85	Permit Reopenings	No	Describes when and how a permit is to be reopened. Not an Applicable Requirement
Subpart I - Compliance Certification			
72.90	Annual Compliance Certification Report	Yes	Specifies the deadline for submitting the annual report, the contents of the report and what the designated representative is certifying compliance with. Applicable Requirement
72.91	Phase I Unit Adjusted Utilization	No	Requires to be included in the annual certification report for Phase I units the adjusted utilization of the unit for the year and a confirmation report if a units annual compliance certification report estimates kilowatt hour savings or improvement in heat rate from energy conservation or improved efficiency under a reduced utilization plan. Not an Applicable Requirement
72.92	Phase I Unit Allowance Surrender	No	If a Phase I unit's adjusted utilization for the year is greater than zero, the report shall include the number of allowances that shall be surrendered along with other specified information. Not an Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 72 – Permits Regulation**

Part	Title	Applicable Regulation	Comment
72.93	Units With Phase I Extension Plans	No	Requires inclusion in the annual report for calendar year 1997 the start-up test results upon which the vendor is released from liability under the vendor certification of guaranteed sulfur dioxide removal efficiency. Not an Applicable Requirement
72.94	Units With Repowering Extension Plans	No	Identifies specific information concerning design, engineering and contract requirements which the designated representative must submit by January 1, 2000 for units under a repowering extension plan, and when certain notifications must be given. Not an Applicable Requirement
72.95	Allowance Deduction Formula	Yes	Provides a formula to be used to determine the total number of allowances to be deducted for the calendar year from the allowances held in a unit's subaccount. Applicable Requirement
72.96	Administrator's Action on Compliance Certifications	No	Describes actions the Administrator may take concerning any compliance certification. Not an Applicable Requirement
App. A	Methodology for Annualization of Emissions Limits	Yes	Specifies a method for determining the annualized emission limit for affected units. Applicable Requirement
App. B	Methodology for Conversion of Emissions Limits	Yes	Specifies a methodology for conversion of various emission limits to pounds of SO ₂ per million Btu. Applicable Requirement
App. C	Actual 1985 Yearly SO ₂ Emissions Calculation	No	Specifies the equation to be used to calculate the yearly SO ₂ emissions. Not an Applicable Requirement
App. D	Calculation of Potential Electric Output Capacity	Yes	Specifies the method for calculating the potential electric output capacity of a unit. Not an Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 73 – Sulfur Dioxide Allowance System**

Part	Title	Applicable Regulation	Comment
Subpart A - Background and Summary			
73.1	Purpose and Scope	No	Describes the purpose and scope of this Part. Not an Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 73 – Sulfur Dioxide Allowance System**

Part	Title	Applicable Regulation	Comment
73.2	Applicability	No	Specifies to whom this Part is applicable. Not an Applicable Requirement
73.3	General	Yes	Identifies requirements from other Parts that are applicable to this Part. Applicable Requirement
Subpart B - Allowance Allocations			
73.10	Initial Allocations for Phase I and Phase II	Yes	Specifies Phase I and Phase II allowances to be allocated to affected units accounts. Applicable Requirement
73.11	Reserved		
73.12	Rounding Procedures	No	Requires allowances to be allocated as whole allowances and specifies how allowances are to be rounded and how to achieve exact allowance reserves and allowance totals. Not an Applicable Requirement
73.13	Procedures for Submittals	Yes	Specifies how submittals are to be made and procedures for appealing decisions as to eligibility or allocation of allowances. Applicable Requirement
73.14	Reserved		
73.15	Reserved		
73.16	Reserved		
73.17	Reserved		
73.18	Submittal Procedures for Units Commencing Commercial Operation during the Period From 1/1/93 Through 12/31/95	No	Describes eligibility of a unit, when to submit application for allowances and how commencement of commercial operation is determined. Not an Applicable Requirement
73.19	Certain Units With Declining SO ₂ Rates	No	Specifies eligibility of units for this section and submittal procedures to be eligible for allowance allocations under this section. Not an Applicable Requirement
73.20	Phase II Early Reduction Credits	No	Specifies eligibility of Phase II units to obtain credits for early reduction of SO ₂ emissions. Not an Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 73 – Sulfur Dioxide Allowance System**

Part	Title	Applicable Regulation	Comment
73.21	Phase II Repowering Allowances	No	Specifies how repowering allowances are determined and allocated. Not an Applicable Requirement
73.22	Reserved		
73.23	Reserved		
73.24	Reserved		
73.25	Phase I Extension Reserve	No	Describes how the reserve is established, how the reserve is allocated and what happens to the remaining allowances. Not an Applicable Requirement
73.26	Conservation and Renewable Energy Reserve	No	Describes the establishment of the reserve and the distribution of allowances in the reserve. Not an Applicable Requirement
73.27	Special Allowance Reserve	No	Describes the establishment of the reserve, the reallocation of allowances and the distribution of proceeds from the auctions and sales of allowances. Not an Applicable Requirement
Subpart C - Allowance Tracking System			
73.30	Allowance Tracking System Accounts	Yes	Describes the nature and function of the allowance tracking system accounts. Applicable Requirement
73.31	Establishment of Accounts	Yes	Describes requirements for establishing accounts and specifies the requirements for opening an account. Applicable Requirement
73.32	Reserved		
73.33	Authorized Account Representative	Yes	Describes the responsibilities of the authorized account representative and allows for the designation of an alternate authorized account representative. Applicable Requirement
73.34	Recordation in Accounts	No	Specifies requirements for the Administrator for recording all allowances and deductions in accounts. Not an Applicable Requirement
73.35	Compliance	Yes	Describes the use of allowances in accounts for compliance. Applicable Requirement
73.36	Banking	Yes	Provides for the banking of allowances not used in a particular year. Applicable Requirement
73.37	Account Error and Dispute Resolution	Yes	Provides for notification of claim of account error, specifies what must be in a notification, and describes the process for dispute resolution. Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 73 – Sulfur Dioxide Allowance System**

Part	Title	Applicable Regulation	Comment
73.38	Closing Accounts	Yes	Describes provisions for closing an account. Applicable Requirement
Subpart D - Allowance Transfers			
73.50	Scope and Submission of Transfers	Yes	Describes the scope of the transfers to and from accounts and requires authorized account representatives to request transfers according to a format. Applicable Requirement
73.51	Prohibition	No	Prohibits Administrator from making certain transfers. Not an Applicable Requirement
73.52	EPA Recordation	No	Requires the Administrator to record allowance transfers provided certain information is submitted. Not an Applicable Requirement
73.53	Notification	No	Specifies requirements for the Administrator to notify the authorized account representative of recordation or non-recordation of transfers. Not an Applicable Requirement
Subpart E - Auctions, Direct Sales, and Independent Power Producers Written Guarantee			
73.70	Auctions	No	Requires the Administrator to conduct annual auctions of allowances and specifies requirements for conducting such auctions Not an Applicable Requirement
73.71	Bidding	No	Specifies who may bid and how the bidding is to be conducted. Not an Applicable Requirement
73.72	Direct Sales	No	Requires the Administrator to conduct sales of allowances annually, establishes the price of allowances, and specifies how the sales are to be conducted. Not an Applicable Requirement
73.73	Delegation of Auctions and Sales and Termination of Auctions and Sales	No	Allows the Administrator to delegate the conduct of auctions and sales and provides for the termination of auctions and sales. Not an Applicable Requirement
Subpart F - Energy Conservation and Renewable Energy Reserve			
73.80	Operation of Allowance Reserve Program for Conservation and Renewable Energy	No	Requires the Administrator to allocate allowances from the Conservation and Renewable Energy Reserve for qualifying measures and specifies the termination of the reserve. Not an Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 73 – Sulfur Dioxide Allowance System**

Part	Title	Applicable Regulation	Comment
73.81	Qualified Conservation Measures and Renewable Energy Generation	No	Describes what is a qualified conservation measure and renewable energy generation. Not an Applicable Requirement
73.82	Application for Allowances from Reserve Program	No	Specifies the requirements for an application for allowances from the Reserve Program. Not an Applicable Requirement
73.83	Secretary of Energy's Action on Net Income Neutrality Application	No	Specifies the actions the Secretary of Energy must take in processing and certifying net income neutrality applications. Not an Applicable Requirement
73.84	Administrator's Action on Applications	No	Specifies the actions the Administrator must take in processing and approving Allowance Reserve applications. Not an Applicable Requirement
73.85	Administrator Review of the Reserve Program	No	Specifies when the Administrator must review the reserve program and actions to be taken upon review. Not an Applicable Requirement
73.86	State Regulatory Autonomy	No	Allows for states to provide incentives to encourage investment in conservation measures or renewable energy generation. Not an Applicable Requirement
App. A	List of Qualified Energy Conservation Measures, Qualified Renewable Generation, and Measures Applicable for Reduced Utilization	No	Provides a list of approved qualifying measures. Not an Applicable Requirement
Subpart G - Small Diesel Refineries			
73.90	Allowance Allocations for Small Diesel Refineries	No	Specifies the contents of an application for certification of eligibility of a refinery and the request for allowances and how the Administrator will allocate allowances. Not an Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 75 – Continuous Emission Monitoring**

Part	Title	Applicable Regulations	Comment
Subpart A - General			
75.1	Purpose and Scope	No	Describes the purpose and scope of part 75 to establish monitoring, recordkeeping and reporting requirements and statistical estimation procedures for missing data. Not an Applicable Requirement
75.2	Applicability	Yes	Specifies the applicability of the regulations to affected units subject to Acid Rain emission limitations or reductions requirements. Applicable Requirement
75.3	General Acid Rain Program Provisions	Yes	Specifies the applicability of other parts to this part 75. Applicable Requirement
75.4	Compliance Dates	Yes	The provisions of this part apply to each affected unit on 2/10/93 and required completion of all certification tests for Phase I units by 11/15/93 and 1/1/95 for Phase II units. Applicable Requirement
75.5	Prohibitions	Yes	Prohibits operation of any affected unit in violation of any applicable regulation in this part, use of any nonapproved monitoring system or reference method, discharge of unaccounted emissions, or unpermissible disruption of monitoring equipment. Applicable Requirement
75.6	Incorporation by Reference	Yes	Incorporates by reference specified ASTM and ASME test methods and procedures. Applicable Requirement
75.7	Reserved		
75.8	Reserved		
Subpart B - Monitoring Provisions			
75.10	General Operating Requirements	Yes	Specifies general operating requirements for the measurement of opacity, SO ₂ , NO _x , CO ₂ , heat input and monitoring of operating parameters. Applicable Requirement
75.11	Specific Provisions for Monitoring SO ₂ Emissions (SO ₂ and flow monitors)	Yes	Describes specific monitoring requirements for certain situations and different fuels. Applicable Requirement
75.12	Specific Provisions for Monitoring NO _x Emission Rate (NO _x and diluent gas monitors)	Yes	Describes specific monitoring requirements for certain situations and different fuels and the calculation of NO _x emission rates. Applicable Requirement
75.13	Specific Provisions for Monitoring CO ₂ Emissions	Yes	Describes specific monitoring requirements for monitoring CO ₂ and the calculation of CO ₂ emission rates. Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 75 – Continuous Emission Monitoring**

Part	Title	Applicable Regulations	Comment
75.14	Specific Provisions for Monitoring Opacity	Yes	Describes specific monitoring requirements for certain situations and different fuels and sources exempt from monitoring. Applicable Requirement
75.15	Specific Provisions for Monitoring SO ₂ Emissions Removal by Qualifying Phase I Technology	Yes	Describes specific additional monitoring requirements for certain qualifying emissions removal technology and calculations necessary to demonstrate emissions removal efficiency. Applicable Requirement
75.16	Special Provisions for Monitoring Emissions from Common, Bypass, and Multiple Stacks for SO ₂ Emissions and Heat Input Determinations	Yes	Describes specific provisions for monitoring SO ₂ and heat input determinations for emissions from common, bypass, and multiple stacks for Phase I and Phase II units. Applicable Requirement
75.17	Special Provisions for Monitoring Emissions From Common, Bypass, and Multiple Stacks for NO _x Emission Rate	Yes	Describes specific provisions for monitoring NO _x emissions from common, bypass, and multiple stacks. Applicable Requirement
75.18	Specific Provisions for Monitoring Emissions From Common and Bypass Stacks for Opacity	Yes	Describes specific provisions for monitoring opacity from common and bypass stacks. Applicable Requirement
75.19	Optional SO ₂ , NO _x , and CO ₂ emissions calculation for low mass emissions (LME) units	Yes	Specifies optional SO ₂ , NO _x , and CO ₂ emissions calculation for low mass emissions (LME) units. Applicable Requirement.
Subpart C - Operation and Maintenance Requirements			
75.20	Initial Certification and Recertification Procedures	Yes	Specifies the process for certification or recertification of required monitoring, testing notification and application for certification requirements. Applicable Requirement
75.21	Quality Assurance and Quality Control Requirements	Yes	Requires the operation, calibration, and maintenance of continuous monitoring systems according to specified quality assurance and quality control procedures. Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 75 – Continuous Emission Monitoring**

Part	Title	Applicable Regulations	Comment
75.22	Reference Test Methods	Yes	Specifies reference test methods included in appendix A to part 60 to be used for certification or recertification tests and quality assurance and quality control procedures. Applicable Requirement
75.23	Alternatives to Standards Incorporated by Reference	Yes	Specifies procedures for petitioning for an alternative to any standard incorporated by reference and prescribed in this part. Applicable Requirement
75.24	Out-of-Control Periods and Adjustment for System Bias	Yes	Describes what an out-of-control period is and specifies action to be taken during such period. Applicable Requirement
Subpart D - Missing Data Substitution Procedures			
75.30	General Provisions	Yes	Describes periods when there is missing data and requires the substitution of data for those missing data periods. Applicable Requirement
75.31	Initial Missing Data Procedures	Yes	Defines the initial missing data period and specifies the procedures for providing substitute data. Applicable Requirement
75.32	Determination of Monitor Data Availability for Standard Missing Data Procedures.	Yes	Requires the calculation and recording of the percent monitor data availability for SO ₂ , CO ₂ (or O ₂), NO _x , and flow monitors by a specified procedure. Applicable Requirement
75.33	Standard Missing Data Procedures for SO ₂ , NO _x and Flow Rate	Yes	Requires providing substitute data for missing data according to specified procedures for SO ₂ , NO _x , and flow monitoring data. Applicable Requirement.
75.34	Units With Add-on Emission Controls	Yes	Provides for petitioning the Administrator to use an alternate method for providing missing data for units with add-on SO ₂ or NO _x controls. Applicable Requirement
75.35	Missing Data Procedures for CO ₂ Data	Yes	Requires providing substitute data for missing CO ₂ data using specified procedures. Applicable Requirement
75.36	Missing Data Procedures for Heat Input Determinations	Yes	Requires providing substitute data for missing heat input data using specified procedures. Applicable Requirement
75.37	Missing data procedures for moisture	Yes	Requires providing substitute data for missing moisture data using specified procedures. Applicable Requirement
Subpart E - Alternative Monitoring Systems			

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 75 – Continuous Emission Monitoring**

Part	Title	Applicable Regulations	Comment
75.40	General Demonstration Requirements	Yes	Provides for applying to the Administrator for approval of an alternative monitoring system (or system component) for collecting hourly SO ₂ , NO _x , or flow data. Applicable Requirement
75.41	Precision Criteria	Yes	Specifies methods and procedures for demonstrating the precision of the alternative method is equal to or better than the continuous monitoring system. Applicable Requirement
75.42	Reliability Criteria	Yes	Requires demonstrating the reliability of the alternative system to be equal to or better than the continuous monitoring system and meets the applicable requirements of App. B. Applicable Requirement
75.43	Accessibility Criteria	Yes	Requires demonstrating the accessibility of the alternative system to be equal to or better than the continuous monitoring system and meets the applicable requirements of subparts F and G. Applicable Requirement
75.44	Timeliness Criteria	Yes	Requires demonstrating the timeliness of the alternative system to be equal to or better than the continuous monitoring system and meets the applicable requirements of subparts F and G. Applicable Requirement
75.45	Daily Quality Assurance Criteria	Yes	Requires demonstrating that daily tests equivalent to those specified in App. B can be performed or that such tests are unnecessary. Applicable Requirement
75.46	Missing Data Substitution Criteria	Yes	Requires demonstrating that all missing data can be accounted for in a manner consistent with procedures specified in subpart D. Applicable Requirement
75.47	Criteria for a Class of Affected Units	Yes	Provides for applying to the Administrator for a class-approved alternative monitoring system and specifies information that must be provided. Applicable Requirement
75.48	Petition for an Alternative Monitoring System	Yes	Specifies information that must be submitted in the petition for approval of an alternative monitoring system. Applicable Requirement
Subpart F - Recordkeeping Requirements			
75.50	Reserved		
75.51	Reserved		
75.52	Reserved		

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 75 – Continuous Emission Monitoring**

Part	Title	Applicable Regulations	Comment
75.53	Monitoring Plan	Yes	Requires the preparation and maintenance of a monitoring plan and specifies the content of the plan. Specifies which requirements must be met before April 1, 2000 and which requirements must be met after April 1, 2000. Applicable Requirement
75.54	Reserved		
75.55	Reserved		
75.56	Reserved		
75.57	General Recordkeeping Provisions	Yes	Requires maintaining a file of all measurements, data, reports, and other information required by this part for at least three years and specifies the information to be maintained. Requirements apply on and after April 1, 2000. Applicable Requirement
75.58	General Recordkeeping Provisions for Specific Situations	Yes	Specifies recordkeeping requirements for specific situations that are in addition to those already required. Requirements apply on and after April 1, 2000. Not an Applicable Requirement
75.59	Certification, Quality Assurance and Quality Control Record Provisions	Yes	Requires specific information to be collected for calibration error tests, interference tests, linearity checks, leak checks, relative accuracy tests, cycle time tests, and results of all trial runs and certification tests and quality assurance activities and measurements. Requirements apply on and after April 1, 2000. Applicable Requirement
Subpart G - Reporting Requirements			
75.60	General Provisions	Yes	Requires the submittal of various reports, applications, certifications, etc. and specifies to whom they are to be submitted. Applicable Requirement
75.61	Notifications	Yes	Requires the submittal of notification of initial certification and recertification tests to the Administrator, EPA Regional Office, and State regulatory agency within specified time limits. Applicable Requirement
75.62	Monitoring Plan	Yes	Requires submittal of the monitoring plan to the Administrator no later than 45 days prior to the certification test. Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 75 – Continuous Emission Monitoring**

Part	Title	Applicable Regulations	Comment
75.63	Initial Certification or Recertification Application	Yes	Requires the submission of an application for certification or recertification to the Administrator within 45 days after completing the test and specifies the content and format of the application. Applicable Requirement
75.64	Quarterly Reports	Yes	Requires the submission on a quarterly basis to the Administrator of certain reports in an electronic format. Applicable Requirement
75.65	Opacity Reports	Yes	Requires the submission of reports on excess emissions of opacity to the applicable state or local regulatory agency in a format specified by them. Applicable Requirement
75.66	Petitions to the Administrator	Yes	Provides for submitting petitions to the Administrator for alternative flow monitoring method, alternative to standards incorporated by reference, alternative monitoring system, parametric monitoring procedure, and missing data for units with add-on controls. Applicable Requirement
75.67	Retired Units Petitions	Yes	Provides for petitioning the Administrator for an exemption from the requirements for continuous emission monitoring for units that will be permanently retired prior to 1/1/95. Not an Applicable Requirement
Subpart H – NO_x Mass Emissions Provisions			
75.70	NO _x Mass Emissions Provisions	Yes	Provides the general provisions of the requirements, including what units are subject to the requirement, compliance dates, prohibitions, initial certification and recertification procedures, quality assurance and quality control requirements, missing data procedures, reporting data prior to initial certification, requirements for petitions for alternate requirements Applicable Requirement
75.71	Specific Provisions for Monitoring NO _x Emission Rate and Heat Input for the Purpose of Calculating NO _x Mass Emissions	Yes	Provides specific requirements for monitoring NO _x emission rates and heat inputs for coal-fired units, making moisture correction, gas-fired nonpeaking units or oil-fired nonpeaking units, gas-fired or oil-fired peaking units, and other units. Applicable Requirement
75.72	Determination of NO _x Mass Emissions	Yes	Specifies how NO _x mass emission rates are to be determined for a unit utilizing common stack with other affected unit(s), a unit utilizing common stack with nonaffected unit(s), unit with a bypass stack, unit with multiple stacks, units using a NO _x concentration monitoring system and a flow monitoring system to determine NO _x mass emissions, units using the low mass emitter excepted methodology, and procedures for apportioning heat input to the unit level. Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 75 – Continuous Emission Monitoring**

Part	Title	Applicable Regulations	Comment
75.73	Recordkeeping and Reporting	Yes	Provides general recordkeeping and reporting requirements. Applicable Requirement
75.74	Annual and Ozone Season Monitoring and Reporting Requirements	Yes	Describes what monitoring and reporting requirements a source must meet if the source is subject to both an Acid Rain emissions limitation and a State or federal NO _x mass reduction program during the entire calendar year or if only subject to the requirements during the ozone season. Applicable Requirement
75.75	Additional Ozone Season Calculation Procedures for Special Circumstances	Yes	Describes additional calculations for units that are required to calculate ozone season heat input for determining allocations. Applicable Requirement
Appendices to Part 75			
App. A	Specifications and Test Procedures	Yes	Provides specification and test procedures for installation and measurement location, equipment specifications, performance specifications, data acquisition and handling systems, calibration gas, certification tests and procedures, and calculations. Applicable Requirement
App. B	Quality Assurance and Quality Control Procedures	Yes	Requires the development and implementation of a quality control program and specifies the minimum requirements, and specifies the frequency of certain required testing and the recording of information. Applicable Requirement
App. C	Missing Data Estimation Procedures	Yes	Specifies parametric monitoring procedures for missing SO ₂ concentration or NO _x emission rate data, and load-based procedures for missing flow rate and NO _x emission rate data. Applicable Requirement
App. D	Optional SO ₂ Emissions Data Protocol for Gas-Fired and Oil-Fired Units	Yes	Specifies optional procedures for determining hourly SO ₂ emissions from gas-fired and oil-fired units. Not an Applicable Requirement
App. E	Optional NO _x Emissions Estimation Protocol for Gas-Fired Peaking Units and Oil-Fired Peaking Units	Yes	Describes provisions and procedures for determining the average NO _x emission rate and hourly NO _x emission rate for gas-fired and oil-fired peaking units. Applicable Requirement
App. F	Conversion Procedures	Yes	Specifies procedures for converting measured data from a monitor into the appropriate units of the standard. Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 75 – Continuous Emission Monitoring**

Part	Title	Applicable Regulations	Comment
App. G	Determination of CO ₂ Emissions	Yes	Provides procedures for estimating CO ₂ mass emissions from combustion and sorbent used in wet flue gas desulfurization control system, fluidized bed boiler or other emission controls. Applicable Requirement
App. H	Revised Traceability Protocol No. 1	Reserved	
App. I	Optional F-Factor/Fuel Flow Method	Reserved	
App. J	Compliance Dates for Revised Recordkeeping Requirements and Missing Data Procedures	Reserved	

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 76 – Acid Rain Nitrogen Oxides Emission Reduction Program**

Part	Title	Applicable Regulations	Comment
76.1	Applicability	Yes	Applies to all coal-fired utility units subject to an Acid Rain emissions limitation or reduction requirement for SO ₂ under Phase I or Phase II and requires the NO _x emission limit apply on the date the unit must meet the SO ₂ reduction requirement. Applicable Requirement
76.2	Definitions	No	Provides definitions for all terms used in this part. Not an Applicable Requirement
76.3	General Acid Rain Program Provisions	Yes	Specifies requirements contained in part 72 that apply to this part. Applicable Requirement
76.4	Incorporation By Reference	Yes	Specifies certain test methods and procedures that are required to be used in this part which are incorporated by reference. Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 76 – Acid Rain Nitrogen Oxides Emission Reduction Program**

Part	Title	Applicable Regulations	Comment
76.5	NO _x Emission Limitation for Group 1 Boilers	Yes	Specifies the NO _x emission limits for tangentially-fired and dry bottom wall-fired Group 1 boilers and the dates on which compliance with those limits must be achieved. Not an Applicable Requirement
76.6	NO _x Emission Limitations for Group 2 Boilers	Yes	Specifies the NO _x emission limits Group 2 coal-fired boilers with cell burner, cyclone, wet bottom, or vertically fired boilers. Applicable Requirement
76.7	Revised NO _x Emission Limitations for Group 1, Phase II Boilers	Yes	Specifies the NO _x emission limits for Group I, Phase II coal-fired boilers with tangentially fired or dry bottom wall-fired boilers. Applicable Requirement
76.8	Early Election for Group 1, Phase II Boilers	Yes	Describes provisions for early election for a Group 1 Phase II boiler to meet the applicable NO _x emission limitation not later than 1/1/97. Requires the submission of an early election plan and specifies the content of the plan. Applicable Requirement
76.9	Permit Application and Compliance Plans	Yes	Requires the submittal of a complete Acid Rain permit application that includes a complete compliance plan for NO _x emissions covering the unit. Specifies the dates for submittal and the contents of a NO _x compliance plan. Applicable Requirement
76.10	Alternative Emission Limitations	Yes	Provides for petitioning for an alternative less stringent emission limitation if unable to meet the required limit by using specified technology. Specifies required demonstration of inability to meet the required emission limit, the content of a petition for an alternate standard, and actions to be taken to renew or change the alternate standard. Applicable Requirement
76.11	Emissions Averaging	Yes	Provides for averaging NO _x emissions for all units under control of the same owner or operator and having the same designated representative under an averaging plan. Requires the submittal of an averaging plan and specifies the content of such plan. Applicable Requirement
76.12	Phase I NO _x Compliance Extensions	No	Provides for applying for a 15-month extension of the deadline for meeting the emission limitation for certain situations and specifies the content of Phase I NO _x compliance extension plans. Not an Applicable Requirement
76.13	Compliance and Excess Emissions	Yes	Specifies the method for calculating excess emissions of NO _x . Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 76 – Acid Rain Nitrogen Oxides Emission Reduction Program**

Part	Title	Applicable Regulations	Comment
76.14	Monitoring, Recordkeeping, and Reporting	Yes	Describes the content of a petition for an alternative emission limitation demonstration period and petition for alternative emission limitation and requires reporting of costs of low NO _x burner technology applied to Group 1, Phase I boilers. Applicable Requirement
76.15	Test Methods and Procedures	Yes	Specifies tests required to be used for the basis for a petition for a final alternative emission limitation. Applicable Requirement
App. A	Phase I Affected Coal-Fired Utility Units With Group 1 or Cell Burner Boilers	No	Tables listing all Phase I affected coal-fired utility units with Group 1 or cell burner boilers. Not an Applicable Requirement
App. B	Procedures and Methods for Estimating Costs of Nitrogen Oxides Controls Applied to Group 1, Phase I Boilers	No	Specifies the procedures, methods, and data to be used by the Administrator in establishing the degree of reduction achievable and estimating the average capital cost and average cost-effectiveness of installed low NO _x burner technology applied to Group 1, Phase I boilers. Specifies information required to be submitted by each designated representative of a Phase I affected unit. Not an Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 77 – Excess Emissions**

Part	Title	Applicable Regulations	Comment
77.1	Purpose and Scope	No	Describes the purpose and scope of this part which specifies the excess emissions offset planning and offset penalty requirements. Not an Applicable Requirement
77.2	General	Yes	Specifies the applicability of sections of part 72 to this part and the procedures for appeals. Applicable Requirement
77.3	Offset Plans for Excess Emissions of Sulfur Dioxide	Yes	Requires an excess emissions offset plan for each unit having excess emissions in a calendar year and specifies the content of the plan. Applicable Requirement
77.4	Administrator's Action on Proposed Offset Plans	Yes	Describes the action of the Administrator in processing a proposed offset plan and requires the designated representative to submit any additional information requested by the Administrator with 30 days of request. Applicable Requirement
77.5	Deduction of Allowances to Offset Excess Emissions of Sulfur Dioxide	Yes	Specifies how deduction of allowances to offset excess emissions will be made and requires the designated representative to hold sufficient allowances in the appropriate account to cover the deductions. Applicable Requirement
77.6	Penalties for Excess Emissions of Sulfur Dioxide and Nitrogen Oxides	Yes	Requires the payment of penalties for excess emissions of SO ₂ and NO _x and specifies how the penalties are to be calculated. Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 78 – Appeal Procedure For Acid Rain Program**

Part	Title	Applicable Regulations	Comment
78.1	Purpose and Scope	Yes	Specifies the decisions of the Administrator that may be appealed, requires the filing of a petition for administrative review with the Environmental Appeals Board to appeal a decision. Applicable Requirement
78.2	General	Yes	Specifies sections of part 72 that apply to this part. Applicable Requirement
78.3	Petition for Administrative Review and Request for Evidentiary Hearing	No	Specifies who may appeal specific decisions and what must be contained in a petition for administrative review. Not an Applicable Requirement
78.4	Filings	No	Specifies what must be contained in a filing for administrative review, who may make a filing, and who must be notified of a filing. Not an Applicable Requirement
78.5	Limitation on Filing or Presenting New Evidence and Raising New Issues	No	Specifies when new evidence or new issues may be presented or raised and provides exceptions to the requirement. Not an Applicable Requirement
78.6	Action on Petition for Administrative Review	No	Describes what action the Environmental Appeals Board can take upon receipt of a petition for Administrative Review. Not an Applicable Requirement
78.7	Reserved		
78.8	Consolidation and Severance of Appeals Proceedings	No	Describes the authority of the Environmental Appeals Board to consolidate proceedings or sever issues or parties from a proceeding. Not an Applicable Requirement
78.9	Notice of the Filing of Petition for Administrative Review	No	Requires the Administrator to publish a notice in the Federal Register concerning an administrative review. Not an Applicable Requirement
78.10	Ex parte Communications During Pendency of a Hearing	Yes	Prohibits any ex parte communications between all parties involved in an appeal and describes actions to be taken if ex parte communications occur. Applicable Requirement
78.11	Intervenors	No	Provides for filing motion for leave to intervene and specifies conditions for granting the motion. Not an Applicable Requirement
78.12	Standard of Review	No	Specifies the responsibilities of the parties involved in the hearing to pursue the review. Not an Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 78 – Appeal Procedure For Acid Rain Program**

Part	Title	Applicable Regulations	Comment
78.13	Scheduling Orders and Pre-hearing Conferences.	No	Requires the Presiding Officer to issue an order scheduling certain activities. Not an Applicable Requirement
78.14	Evidentiary Hearing Procedure	No	Describes the authority of the Presiding Officer during an evidentiary hearing, and requires all testimony be filed in written form. Not an Applicable Requirement
78.15	Motions in Evidentiary Hearings	No	Describes who may file motion in an evidentiary hearing and on what the motions can be filed. Not an Applicable Requirement
78.16	Record of Appeal Proceeding	No	Requires a record of appeal proceedings and specifies what will be in the record and the process involved with filing the record. Not an Applicable Requirement
78.17	Proposed Findings and Conclusions and Supporting Brief	No	Specifies when a party may file proposed findings and conclusions with the Hearing Clerk after the complete transcript is available. Not an Applicable Requirement
78.18	Proposed Decision	No	Provides for decisions by the Presiding Officer becoming final Agency action unless appealed within 30 days. Not an Applicable Requirement
78.19	Interlocutory Appeal	No	Provides for filing interlocutory appeals and describes actions to be taken by the Presiding Officer and the Environmental Appeals Board. Not an Applicable Requirement
78.20	Appeal of Decision of Administrator or Proposed Decision to the Environmental Appeals Board	No	Provides for appealing a proposed decision of the Presiding Officer and the responsibilities of the involved parties following the appeal and specifies the impact of an order issued by the Environmental Appeals Board. Not an Applicable Requirement

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40**

**40 CFR 96 – NO_x Budget Trading Program and CAIR NO_x and SO₂ Trading Programs for State Implementation Plans
40 CFR 97 – Federal NO_x Budget Trading Program and CAIR NO_x and SO₂ Trading Programs**

Part	Title	Applicable Regulations	Comment
96.1 through 96.88 97.1 through 97.88	Subparts A through I – NO _x Budget Trading Program (all provisions)	No	Pursuant to 40 CFR §51.121, “Notwithstanding any provisions of paragraph (p) of this section, subparts A through I of part 96 of this chapter, and any State's SIP to the contrary, the Administrator will not carry out any of the functions set forth for the Administrator in subparts A through I of part 96 of this chapter, or in any emissions trading program in a State's SIP approved under paragraph (p) of this section, with regard to any ozone season that occurs after September 30, 2008.” Not an Applicable Requirement
96.101 through 96.188; 97.101 through 97.188	Subparts AA through II – CAIR NO _x Annual Trading Program	Yes	Pursuant to 40 CFR §52.2240(c), “Notwithstanding any provisions of paragraphs (a) and (b) of this section and subparts AA through II and AAAA through IIII of part 97 of this chapter to the contrary: (1) With regard to any control period that begins after December 31, 2011, (i) The provisions in paragraphs (a) and (b) of this section relating to NO _x annual or ozone season emissions shall not be applicable; and (ii) The Administrator will not carry out any of the functions set forth for the Administrator in subparts AA through II and AAAA through IIII of part 97 of this chapter; and (2) The Administrator will not deduct for excess emissions any CAIR NO _x allowances or CAIR NO _x Ozone Season allowances allocated for 2012 or any year thereafter...”
96.201 through 96.288; 97.201 through 97.288	Subparts AAA through III – CAIR SO ₂ Annual Trading Program	Yes	Pursuant to 40 CFR §52.2241(b), “Notwithstanding any provisions of paragraph (a) of this section and subparts AAA through III of part 97 of this chapter and any State's SIP to the contrary: (1) With regard to any control period that begins after December 31, 2011, (i) The provisions of paragraph (a) of this section relating to SO ₂ emissions shall not be applicable; and (ii) The Administrator will not carry out any of the functions set forth for the Administrator in subparts AAA through III of part 97 of this chapter...”
96.301 through 96.388; 97.301 through 97.388	Subparts AAAA through IIII – CAIR NO _x Ozone Season Trading Program	Yes	Pursuant to 40 CFR §52.2240(c), “Notwithstanding any provisions of paragraphs (a) and (b) of this section and subparts AA through II and AAAA through IIII of part 97 of this chapter to the contrary: (1) With regard to any control period that begins after December 31, 2011, (i) The provisions in paragraphs (a) and (b) of this section relating to NO _x annual or ozone season emissions shall not be applicable; and (ii) The Administrator will not carry out any of the functions set forth for the Administrator in subparts AA through II and AAAA through IIII of part 97 of this chapter; and (2) The Administrator will not deduct for excess emissions any CAIR NO _x allowances or CAIR NO _x Ozone Season allowances allocated for 2012 or any year thereafter...”

**U.S. Environmental Protection Agency (EPA)
Code of Federal Regulations (CFR) Title 40
40 CFR 98 – Mandatory Greenhouse Gas Reporting**

Part	Title	Applicable Regulations	Comment
98.1 through 98.9	Subpart A – General Provisions	Yes	Applicable Requirement
Reserved	Subpart B – Reserved		
98.30 through 98.38	Subpart C – General Stationary Fuel Combustion Sources	No	Not an Applicable Requirement
98.40 through 98.48	Subpart D – Electricity Generation	Yes	Applicable Requirement
98.50 through 98.298	Subparts E through CC	No	GHG reporting requirements for various source categories. Not an Applicable Requirement
98.300 through 98.308	Subpart DD—Electrical Transmission and Distribution Equipment Use	Yes	Applicable Requirement
98.300 through 98.449	Subparts EE through RR	No	GHG reporting requirements for various source categories. Not an Applicable Requirement
98.450 through 98.458	Subpart SS—Electrical Equipment Manufacture or Refurbishment	Yes	Applicable Requirement
98.460 through 98.478	Subparts TT through UU	No	GHG reporting requirements for various source categories. Not an Applicable Requirement

ATTACHMENT 9

Compliance Assurance Monitoring Protocol

New Johnsonville Fossil Plant

**COMPLIANCE ASSURANCE MONITORING PROTOCOL
ELECTROSTATIC PRECIPITATOR (ESP) FOR PM CONTROL
JOHNSONVILLE POWER PLANT**

I. Background

A. Emissions Unit

Description:	Ten Coal-Fired Boilers 1-4 are 1405 MMBtu/hr 5-6 are 1566 MMBtu/hr 7-10 are 1734 MMBtu/hr
Identification:	43-0011-01 thru 10
Facility:	Johnsonville Fossil Plant, New Johnsonville, TN

B. Applicable Regulation, Emissions Limit, and Monitoring Requirements

Regulations:	TAPCR 1200-3-6-.02(1)
Emissions Limits: Particulate Matter (PM):	0.100 lb/MMBtu
Current Monitoring Requirements:	None

C. Control Technology: Electrostatic Precipitator

II. Monitoring Approach

The key elements of the monitoring approach, including the indicators to be monitored, indicator ranges, and performance criteria are presented in Table 3-1. The selected performance indicator is the measured opacity from the continuous opacity monitoring system (COMS) on each duct.

III. Corrective Action

The key elements of the corrective action procedures are presented in Table 3-2. Corrective action is designed to discover and correct the problem that is creating the opacity increase. Corrective action is initiated before an excursion has occurred and continues until the potential excursion condition has been rectified. The trigger point that initiates corrective action is greater than 28 percent opacity for a one-hour block average excluding those events defined as startup/shutdown and malfunctions. Initiation of corrective action does not create a reporting requirement.

COMPLIANCE INDICATOR	
Indicator:	Opacity
Measurement Approach:	The opacity is measured using a Continuous Opacity Monitoring System (COMS) on each stack. An excursion is defined as a measured opacity greater than 28 percent for a period of three consecutive hours, excluding those events defined as startup/shutdown and malfunctions. An excursion triggers a reporting requirement. Corrective action must be initiated when measured opacity is greater than 28 percent for a one-hour block average excluding those events defined as startup/shutdown and malfunctions. Corrective action does not trigger a reporting requirement.
Indicator Ranges:	
Performance Criteria:	
A. Data Representativeness:	Under normal boiler operation, as the mass emissions increase it can be reasonably expected that the opacity will also increase. The opacity monitors are located in the stack with no bypass capabilities. The opacity monitors meet the installation and minimum acceptable accuracy requirements of 40 CFR Part 60, Performance Specification 1.
B. Verification of Operational Status:	Not applicable. Monitoring approach uses existing equipment.
C. QA/QC Practices and Criteria:	Daily zero and calibration drift check, periodic cleaning of optical surfaces and other periodic QA/QC checks as specified in the applicable version of Performance Specification 1.
D. Monitoring Frequency and Data Collection Procedures:	Continuous. The COMS collects a data point every 10 seconds and reduces the data to one-hour and three-hour block averages.
Averaging Period:	Three-hour block average for an excursion. One-hour block average for corrective action.

Table 3-1: Monitoring Approach

DESCRIPTION	
Initiation of Corrective Action Procedures:	Corrective action shall be initiated when a one-hour opacity average exceeds 28 percent. The plant staff that made the discovery shall immediately notify the shift supervisor or plant environmental coordinator.
Time of Completion of Corrective Action Procedures:	As soon as practically possible.
Corrective Action Description:	Corrective action will include ESP inspection, returning tripped ESP sections to service (if possible), evaluation of the ash removal and rapper system, and, if absolutely necessary, load reduction.

Table 3-2: Corrective Action Procedures Summary

MONITORING APPROACH JUSTIFICATION

I. Background

Ten pulverized coal-fired boilers are operated at this facility. Boiler Units 1-6 are tangentially-fired units, and Boiler Units 7-10 are wall-fired. Units 1-4 are 1405 MMBtu/hr, Units 5 and 6 are 1566 MMBtu/hr, and Units 7-10 are 1734 MMBtu/hr. The boilers burn coal as the primary fuel and utilize No. 2 fuel oil as the start-up fuel. Exhaust gases are discharged through one stack. The stack is 600 feet high and has no bypass capabilities. Boiler Units 1-3 were constructed in 1951, and Boiler Units 4-6 were constructed in 1952. Boiler Unit 7 was constructed in 1958, Boiler Units 8-10 were constructed in 1959. All four boilers are subject to Tennessee Air Pollution Control Regulations (TAPCR), Paragraph 1200-3-6-.02(1) for particulate matter.

Particulate emissions from each boiler are controlled by a unit-specific ESP. Each box for Units 1-6 has a total plate area of 127,000 square feet for a design specific collector area of 266 square feet per 1,000 actual cubic feet per minute of flue gas. Each box for Units 7 - 10 has a total plate area of 177,900 square feet for a design specific collector area of 323 square feet per 1,000 actual cubic feet per minute of flue gas.

The stack is equipped with an existing Continuous Opacity Monitoring System (COMS), with an opacity monitor located in the stack. An opacity converter is used to calculate the equivalent stack exit opacity. Currently, there are no monitoring requirements for particulate matter.

II. Rationale for Selection of Performance Indicators

The purpose of this section is to provide technical justification in support of a compliance assurance protocol based on opacity known as "test and cap." Under a standard test and cap approach, the relationship of stack opacity to particulate mass concentration is determined at or very near the opacity limit. If the mass concentration is below the permit limit, then two opacity trigger points are set at this level. The first trigger point is the threshold at which corrective action is to be performed. This trigger point indicates that the control device may not be operating properly and action should be taken to restore normal operation. The second trigger point defines an excursion. This trigger point is also set at the opacity limit but has a longer averaging period and causes a reportable event under CAM.

Opacity Monitor Theory of Operation

Opacity monitors operate under a physics principle known as optical extinction. In a basic configuration, a beam of light of a specific wavelength is transmitted across a particulate-laden fluid flow. A receiver at some distance from the transmitter measures the amount of light that is received. Due to reflection and refraction of the light beam by the particles within the fluid, the amount of light reaching the receiver will be less than the beam's initial intensity. This property is referred to as transmittance and is represented by the following equation:

$$T = \frac{I}{I_0} \quad (3.1)$$

Opacity is related to transmittance by the following equation:

$$O = 1 - T. \quad (3.2)$$

The physics of the opacity meter are based on Lambert's Law, which can be expressed mathematically by the following equation:

$$O = 1 - e^{-\frac{S_{avg} m_{avg} x}{4}}, \quad (3.3)$$

where O denotes the opacity of flue gas; S_{avg} is the specific surface area of the particles (m^2/g); m_{avg} is the particulate mass concentration (g/Nm^3); and x is the optical path length (m)

Equation 3.3 indicates that as the concentration of particles increases the opacity will increase because the transmittance of the light beam across the stack is reduced by the additional reflection of the light caused by the greater number of particles. In addition, equation 3.3 demonstrates the effect of particle size distribution on opacity. For a given mass concentration, flue gas containing a large number of fine particles will tend to produce higher opacities because the increased amount of fine particles has a larger specific surface area and causes greater reflection of the light beam.

The particle size distribution and specific surface area of the particles will remain relatively similar for a coal-fired boiler operating under normal load that is equipped with an ESP. This is particularly true of units that consistently burn similar coal, such as Johnsonville. This means that any change in opacity, as a first-order approximation, will be directly proportional to the mass concentration. Therefore, while opacity is not a direct measurement of particulate mass, it can be used as a surrogate. If opacity is increasing, it can be reasonably expected that the particulate mass concentration is also increasing.

Developing an accurate correlation between opacity and particulate mass emissions over the entire spectrum of operating conditions is difficult, if not impossible, because of the variability in the process factors that affect the particle properties and size distribution. For CAM, however, it is sufficient that the indicator and emission rate are related so as to provide a reasonable assurance of compliance at normal operating conditions. The test and cap approach meets this requirement. Furthermore, the use of opacity as a CAM indicator for particulate mass is considered presumptively acceptable under §64.3(d). The existing COMS at Johnsonville meets the requirements of §64.3(d)(2)(ii) under 40 CFR 60, Appendix B, Performance Specification 1.

III. Rationale for Selection of Indicator Ranges

The selected indicator range for each unit is 28 percent opacity. An excursion, for the purposes of CAM compliance, is defined as a three-hour opacity average of 28 percent or higher, excluding startup/shutdown and malfunction events. While the existing permit limit does not define an averaging period for CAM compliance, the three-hour averaging period was selected based on the time interval required to conduct a compliance test using EPA Reference Method 17. Corrective action will be initiated on a one-hour average basis as described in Table 3-2, beginning with an evaluation of the occurrence to determine the action required to correct the situation. All three-hour average excursions will be documented and reported. One-hour averages that initiate corrective action do not have to be reported.

Verification of Opacity/Mass Relationships

In order to validate these assumptions, particulate mass emissions were measured at TVA's Johnsonville Fossil Plant (JOF) before and after ESP modifications. The objective of the testing was to derive the stack opacity/mass relationship for the units.

Test Results

Table 1 shows a summary of the test results for JOF.

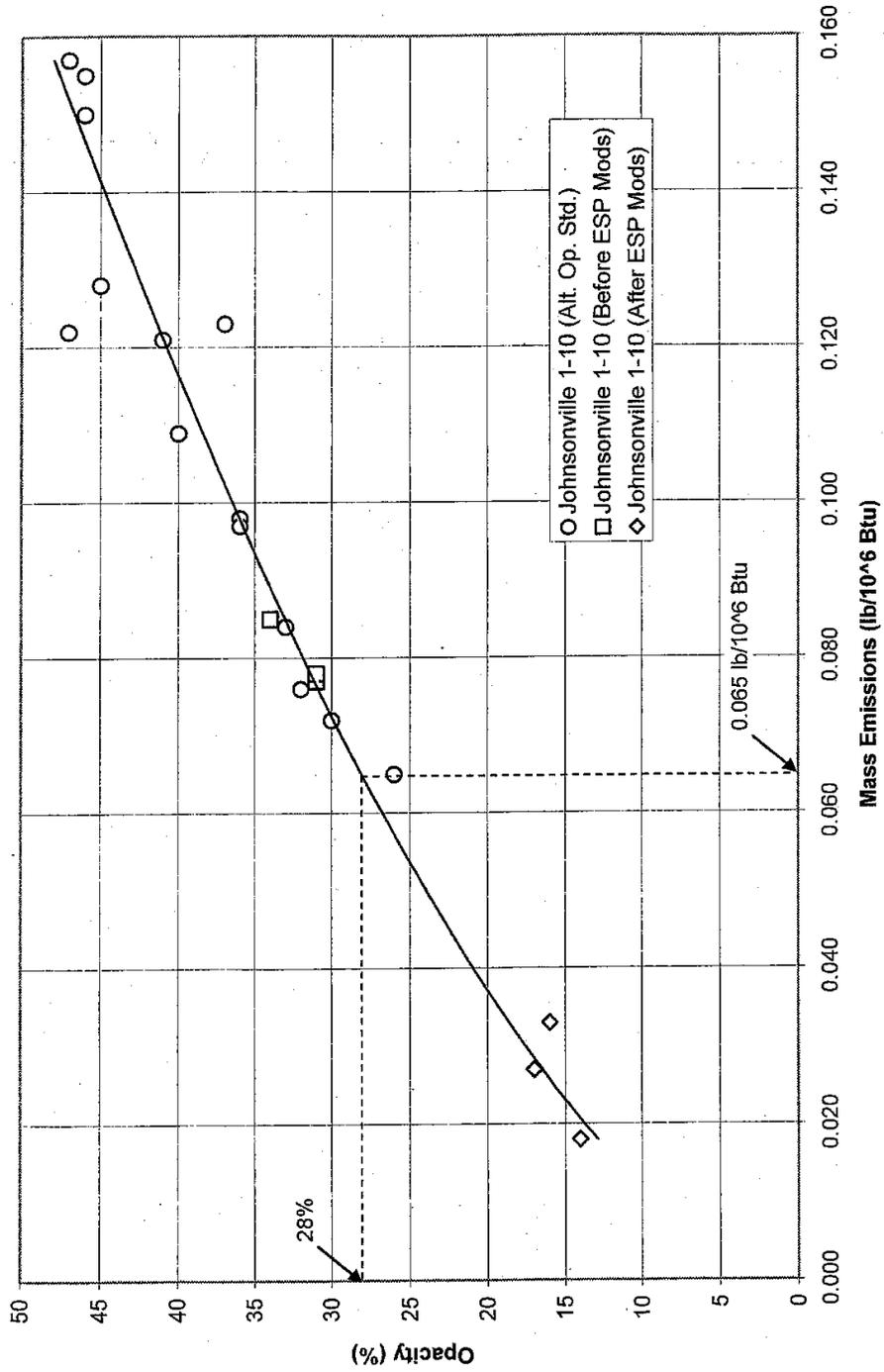
Test Condition	Stack Opacity (%)	Particulate Mass Emissions (lb/MMBtu)
Alternative Opacity Std.	26	0.065
Alternative Opacity Std.	30	0.072
Alternative Opacity Std.	32	0.076
Alternative Opacity Std.	33	0.084
Alternative Opacity Std.	36	0.097
Alternative Opacity Std.	36	0.098
Alternative Opacity Std.	37	0.123
Alternative Opacity Std.	40	0.109
Alternative Opacity Std.	41	0.121
Alternative Opacity Std.	45	0.128
Alternative Opacity Std.	46	0.150
Alternative Opacity Std.	46	0.155
Alternative Opacity Std.	47	0.122
Alternative Opacity Std.	47	0.157
Before ESP Mods	31	0.077
Before ESP Mods	31	0.078
Before ESP Mods	34	0.085
After ESP Mods	14	0.018
After ESP Mods	16	0.033
After ESP Mods	17	0.027

Table 1: Test Results

Stack Opacity/Mass Correlation

Figure 1 shows a graph of the stack opacity/mass relationship based on the test results. Based on a regression analysis, the predicted mass emissions rate at 28 percent opacity is 0.065 lb/MMBtu.

Figure 1
Mass vs. Opacity
 Tennessee Valley Authority



Monitoring Approach Validity

Under §64.3(d)(3)(ii), the existing opacity limit may be used as the appropriate indicator range provided it meets the general design criteria outlined in §64.3(a). The test data show that the opacity/mass correlation supports the proposed test and cap approach using the stack opacity as the primary indicator with a trigger level of 28 percent for both corrective action and excursions. The opacity/mass correlation predicted mass emissions that were below the mass limit of the unit at 28 percent opacity. This suggests that the selected indicator and indicator range meet the general design criteria outlined in §64.3(a) of the CAM Rule and will be sufficient to demonstrate a reasonable assurance of compliance with the particulate mass emissions limit.

ATTACHMENT 10

CAIR (Clean Air Interstate Rule) Permit

40 CFR 96

New Johnsonville Fossil Plant

**TENNESSEE AIR POLLUTION CONTROL BOARD
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243-1531**



CAIR PERMIT Issued Pursuant to Tennessee Air Quality Act

This permit fulfills the requirements of the federal regulations promulgated at 40 CFR Parts 60 and 96. This permit is issued in accordance with the applicable provisions of paragraphs 1200-3-14-.04, 1200-3-27-.10, 1200-3-27-.11, and 1200-3-37 of the Tennessee Air Pollution Control Regulations. The permittee has been granted permission to operate an air contaminant source in accordance with emissions limitations and monitoring requirements set forth herein.

Date Issued: June 30, 2008
Date Expires: See Condition 2

Permit Number: 861324

Issued To:
Tennessee Valley Authority
Johnsonville Fossil Plant

Installation Address:
Highway 70
New Johnsonville

Unit Description: Units #1, 2, 3, 4, 5, 6, 7, 8, 9, 10, JCT1, JCT2, JCT3, JCT4, JCT5, JCT6, JCT7, JCT8, JCT9, JCT10, JCT11, JCT12, JCT13, JCT14, JCT15, JCT16, JCT17, JCT18, JCT19, JCT20

Emission Source Reference Number: 43-0011
Renewal Application Due Date: See Condition 3

ORIS/Facility Code: 3406

Authorized Account Representative
Name: Preston D. Swafford
Phone: (423) 751-2601

Alternate Account Representative
Name: John J. McCormick
Phone: (423) 751-3013

Applicable Rules:
CAIR SO₂ Annual Trading Program (1200-3-14-.04)
CAIR NO_x Annual Trading Program (1200-3-27-.10)
CAIR NO_x Ozone Season Trading Program (1200-3-27-.11)

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

1. **General permit requirements.** For each CAIR source or CAIR opt-in source required to have a Title V operating permit, such permit shall include a CAIR permit administered by the permitting authority for the Title V operating permit or the federally enforceable permit as applicable. The CAIR portion of the Title V permit or other federally enforceable permit as applicable shall be administered in accordance with the permitting authority's Title V operating permit regulations promulgated under Rule 1200-3-9-.02(11) of the Tennessee Air Pollution Control Regulations (or equivalent regulations for delegated local programs), except as provided otherwise by applicable retired unit provisions or CAIR opt-in provisions. The Attachment to this permit contains the CAIR permit application, and the conditions listed in the application are enforceable conditions of this permit. This permit shall be incorporated in its entirety into the Title V Operating Permit as a complete and separable portion of that permit.

TAPCR 1200-3-14-.04, 1200-3-27-.10, and 1200-3-27-.11, 40 CFR §§96.120, 96.220, and 96.320

2. **CAIR permit term.** The term of the CAIR permit will be set by the permitting authority, as necessary to facilitate coordination of the renewal of the CAIR permit with issuance, revision, or renewal of the CAIR source's Title V operating permit or other federally enforceable permit as applicable. Prior to incorporation into the CAIR source's Title V Operating Permit, the CAIR permit shall be subject to the procedural requirements for public participation, EPA review, and affected State review as specified by applicable rules. The CAIR permit shall be incorporated into the Title V Operating Permit as follows:

1. If the term of the facility's existing Title V Operating Permit is three (3) or more years from the issue date of the CAIR permit, then the CAIR permit will be incorporated into the facility's existing Title V Operating Permit as specified in Rule 1200-3-9-.02(11)(f)6. (reopening for cause).

2. If the term of the facility's existing Title V Operating Permit is less than three (3) years from the issue date of the CAIR permit, then upon renewal of the facility's Title V Operating Permit, the CAIR permit will be incorporated into the Title V Operating Permit upon renewal of that permit, or the Title V Operating Permit may be reopened for cause at the permittee's request.

3. **Upon incorporation of this permit into a Title V Operating Permit, the expiration date of the CAIR permit shall be the same as the expiration date listed on the cover page of the Title V permit.**

TAPCR 1200-3-14-.04, 1200-3-27-.10, and 1200-3-27-.11, 40 CFR §§96.123, 96.223, and 96.323

3. **Duty to reapply.** For a CAIR source required to have a Title V operating permit, the CAIR designated representative shall submit a complete CAIR permit application for the source covering each CAIR unit at the source to renew the CAIR permit in accordance with the permitting authority's Title V operating permits regulations addressing permit renewal, except as provided by applicable CAIR opt-in provisions. **Upon incorporation of the CAIR permit into a Title V Operating Permit, the permittee shall submit a timely and complete application for renewal of the CAIR permit at least one hundred eighty (180) days, but not more than two hundred seventy (270) days prior to expiration of the Title V Operating Permit, in accordance with Rule 1200-3-9-.02(11)(d)1.(i)(III).**

Applicable provisions of 1200-3-14-.04, 1200-3-27-.10, 1200-3-27-.11, and applicable provisions of 40 CFR §§96.121, 96.221, and 96.321.

4. **CAIR permit revisions.** Except as provided otherwise by applicable CAIR regulations, the permitting authority will revise the CAIR permit, as necessary, in accordance with Rule 1200-3-9-.02(11) of the Tennessee Air Pollution Control Regulations.

TAPCR 1200-3-14-.04, 1200-3-27-.10, and 1200-3-27-.11, 40 CFR §§96.124, 96.224, and 96.324

5. **Local program rules.** For sources located within Shelby, Davidson, Knox, or Hamilton counties, the CAIR permit will be added to the Title V Operating Permit pursuant to the local permitting authority's Title V regulations.

CAIR Permit
Issue Date: June 30, 2008

Permit Number: 861324

Attachment: CAIR Permit Application

CAIR Permit Application

(for sources covered under a CAIR SIP)

For more information, refer to 40 CFR 96.121, 96.122, 96.221, 96.222, 96.321, and 96.322

This submission is: New Revised

STEP 1
Identify the source by plant name, State, and ORIS or facility code

Plant Name	Johnsonville	State	TN	ORIS/Facility Code	3406
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STEP 2
Enter the unit ID# for each CAIR unit and indicate to which CAIR programs each unit is subject (by placing an "X" in the column)

Unit ID#	NO _x Annual	SO ₂	NO _x Ozone Season
1	X	X	X
2	X	X	X
3	X	X	X
4	X	X	X
5	X	X	X
6	X	X	X
7	X	X	X
8	X	X	X
9	X	X	X
10	X	X	X
JCT1	X	X	X
JCT2	X	X	X
JCT3	X	X	X
JCT4	X	X	X
JCT5	X	X	X
JCT6	X	X	X
JCT7	X	X	X
JCT8	X	X	X
JCT9	X	X	X
JCT10	X	X	X
JCT11	X	X	X
JCT12	X	X	X
JCT13	X	X	X
JCT14	X	X	X
JCT15	X	X	X
JCT16	X	X	X
JCT17	X	X	X
JCT18	X	X	X
JCT19	X	X	X
JCT20	X	X	X

STEP 3
Read the standard requirements and the certification, enter the name of the CAIR designated representative, and sign and date

Standard Requirements

(a) Permit Requirements.

(1) The CAIR designated representative of each CAIR NO_x source, CAIR SO₂ source, and CAIR NO_x Ozone Season source (as applicable) required to have a title V operating permit and each CAIR NO_x unit, CAIR SO₂ unit, and CAIR NO_x Ozone Season unit (as applicable) required to have a title V operating permit at the source shall:

(i) Submit to the permitting authority a complete CAIR permit application under §96.122, §96.222, and §96.322 (as applicable) in accordance with the deadlines specified in §96.121, §96.221, and §96.321 (as applicable); and

(ii) Submit in a timely manner any supplemental information that the permitting authority determines is necessary in order to review a CAIR permit application and issue or deny a CAIR permit.

(2) The owners and operators of each CAIR NO_x source, CAIR SO₂ source, and CAIR NO_x Ozone Season source (as applicable) required to have a title V operating permit and each CAIR NO_x unit, CAIR SO₂ unit, and CAIR NO_x Ozone Season unit (as applicable) required to have a title V operating permit at the source shall have a CAIR permit issued by the permitting authority under subpart CC, CCC, and CCCC (as applicable) of 40 CFR part 96 for the source and operate the source and the unit in compliance with such CAIR permit.

(3) Except as provided in subpart II, III, and IIII (as applicable) of 40 CFR part 96, the owners and operators of a CAIR NO_x source, CAIR SO₂ source, and CAIR NO_x Ozone Season source (as applicable) that is not otherwise required to have a title V operating permit and each CAIR NO_x unit, CAIR SO₂ unit, and CAIR NO_x Ozone Season unit (as applicable) that is not otherwise required to have a title V operating permit are not required to submit a CAIR permit application, and to have a CAIR permit, under subpart CC, CCC, and CCCC (as applicable) of 40 CFR part 96 for such CAIR NO_x source, CAIR SO₂ source, and CAIR NO_x Ozone Season source (as applicable) and such CAIR NO_x unit, CAIR SO₂ unit, and CAIR NO_x Ozone Season unit (as applicable).

Plant Name (from Step 1) Johnsonville

STEP 3,
continued

(b) Monitoring, reporting, and recordkeeping requirements.

(1) The owners and operators, and the CAIR designated representative, of each CAIR NO_x source, CAIR SO₂ source, and CAIR NO_x Ozone Season source (as applicable) and each CAIR NO_x unit, CAIR SO₂ unit, and CAIR NO_x Ozone Season unit (as applicable) at the source shall comply with the monitoring, reporting, and recordkeeping requirements of subparts HH, HHH, and HHHH (as applicable) of 40 CFR part 96.

(2) The emissions measurements recorded and reported in accordance with subparts HH, HHH, and HHHH (as applicable) of 40 CFR part 96 shall be used to determine compliance by each CAIR NO_x source, CAIR SO₂ source, and CAIR NO_x Ozone Season source (as applicable) with the CAIR NO_x emissions limitation, CAIR SO₂ emissions limitation, and CAIR NO_x Ozone Season emissions limitation (as applicable) under paragraph (c) of §96.106, §96.206, and §96.306 (as applicable).

(c) Nitrogen oxides emissions requirements.

(1) As of the allowance transfer deadline for a control period, the owners and operators of each CAIR NO_x source and each CAIR NO_x unit at the source shall hold, in the source's compliance account, CAIR NO_x allowances available for compliance deductions for the control period under §96.154(a) in an amount not less than the tons of total nitrogen oxides emissions for the control period from all CAIR NO_x units at the source, as determined in accordance with subpart HH of 40 CFR part 96.

(2) A CAIR NO_x unit shall be subject to the requirements under paragraph (c)(1) of §96.106 for the control period starting on the later of January 1, 2009 or the deadline for meeting the unit's monitor certification requirements under §96.170(b)(1), (2), or (5) and for each control period thereafter.

(3) A CAIR NO_x allowance shall not be deducted, for compliance with the requirements under paragraph (c)(1) of §96.106, for a control period in a calendar year before the year for which the CAIR NO_x allowance was allocated.

(4) CAIR NO_x allowances shall be held in, deducted from, or transferred into or among CAIR NO_x Allowance Tracking System accounts in accordance with subparts FF, GG, and II of 40 CFR part 96.

(5) A CAIR NO_x allowance is a limited authorization to emit one ton of nitrogen oxides in accordance with the CAIR NO_x Annual Trading Program. No provision of the CAIR NO_x Annual Trading Program, the CAIR permit application, the CAIR permit, or an exemption under §96.105 and no provision of law shall be construed to limit the authority of the State or the United States to terminate or limit such authorization.

(6) A CAIR NO_x allowance does not constitute a property right.

(7) Upon recordation by the Administrator under subpart EE, FF, GG, or II of 40 CFR part 96, every allocation, transfer, or deduction of a CAIR NO_x allowance to or from a CAIR NO_x source's compliance account is incorporated automatically in any CAIR permit of the source that includes the CAIR NO_x unit.

Sulfur dioxide emission requirements.

(1) As of the allowance transfer deadline for a control period, the owners and operators of each CAIR SO₂ source and each CAIR SO₂ unit at the source shall hold, in the source's compliance account, a tonnage equivalent of CAIR SO₂ allowances available for compliance deductions for the control period under §96.254(a) and (b) not less than the tons of total sulfur dioxide emissions for the control period from all CAIR SO₂ units at the source, as determined in accordance with subpart HHH of 40 CFR part 96.

(2) A CAIR SO₂ unit shall be subject to the requirements under paragraph (c)(1) of §96.206 for the control period starting on the later of January 1, 2010 or the deadline for meeting the unit's monitor certification requirements under §96.270(b)(1), (2), or (5) and for each control period thereafter.

(3) A CAIR SO₂ allowance shall not be deducted, for compliance with the requirements under paragraph (c)(1) of §96.206, for a control period in a calendar year before the year for which the CAIR SO₂ allowance was allocated.

(4) CAIR SO₂ allowances shall be held in, deducted from, or transferred into or among CAIR SO₂ Allowance Tracking System accounts in accordance with subparts FFF, GGG, and III of 40 CFR part 96.

(5) A CAIR SO₂ allowance is a limited authorization to emit sulfur dioxide in accordance with the CAIR SO₂ Trading Program. No provision of the CAIR SO₂ Trading Program, the CAIR permit application, the CAIR permit, or an exemption under §96.205 and no provision of law shall be construed to limit the authority of the State or the United States to terminate or limit such authorization.

(6) A CAIR SO₂ allowance does not constitute a property right.

(7) Upon recordation by the Administrator under subpart FFF, GGG, or III of 40 CFR part 96, every allocation, transfer, or deduction of a CAIR SO₂ allowance to or from a CAIR SO₂ source's compliance account is incorporated automatically in any CAIR permit of the source that includes the CAIR SO₂ unit.

Nitrogen oxides ozone season emissions requirements.

(1) As of the allowance transfer deadline for a control period, the owners and operators of each CAIR NO_x Ozone Season source and each CAIR NO_x Ozone Season unit at the source shall hold, in the source's compliance account, CAIR NO_x Ozone Season allowances available for compliance deductions for the control period under §96.354(a) in an amount not less than the tons of total nitrogen oxides emissions for the control period from all CAIR NO_x Ozone Season units at the source, as determined in accordance with subpart HHHH of 40 CFR part 96.

(2) A CAIR NO_x Ozone Season unit shall be subject to the requirements under paragraph (c)(1) of §96.306 for the control period starting on the later of May 1, 2009 or the deadline for meeting the unit's monitor certification requirements under §96.370(b)(1), (2), (3) or (7) and for each control period thereafter.

(3) A CAIR NO_x Ozone Season allowance shall not be deducted, for compliance with the requirements under paragraph (c)(1) of §96.306, for a control period in a calendar year before the year for which the CAIR NO_x Ozone Season allowance was allocated.

(4) CAIR NO_x Ozone Season allowances shall be held in, deducted from, or transferred into or among CAIR NO_x Ozone Season Allowance Tracking System accounts in accordance with subparts FFFF, GGGG, and IIII of 40 CFR part 96.

(5) A CAIR NO_x allowance is a limited authorization to emit one ton of nitrogen oxides in accordance with the CAIR NO_x Ozone Season Trading Program. No provision of the CAIR NO_x Ozone Season Trading Program, the CAIR permit application, the CAIR permit, or an exemption under §96.305 and no provision of law shall be construed to limit the authority of the State or the United States to terminate or limit such authorization.

(6) A CAIR NO_x allowance does not constitute a property right.

(7) Upon recordation by the Administrator under subpart EEEE, FFFF, GGGG, or IIII of 40 CFR part 96, every allocation, transfer, or deduction of a CAIR NO_x Ozone Season allowance to or from a CAIR NO_x Ozone Season source's compliance account is incorporated automatically in any CAIR permit of the source.

**STEP 3,
continued****(d) Excess emissions requirements.**

If a CAIR NO_x source emits nitrogen oxides during any control period in excess of the CAIR NO_x emissions limitation, then:

(1) The owners and operators of the source and each CAIR NO_x unit at the source shall surrender the CAIR NO_x allowances required for deduction under §96.154(d)(1) and pay any fine, penalty, or assessment or comply with any other remedy imposed, for the same violations, under the Clean Air Act or applicable State law; and

(2) Each ton of such excess emissions and each day of such control period shall constitute a separate violation of this subpart, the Clean Air Act, and applicable State law.

If a CAIR SO₂ source emits sulfur dioxide during any control period in excess of the CAIR SO₂ emissions limitation, then:

(1) The owners and operators of the source and each CAIR SO₂ unit at the source shall surrender the CAIR SO₂ allowances required for deduction under §96.254(d)(1) and pay any fine, penalty, or assessment or comply with any other remedy imposed, for the same violations, under the Clean Air Act or applicable State law; and

(2) Each ton of such excess emissions and each day of such control period shall constitute a separate violation of this subpart, the Clean Air Act, and applicable State law.

If a CAIR NO_x Ozone Season source emits nitrogen oxides during any control period in excess of the CAIR NO_x Ozone Season emissions limitation, then:

(1) The owners and operators of the source and each CAIR NO_x Ozone Season unit at the source shall surrender the CAIR NO_x Ozone Season allowances required for deduction under §96.354(d)(1) and pay any fine, penalty, or assessment or comply with any other remedy imposed, for the same violations, under the Clean Air Act or applicable State law; and

(2) Each ton of such excess emissions and each day of such control period shall constitute a separate violation of this subpart, the Clean Air Act, and applicable State law.

(e) Recordkeeping and Reporting Requirements.

(1) Unless otherwise provided, the owners and operators of the CAIR NO_x source, CAIR SO₂ source, and CAIR NO_x Ozone Season source (as applicable) and each CAIR NO_x unit, CAIR SO₂ unit, and CAIR NO_x Ozone Season unit (as applicable) at the source shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time before the end of 5 years, in writing by the permitting authority or the Administrator.

(i) The certificate of representation under §96.113, §96.213, and §96.313 (as applicable) for the CAIR designated representative for the source and each CAIR NO_x unit, CAIR SO₂ unit, and CAIR NO_x Ozone Season unit (as applicable) at the source and all documents that demonstrate the truth of the statements in the certificate of representation; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission of a new certificate of representation under §96.113, §96.213, and §96.313 (as applicable) changing the CAIR designated representative.

(ii) All emissions monitoring information, in accordance with subparts HH, HHH, and HHHH (as applicable) of 40 CFR part 96, provided that to the extent that subparts HH, HHH, and HHHH (as applicable) of 40 CFR part 96 provides for a 3-year period for recordkeeping, the 3-year period shall apply.

(iii) Copies of all reports, compliance certifications, and other submissions and all records made or required under the CAIR NO_x Annual Trading Program, CAIR SO₂ Trading Program, and CAIR NO_x Ozone Season Trading Program (as applicable).

(iv) Copies of all documents used to complete a CAIR permit application and any other submission under the CAIR NO_x Annual Trading Program, CAIR SO₂ Trading Program, and CAIR NO_x Ozone Season Trading Program (as applicable) or to demonstrate compliance with the requirements of the CAIR NO_x Annual Trading Program, CAIR SO₂ Trading Program, and CAIR NO_x Ozone Season Trading Program (as applicable).

(2) The CAIR designated representative of a CAIR NO_x source, CAIR SO₂ source, and CAIR NO_x Ozone Season source (as applicable) and each CAIR NO_x unit, CAIR SO₂ unit, and CAIR NO_x Ozone Season unit (as applicable) at the source shall submit the reports required under the CAIR NO_x Annual Trading Program, CAIR SO₂ Trading Program, and CAIR NO_x Ozone Season Trading Program (as applicable) including those under subparts HH, HHH, and HHHH (as applicable) of 40 CFR part 96.

(f) Liability.

(1) Each CAIR NO_x source, CAIR SO₂ source, and CAIR NO_x Ozone Season source (as applicable) and each NO_x unit, CAIR SO₂ unit, and CAIR NO_x Ozone Season unit (as applicable) shall meet the requirements of the CAIR NO_x Annual Trading Program, CAIR SO₂ Trading Program, and CAIR NO_x Ozone Season Trading Program (as applicable).

(2) Any provision of the CAIR NO_x Annual Trading Program, CAIR SO₂ Trading Program, and CAIR NO_x Ozone Season Trading Program (as applicable) that applies to a CAIR NO_x source, CAIR SO₂ source, and CAIR NO_x Ozone Season source (as applicable) or the CAIR designated representative of a CAIR NO_x source, CAIR SO₂ source, and CAIR NO_x Ozone Season source (as applicable) shall also apply to the owners and operators of such source and of the CAIR NO_x units, CAIR SO₂ units, and CAIR NO_x Ozone Season units (as applicable) at the source.

(3) Any provision of the CAIR NO_x Annual Trading Program, CAIR SO₂ Trading Program, and CAIR NO_x Ozone Season Trading Program (as applicable) that applies to a CAIR NO_x unit, CAIR SO₂ unit, and CAIR NO_x Ozone Season unit (as applicable) or the CAIR designated representative of a CAIR NO_x unit, CAIR SO₂ unit, and CAIR NO_x Ozone Season unit (as applicable) shall also apply to the owners and operators of such unit.

Plant Name (from Step 1) **Johnsonville**

**STEP 3,
continued**

(g) Effect on Other Authorities.

No provision of the CAIR NO_x Annual Trading Program, CAIR SO₂ Trading Program, and CAIR NO_x Ozone Season Trading Program (as applicable), a CAIR permit application, a CAIR permit, or an exemption under § 96.105, §96.205, and §96.305 (as applicable) shall be construed as exempting or excluding the owners and operators, and the CAIR designated representative, of a CAIR NO_x source, CAIR SO₂ source, and CAIR NO_x Ozone Season source (as applicable) or CAIR NO_x unit, CAIR SO₂ unit, and CAIR NO_x Ozone Season unit (as applicable) from compliance with any other provision of the applicable, approved State implementation plan, a federally enforceable permit, or the Clean Air Act.

Certification

I am authorized to make this submission on behalf of the owners and operators of the source or units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

Name Edwin E. Freeman	
Signature 	Date 6-20-07

TITLE V PERMIT STATEMENT

Facility Name:	Tennessee Valley Authority - Johnsonville Fossil Plant
City:	New Johnsonville
County:	Humphreys

Date Application Received:	August 24, 2007 – Acid Rain Permit Application Received: December 17, 2009
Date Application Deemed Complete:	August 27, 2007

Emission Source Reference No. : 43-0011	
Permit No.	561210 Title V
	863259 Acid Rain

12/5/2012

INTRODUCTION

This narrative is being provided to assist the reader in understanding the content of the attached Title V operating permit, and is written pursuant to Tennessee Air Pollution Control Rule 1200-03-09-.02(11)(f)1.(v). The primary purpose of the Title V operating permit is to consolidate and identify existing state and federal air requirements applicable to Tennessee Valley Authority - Johnsonville Fossil Plant and to provide practical methods for determining compliance with these requirements. The following narrative is designed to accompany the Title V Operating Permit. It initially describes the facility receiving the permit, then the applicable requirements and their significance, and finally the compliance status with those applicable requirements. This narrative is intended only as an adjunct for the reviewer and has no legal standing. Any revisions made to the permit in response to comments received during the public participation process will be described in an addendum to this narrative.

Acronyms

PSD - Prevention of Significant Deterioration
NESHAP - National Emission Standards for Hazardous Air Pollutants
NSPS - New Source Performance Standards
MACT - Maximum Achievable Control Technology
NSR - New Source Review

I. Identification Information

A. Source Description

Listing and description of emission sources:

- 01-10:** (10) Coal Fired Boilers: Steam and electricity generation
- 11-26:** (16) Combustion Turbines: Electric generating plant; no. 2 fuel oil or natural gas fired
- 28:** (2) Auxiliary Heating Boilers: facility space heating; no. 2 fuel oil fired
- 29:** Coal Handling Facility: coal unloading from barge or railcar, coal crushing and conveying, and coal stockpiling and reclaiming operations
- 30:** Ash Handling System: ash stacking and disposal
- 32:** (4) Combustion Turbines: Electric generating plant; natural gas / fuel oil fired
- 33:** (2) Gas Fired Heaters: heating of natural gas fuel to CT units of fuel burning installation no.'s 43-0011-1-16
- 34:** Three Emergency Fire Pump Engines # 1, 2, and 3

B. Facility Classification

1. Non-Attainment Area Location

Area is designated as an attainment area for all criteria pollutants.

2. Company is located in a Class II area. (this means that the facility is not located within a national park or national wilderness area; see 40 CFR 52.21(e) for complete definition).

C. Regulatory Status

1. PSD/NSR

This facility is an existing major source under PSD.

2. Title V Major Source Status by Pollutant

Pollutant	Is the pollutant emitted?	If emitted, what is the facility's status?
		Major Source Status
PM	yes	yes
PM₁₀	yes	yes
SO₂	yes	yes
VOC	yes	yes
NO_x	yes	yes
CO	yes	yes
Individual HAP	yes	yes
Total HAPs	yes	yes
GHG	yes	yes

3. MACT Standards

This facility is a major source for HAPs. This fuel-burning installation is subject to the provisions of MACT rule 40 CFR 63 Subpart UUUUU—National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units.

Under the provisions of Subpart YYYY—National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines, there are no requirements that apply to existing sources (FR March 5, 2004, p. 10525)

This facility is subject to the Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

4. Program Applicability

Are the following programs applicable to the facility?

PSD: **Yes**

NESHAP: **Yes** 40 CFR 63 Subpart UUUUU—National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units.

40 CFR 63, Subpart ZZZZ —National Emissions Standards for Hazardous Air Pollutants
for Stationary Reciprocating Internal Combustion Engines

NSPS: **Yes** 40 CFR Part 60, Subpart GG - Standards of Performance for Stationary Gas Turbines- applies to
43-0011-32 Combustion Turbine Electric Generating Plant

40 CFR 60 Subpart DA-- Electric Utility Steam Generating Units applies only to units for which
construction is commenced after September 18, 1978, therefore this facility is not affected

II. Compliance Information

A. Compliance Status

Is the facility currently in compliance with all applicable requirements? **yes**

Are there any applicable requirements that will become effective during the permit term? **Yes-see below**

The source is placed on notice that the coal fired boilers at this facility are scheduled for regulation under the provisions of 40 CFR 63 Subpart UUUUU -- National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-fired Electric Utility Steam Generating Units. This permit will be modified to include any applicable provisions of Subpart UUUUU.

III. Other Requirements

A. Emissions Trading

The facility is not involved in an emission trading program, except for the emissions trading allowed by the Title IV acid rain program.

B. Acid Rain Requirements

This facility is subject to the requirements in Title IV of the Clean Air Act. A new acid rain permit (863259) is included as an attachment with this permit.

C. Prevention of Accidental Releases

Not applicable to the facility.

IV. Public Participation Procedures

Notification of this draft permit was mailed to the following environmental agencies:

1. EPA
2. Kentucky Department for Environmental Protection
3. Nashville Davidson County Metropolitan Health Department

V. General Review of Plantwide Requirements

Ambient Sulfur Dioxide Monitoring Cessation

Condition E10-2. of the previous Title V Permit 546342, specified ambient air monitoring for SO₂. This was required by Paragraph 1200-03-.14-.01 (6) of the Tennessee Air pollution Control Regulations. However, this rule also states that the Technical Secretary may grant permission to terminate ambient air quality monitoring provided certain conditions are met. The letter dated February 1, 2008 from Barry R. Stephens, P.E., Technical Secretary, Tennessee Air pollution Control Board to Gordon Park, Manager of Environmental Compliance, Tennessee Valley Authority (TVA), grants permission to TVA to discontinue ambient sulfur dioxide monitoring at the Johnsonville power plant. Condition E2-4 of Title V permit 561210 addresses this matter.

Consent Decree

This facility is subject to an enforceable Consent Decree with the Tennessee Valley Authority (State of Alabama et. al. v. TVA, Civil Action No. 3:11-cv-00170, filed April 14, 2011, approved June 30, 2011), which imposes certain requirements at this facility. A listing of these requirements is found at Condition **E2-4** of this permit.

Transport Rule (TR)

This rule is no longer in effect. This facility was initially considered to be subject to the applicable provisions of the "Transport Rule" as found at 40 CFR 97 Subparts AAAAA (TR NO_x Annual Trading Program), BBBBB (TR NO_x Ozone Season Trading Program), and CCCCC (TR SO₂ Group 1 Trading Program). Transport Rule (TR) Requirements - TAPCR 1200-03-09-.03(8) and 40 CFR §52.2240 and §52.2241, 40 CFR §§97.401 – 97.435, §§97.501 – 97.535, §§97.601 – 97.635 - These provisions were specified at condition E3-18 with the draft permit. However, this rule has since been vacated and is no longer in effect. The CAIR rule is now specified at condition E3-18.

NO_x Budget Permit

The NO_x Budget Permit for this facility, included as Attachment 9 of Title V Permit 546342 is not included with this permit because the formerly applicable requirements of 40 CFR 96 are no longer in effect.

CAIR Permit

The Clean Air Interstate Rule (CAIR) requirements are specified at condition E3-18 and also at Attachment 10 of the permit.

Compliance Assurance Monitoring (CAM)

The coal-fired boilers at this facility are subject to the CAM provisions of 40 CFR 64 for particulate matter emissions.

VI. Permit Modifications occurring since issuance of 546342 on February 24, 2003

Reopening for Cause: December 14, 2004

Ten (10) Coal Fired Boilers for Steam & Electricity Generation (43-0011-01-10)

The opacity compliance determination method of Condition E3-6 was changed from “opacity monitoring system” to “certified reader using Method 9.”

Significant Modification #1: July 12, 2006

Combustion Turbine Electric Generating Plant: Four (4) simple cycle turbines; CT Units 17-20; (43-0011-32)

Condition E8-10 was revised to exclude periods of fuel switching (from No. 2 fuel oil to Natural Gas or the reverse process) from the NOx emission concentration 30-day rolling period. The overall NOx emission limit (556.0 tons per calendar year) is not affected by this change. Construction Permit 959329 was issued on July 12, 2006, in conjunction with Significant Modification #1.

CAIR Permit 861324: June 30, 2008

The Clean Air Interstate Rule (CAIR) emissions trading program was discontinued by EPA; however, it was subsequently reinstated when the “Transport Rule” 40 CFR 97 became invalid by court ruling.

VII. Plantwide New Johnsonville Allowable Emission Limits

Allowable tons per year (unless no allowable limits are specified as for VOC, CO, and Greenhouse gas equivalent-GHG, in which case the potential emissions at full capacity operation are provided)

Pollutant (s)	Particulate	SO2	CO	VOC	NOx	GHG CO ₂ e
Total	12,437	200,854	1665	155	27,560	16,380,818

VIII. Comments and Revisions to Johnsonville Draft Permit subsequent to Public Notice

The notice was published in the Humphreys County “*The News-Democrat*” on March 2, 2012, and the 30-day public comment period ended on April 2, 2012. There were no comments from the public.

The draft permit, public notice, and statement of basis were sent to EPA Region 4 on September 21, 2012. There were no comments from EPA .

As noted, there were no public comments, however, at the request of TVA, the Johnsonville Title V permit is being modified so that it will match the format of the Kingston permit (and the other Title V permits for the system). The opacity statement found at Condition D1 is being modified (see comparison). The semiannual reporting requirement is modified to include reports on two new conditions, E3-4(b) and E9-6; see highlighted text for the new E2(b) condition below.

Also, the “Transport Rule” (CSAPR 40 CFR 97) requirements were removed due to the invalidation of this rule and the “CAIR” requirements, which then became effective, were subsequently included.

Modification of Condition D1

This adds a statement concerning issuance of a certificate of validation for opacity.

“The permittee will be issued a certificate of validation upon satisfactory completion of the requirements of TAPCR 1200-03-05-.05. The certificate will be effective upon issuance.”

TAPCR 1200-03-05-.01(1), TAPCR 1200-03-05-.03(6), TAPCR 1200-03-05-.02(1) and TAPCR 1200-03-05-.05.

This condition is being modified only to acknowledge the applicability of a Certificate of Validation as described at 1200-03-05-.05 of the Tennessee Air Pollution Control Regulations. This does not make any changes in permit requirements.

Modification of Condition E2(b)

Condition E2(b) is being modified to resemble the equivalent condition found in the TVA Kingston permit and reflect the new requirements found at E3-4(b), E10-15 and E10-6. Condition E3-4(b) is being modified to include the COMS (continuous opacity monitoring system) as part of the compliance mechanism. This does not relax any standards, but instead further incorporates the opacity monitor into the compliance determination. The opacity requirement for fugitive emissions at condition E2-2(b) was already present as a condition, but had not been included in the semiannual reporting provision, and is added now. Conditions E10-6 (opacity limit) and E10-15 (hours recordkeeping) are being added to incorporate reporting for the existing but previously “insignificant” new diesel engine fire pumps. These units are being added to the permit because they will be covered by a Federal MACT standard (40 CFR 60 Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines) in May of 2013.

- (b) **Semiannual reports.** Reporting periods shall be **January 1 to June 30** and **July 1 to December 31** of each calendar year. The Semiannual reports shall be submitted within 60 days after the end of each reporting period. Semiannual reports of this facility (43-0011) shall include:
- (1) Any recordkeeping and monitoring required by Conditions **E3-4(b), E3-13, E4-5, E4-7, E4-8, E6-2(a), E8-4, E8-5, E8-6, E8-9, E8-10, E8-12, E8-13 and E10-15** of this permit. However, a summary report of this data is acceptable provided there is sufficient information to enable the Technical Secretary to evaluate compliance.
 - (2) The visible emission evaluation readings from Conditions **E2-2(b), E3-6, E4-4, E5-4, E6-2(b), E7-1(b), E8-11, E9-3, and E10-6** of this permit if required. However, a summary report of this data is acceptable provided there is sufficient information to enable the Technical Secretary to evaluate compliance.

The text for the initial condition E3-4 which applies to the Coal Fired Boilers that went to public notice is given below.

43-0011-01-10

Source Description

Ten (10) Coal Fired Boilers for Steam & Electricity Generation:

15,688 Million Btu/hour nominal heat input;
1486 Megawatts (nameplate capacity);
Electrostatic Precipitator Control;
TVA designated emission unit 1

E3-4. The particulate emissions from this fuel burning installation shall not exceed **0.100** pounds per million Btu of heat input as specified in Paragraph 1200-03-06-.02(1) of the Tennessee Air Pollution Control Regulations.

Compliance Method: Monitoring of this fuel burning source for compliance with the applicable particulate emissions limitations shall be conducted by stack testing in accordance with 40 CFR 60, Appendix A, Method 17. This testing shall be performed every other year and a particulate source test report shall be filed with the Technical Secretary within 60 days after completion of the testing. The source test shall be conducted in accordance with specifications for source sampling given in Chapter 1200-03-12 of the Tennessee Air Pollution Control Regulations. The continuous in-stack opacity monitor(s) shall be fully operational prior to and during this compliance testing. The opacity data generated during this compliance testing shall be incorporated into the test report.

Ten (10) days prior to conducting the source test, the permittee shall provide notice of such test to the Technical Secretary to afford him the opportunity to have an observer present.

Compliance with condition **E3-6** of the permit shall be used as an indicator to determine whether compliance with this condition should be confirmed with a Method 17 test.

The text for the revised condition E3-4 that contains additional requirements concerning monitoring (at the request of TVA) is given below.

E3-4. The particulate emissions from this fuel burning installation shall not exceed **0.100** pounds per million Btu of heat input as specified in Paragraph 1200-03-06-.02(1) of the Tennessee Air Pollution Control Regulations.

Compliance Method: Compliance with this condition shall be assured as follows:

(a) Monitoring of this fuel burning source for compliance with the applicable particulate emissions limitations shall be conducted by stack testing in accordance with 40 CFR 60, Appendix A, Method 17. This testing shall be performed every other year and a particulate source test report shall be filed with the Technical Secretary within 60 days after completion of the testing. The source test shall be conducted in accordance with specifications for source sampling given in Chapter 1200-03-12 of the Tennessee Air Pollution Control Regulations. The continuous in-stack opacity monitor(s) shall be fully operational prior to and during this compliance testing. The opacity data generated during this compliance testing shall be incorporated into the test report.

Ten (10) days prior to conducting the source test, the permittee shall provide notice of such test to the Technical Secretary to afford him the opportunity to have an observer present.

Compliance with condition **E3-6** of the permit shall be used as an indicator to determine whether compliance with this condition should be confirmed with a Method 17 test.

(b) The permittee shall operate the continuous opacity monitoring system (COMS) to provide an indication of good operational and maintenance practices. The COMS shall comply with **Conditions E3-7, E3-8, E3-11, E3-14, and E3-15** of this permit and with the applicable provisions of 40 CFR 64, as indicated in the attached CAM plan (*Attachment 9*).

- (c) The Technical Secretary may require additional performance testing for exceedances of the *de minimis* criteria specified in TAPCR 1200-03-20-.06. The permittee shall conduct performance tests upon written notification of the Technical Secretary, within the time period specified in the written notification.

Note- for reference purposes, below is a description of the parameters as affected by the conditions in E3-4(b)

Referenced Permit Condition	Brief Description of Condition Text
E3-7	Due allowance to be made for excess visible emissions caused by routine startup or shutdown.
E3-8	Minimum Operational Availability of 95% per calendar quarter for Opacity Monitoring System.
E3-11	Quality Assurance for Opacity Monitoring System shall be conducted on a semiannual basis.
E3-14	Average values for Opacity may be obtained by integration over the six-minute averaging period.
E3-15	Provide magnitude of opacity violations (E3-15).

Additionally, note that E3-4(c) is a new condition.

SO2 Continuous Monitoring Requirement

For condition E3-5, the text was revised for the continuous SO2 monitoring system to reflect a change from 90% required minimum operational availability to a 95% required minimum operational availability.

40 CFR 63 Subpart UUUUU Requirement for Coal –fired Boilers

In recognition that MACT rule for coal-fired boilers (Subpart UUUUU) was now effective, condition E3-19 was added:

E3-19. This fuel-burning installation is subject to the provisions of 40 CFR 63 Subpart UUUUU—National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units.

Three Emergency Fire Pump Engines

Three Emergency Fire Pump Engines # 1, 2, and 3 are being permitted as ref. no. 43-0011-34. These were considered as “insignificant activities” previously but are now being added due to the applicability of 40 CFR 63 Subpart ZZZZ (Reciprocating Internal Combustion Engines) in May of 2013. These units were not included in the draft permit that went out for public notice. The description of this source follows.

43-0011-34	Source Description	Three Emergency Fire Pump Engines # 1, 2, and 3 Cummins Model N-855P250 diesel engines rated at 220 hp each
		TVA designated stacks 33, 34, and 35

Note- All permit conditions under this section are new, from E1-1 through E1-10 (see draft permit)

End of Comments

Changes to Title V Operating Permit 561210 Since Renewal Issuance

Permit Modification	Issue Date	Condition or Section	Modification
Minor Modification #1	May 12, 2016	General Information:	This modification adds emissions source 43-0011-36, Emergency Telecom Diesel Engine (90 hp).
		B5, E2-1(c)	Sub-condition E2-1(c)(3) was removed, and the following language was combined with E2-1(c)(2): (2) The identification of the method(s) or other means used by the owner or operator for determining the compliance status with each term and condition during the certification period; such methods and other means shall include, at a minimum, the methods and means required by this permit. If necessary, the owner or operator also shall identify any other material information that must be included in the certification to comply with section 113(c)(2) of the Federal Act, which prohibits knowingly making a false certification or omitting material information. Similarly, Condition B5 was changed to remove sub-condition (c) and combine the text with sub-condition (b).
		E2-7	Addition of Condition E2-7 Identification of Responsible Official, Technical Contact, and Billing Contact. Updated contacts.
		E11-1 through E11-16	Added Conditions E11-1 through E11-16 for emissions source 43-0011-36, Emergency Telecom Diesel Engine (90 hp).
		B10	Removed. Underlying requirement has been repealed.
		E2	E11-15 added to recordkeeping and reporting requirements of semiannual reports in Condition E2(b)(1)
		Notifications	Initial notification to EPA and affected States: 8/11/2015 Draft permit sent to EPA: 4/18/2016 Additional information requested by EPA: EPA comments and responses listed below: <i>Comment 1: Conditions E11-2 through E11-5 cite the compliance method as the emission factor. This in itself is important to have in the permit, but is not a complete compliance method. In order for the permittee to comply perhaps they can either monitor, or more likely, keep a copy of the compliance certificate for the engine. However, in the case where the AP-42 emission factor was used, there probably isn't a direct method of compliance without testing the source.</i> TDEC Response: Compliance method added to these conditions, specifically referring to engine certifications. <i>Comment 2: Condition E11-7 does not appear to have a citation associated with it.</i> TDEC Response: State regulation TAPCR 1200-03-09-.01(1)(d) has been added as a citation for this condition.
Significant Modification #2	DRAFT	General	Incorporation of Consent Decree requirements, Utility MACT/MATS requirements
		E1	Updated payment address
		E2	Updated APC Central Office contact addresses
		E2-4	Removed section (a) of condition E2-4, which required the permittee to submit application forms for this modification.
		E2-8	Added Utility MACT/MATS requirements under 40 CFR 63 Subpart UUUUU
		E3-4	Update to Compliance Method for PM, incorporating Consent Decree requirements
		E3-18	Replaced CAIR condition with Transport Rule (TR) Requirements, including Consent Decree requirements with regard to the NO _x annual, NO _x Ozone Season, and SO ₂ Group 1 trading programs.
		E3-20	Added Continuous Operation of NO _x and SO ₂ Control Equipment condition
		E3-21	Added Compliance with System-Wide Annual NO _x and SO ₂ Tonnage Limits condition
		Attachment 1	Updated Opacity Matrix and corresponding references to the amended version dated September 11, 2013