Puite, Tammie (EGLE)

From: Jason M. Prentice <JASON.PRENTICE@cmsenergy.com>
Sent: Monday, October 7, 2019 3:45 PM
To: EGLE-ROP
Cc: HENRY M. HOFFMAN; Todd A. Guenthardt; KATHRYN M. CUNNINGHAM; Owens, Caryn (EGLE)
Subject: N1685 – ROP Renewal Application (TES Filer City Station)
Attachments: TES_Filer_City_Staiton_(SRN_N1685)_ROP_Renewal_Application_FINAL.pdf; N1685 _MarkUp_Renewal.docx

Good Afternoon EGLE,

Please find the attached electronic version of the ROP Renewal Application for TES Filer City Station, SRN N1685. Existing permit no. MI-ROP-N1685-2015b expires on April 27, 2020, and the ROP renewal application is therefore due by no later than October 27, 2019. This application is being submitted both electronically and in hard copy, and it is our understanding that the administrative completeness determination will be completed within 15 days of when the hard copy materials are received (which should be tomorrow, October 8, 2019).

The attached PDF file (**TES_Filer_City_Staiton_(SRN_N1685)_ROP_Renewal_Application_FINAL.pdf**) contains all of the materials associated with the ROP Renewal Application, including the following (the page number references are based on the page(s) within the overall 160 page PDF file, not the page numbers at the bottom of each page):

- Pages 1-2: Cover letter for the submittal;
- Pages 3-13: ROP Renewal Application Forms, Parts A-H;
- Pages 14-16: AI-001 forms supporting Parts C and H of the ROP application forms;
- Pages 17-84: Mark-up of existing ROP No. MI-ROP-N1685-2015b;
- Page 85: EQP-5736 Form for Plans Referenced in the ROP;
- Pages 86-160: Plans referenced in the current ROP, including:
    - Pages 86-88: Fugitive Dust Control Plan;
    - Pages 89-149: Maintenance Management Plan;
    - Pages 150-155: C/D Waste Wood Monitoring Plan;
    - Pages 156-160: Compliance Assurance Monitoring Plan for EUBOILER01 and EUBOILER02.

The last bullet point above reflects "Other Plans" documents as referenced in Part B of the ROP Renewal Application Form. If individual files pertaining to any of the preceding materials are desired, please let me know and they will be provided as quickly as possible (note that the PDF file is not protected, and EGLE should be able to extract pages from the overall PDF file as desired).

Lastly, a Word version of the ROP mark-up (**N1685_MarkUp_Renewal.docx**) has also been provided consistent with the EGLE's ROP Renewal Application Instructions guidance document. Please contact me if there are any questions or concerns regarding any of the materials which are being provided, including questions on proposed additions, deletions and changes to the current ROP language.

Thanks,

Jason M Prentice
Environmental Services - Air Quality I *Consumers Energy*
P22-334 I *1945 W Parnall* | *Jackson, MI 49201*

Ph: 517-788-1467 **|***Fax: 517-768-3467* **|** *Email:* jason.prentice@cmsenergy.com

Consumers Energy
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A CMS Energy Company

Environmental Services

October 7, 2019

Mr. Shane Nixon
Michigan Department of Environment, Great Lakes, and Energy (EGLE)
Cadillac District Office – Air Quality Division
120 W. Chapin Street
Cadillac, MI 49601-2158

SUBJECT: ROP Renewal Application – TES Filer City
SRN: N1685

Dear Mr. Nixon:

Enclosed is the renewal application for the TES Filer City Station (TES) Renewable Operating Permit MI-ROP-N1685-2015b, which expires on April 27th, 2020. Thus, the administratively complete ROP renewal application is due no later than October 27th, 2019. The submission is also being made in an electronic format as specified by EGLE, and the materials are being submitted more than 15 days in advance ROP renewal application due date to allow for EGLE review and issuance an application shield if deemed administratively complete. The contents of this application include:

- Renewal Application
- ROP Mark-up Document
- Required Plans with EQP form certification for submission:
  - Fugitive Dust Plan
  - Maintenance Management Plan
  - Construction Demolition Wood Waste Management Plan
  - Compliance Assurance Monitoring (CAM) Plan

The proposed changes to the ROP include the incorporation of the Mercury and Air Toxics Standard (MATS) requirements. The application also identifies some exempt ancillary equipment, but such equipment has no applicable requirements. The aforementioned plans have also been reviewed and updated in conjunction with the ROP renewal application.

Please note in Section C.8, item 2 of the ROP Renewal Application Form, we have marked "yes" to utilizing Presumptively Acceptable Monitoring for CAM, if eligible. The boiler units have particulate matter emission limits under the MATS Rule, as well as continuous monitoring and reporting requirements for any malfunctions of the PM control equipment. TES proposes that the MATS monitoring should qualify as presumptively acceptable monitoring for CAM for the baghouse control equipment for all CAM subject PM limits. We are open to discussion on this proposal. The included CAM plan has not yet been updated to support this proposal (i.e., still relies on the use of opacity data).

Please contact me at (517) 788-1467 or Mr. Todd Guenthardt of TES Filer City Station at (231) 723-6573, Extension 104, if you have any questions or require further information concerning the contents of this ROP renewal application.

Sincerely,

Jason M. Prentice

Jason M. Prentice
Environmental Planner
Consumers Energy Company

cc: Caryn Owens, EGLE-AQD (Electronic Only)
Todd Guenthardt, TES Filer City Station (Electronic Only)

EGLE

RENEWABLE OPERATING PERMIT
RENEWAL APPLICATION FORM

This information is required by Article II, Chapter 1, Part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment. Refer to instructions for additional information to complete the Renewable Operating Permit Renewal Application Form.

GENERAL INSTRUCTIONS

This application form should be submitted as part of an administratively complete application package for renewal of a Renewable Operating Permit (ROP). This application form consists of nine parts. Parts A – H must be completed for all applications and must also be completed for each section of a sectioned ROP. Answer all questions in all parts of the form unless directed otherwise. Detailed instructions for this application form can be found at http://michigan.gov/air (select the Permits Tab, "Renewable Operating Permits (ROP)/Title V", then "ROP Forms & Templates").

PART A: GENERAL INFORMATION

Enter information about the source, owner, contact person and the responsible official.

SOURCE INFORMATION

SRN	SIC Code	NAICS Code	Existing ROP Number	Section Number (if applicable)
N1685	4911	221112	MI-ROP-N1685-2015b	

Source Name
TES Filer City Station

Street Address
700 Mee Street

City	State	ZIP Code	County
Filer City	MI	49634	Manistee

Section/Town/Range (if address not available)

Source Description
Electric Power Generation consisting of two spreader stoker boiler units, each nominally rated at 384 mmBtu/hr heat input. Primary fuel is coal, with lesser amounts of wood, tire derived fuel (TDF) and natural gas. The boiler unit emissions are controlled by spray dryer absorbers and baghouses, and the natural gas burners are of a low NOx design.

☐ Check here if any of the above information is different than what appears in the existing ROP. Identify any changes on the marked-up copy of your existing ROP.

OWNER INFORMATION

Owner Name	Section Number (if applicable)
T.E.S. Filer City Station Limited Partnership	

Mailing address (☐ check if same as source address)
700 Mee Street

City	State	ZIP Code	County	Country
Filer City	MI	49634	Manistee	USA

☐ Check here if any information in this ROP renewal application is confidential. Confidential information should be identified on an Additional Information (AI-001) Form.

SRN: N1685	Section Number (if applicable):

PART A: GENERAL INFORMATION (continued)

At least one contact and responsible official must be identified. Additional contacts and responsible officials may be included if necessary.

CONTACT INFORMATION

Contact 1 Name			Title	
Todd Guenthardt			Senior Maintenance Supervisor	
Company Name & Mailing address (☒ check if same as source address)				
City	State	ZIP Code	County	Country
Phone number		E-mail address		
231-723-6573, Ext. 104		Todd.guenthardt@cmsenergy.com		

Contact 2 Name (optional)			Title	
Jason Prentice			Environmental Engineer	
Company Name & Mailing address (☐ check if same as source address)				
Consumers Energy – 1945 W. Parnall Road				
City	State	ZIP Code	County	Country
Jackson	MI	49201	Jackson	USA
Phone number		E-mail address		
517-788-1467		Jason.prentice@cmsenergy.com		

RESPONSIBLE OFFICIAL INFORMATION

Responsible Official 1 Name			Title	
Henry Hoffman			Plant General Manager	
Company Name & Mailing address (☒ check if same as source address)				
City	State	ZIP Code	County	Country
Phone number		E-mail address		
231-723-6573, Ext. 102		Henry.hoffman@cmsenergy.com		

Responsible Official 2 Name (optional)			Title	
Company Name & Mailing address (☐ check if same as source address)				
City	State	ZIP Code	County	Country
Phone number		E-mail address		

☐ Check here if an AI-001 Form is attached to provide more information for Part A. Enter AI-001 Form ID:

SRN: N1685	Section Number (if applicable):

PART B: APPLICATION SUBMITTAL and CERTIFICATION by Responsible Official

Identify the items that are included as part of your administratively complete application in the checklist below. For your application to be complete, it must include information necessary to evaluate the source and to determine all applicable requirements. Answer the compliance statements as they pertain to all the applicable requirements to which the source is subject. The source's Responsible Official must sign and date this form.

Listing of ROP Application Contents. Check the box for the items included with your application.	
☒ Completed ROP Renewal Application Form (and any AI-001 Forms) (required)	☐ Compliance Plan/Schedule of Compliance
☒ Mark-up copy of existing ROP using official version from the AQD website (required)	☐ Stack information
☐ Copies of all Permit(s) to Install (PTIs) that have not been incorporated into existing ROP (required)	☐ Acid Rain Permit Initial/Renewal Application
☐ Criteria Pollutant/Hazardous Air Pollutant (HAP) Potential to Emit Calculations	☒ Cross-State Air Pollution Rule (CSAPR) Information
☐ MAERS Forms (to report emissions not previously submitted)	☐ Confidential Information
☐ Copies of all Consent Order/Consent Judgments that have not been incorporated into existing ROP	☒ Paper copy of all documentation provided (required)
☒ Compliance Assurance Monitoring (CAM) Plan	☒ Electronic documents provided (optional)
☒ Other Plans (e.g., Malfunction Abatement, Fugitive Dust, Operation and Maintenance, etc.)	☐ Other, explain:

Compliance Statement

This source is in compliance with **all** of its applicable requirements, including those contained in the existing ROP, Permits to Install that have not yet been incorporated into that ROP, and other applicable requirements not currently contained in the existing ROP.	☒ Yes ☐ No
This source will continue to be in compliance with all of its applicable requirements, including those contained in the existing ROP, Permits to Install that have not yet been incorporated into that ROP, and other applicable requirements not currently contained in the existing ROP.	☒ Yes ☐ No
This source will meet in a timely manner applicable requirements that become effective during the permit term.	☒ Yes ☐ No

The method(s) used to determine compliance for each applicable requirement is/are the method(s) specified in the existing ROP, Permits to Install that have not yet been incorporated into that ROP, and all other applicable requirements not currently contained in the existing ROP.

If any of the above are checked No, identify the emission unit(s) or flexible group(s) affected and the specific condition number(s) or applicable requirement for which the source is or will be out of compliance at the time of issuance of the ROP renewal on an AI-001 Form. Provide a compliance plan and schedule of compliance on an AI-001 Form.

Name and Title of the Responsible Official (Print or Type)

Henry M. Hoffman, Plant General Manager

As a Responsible Official, I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this application are true, accurate, and complete.

Henry M. Hoffman — **Signature of Responsible Official**

10-4-2019 — **Date**

SRN: N1685	Section Number (if applicable):

PART C: SOURCE REQUIREMENT INFORMATION

Answer the questions below for specific requirements or programs to which the source may be subject.

C1.	Actual emissions and associated data from **all** emission units with applicable requirements (including those identified in the existing ROP, Permits to Install and other equipment that have not yet been incorporated into the ROP) are required to be reported in MAERS. Are there any emissions and associated data that have not been reported in MAERS for the most recent emissions reporting year? If Yes, identify the emission unit(s) that was/were not reported in MAERS on an AI-001 Form. Applicable MAERS form(s) for unreported emission units must be included with this application.	☐ Yes ☒ No
C2.	Is this source subject to the federal regulations on ozone-depleting substances? (40 CFR Part 82)	☒ Yes ☐ No
C3.	Is this source subject to the federal Chemical Accident Prevention Provisions? (Section 112(r) of the Clean Air Act Amendments, 40 CFR Part 68)	☐ Yes ☒ No
	If Yes, a Risk Management Plan (RMP) and periodic updates must be submitted to the USEPA. Has an updated RMP been submitted to the USEPA?	☐ Yes ☐ No
C4.	Has this stationary source **added or modified** equipment since the last ROP renewal that changes the potential to emit (PTE) for criteria pollutant (CO, NOx, PM10, PM2.5, SO_2, VOC, lead) emissions? If Yes, include potential emission calculations (or the PTI and/or ROP revision application numbers, or other references for the PTE demonstration) for the added or modified equipment on an AI-001 Form. If No, criteria pollutant potential emission calculations do not need to be included.	☐ Yes ☒ No
C5.	Has this stationary source **added or modified** equipment since the last ROP renewal that changes the PTE for hazardous air pollutants (HAPs) regulated by Section 112 of the federal Clean Air Act? If Yes, include potential emission calculations (or the PTI and/or ROP revision application numbers or other references for the PTE demonstration) for the added or modified equipment on an AI-001 Form. Fugitive emissions must be included in HAP emission calculations. If No, HAP potential emission calculations do not need to be included.	☐ Yes ☒ No
C6.	Are any emission units subject to the Cross-State Air Pollution Rule (CSAPR)? If Yes, identify the specific emission unit(s) subject to CSAPR on an AI-001 Form.	☒ Yes ☐ No
C7.	Are any emission units subject to the federal Acid Rain Program? If Yes, identify the specific emission unit(s) subject to the federal Acid Rain Program on an AI-001 Form.	☐ Yes ☒ No
	Is an Acid Rain Permit Renewal Application included with this application?	☐ Yes ☒ No
C8.	Are any emission units identified in the existing ROP subject to compliance assurance monitoring (CAM)? If Yes, identify the specific emission unit(s) subject to CAM on an AI-001 Form. If a CAM plan has not been previously submitted to the MDEQ, one must be included with the ROP renewal application on an AI-001 Form. If the CAM Plan has been updated, include an updated copy.	☒ Yes ☐ No
	Is a CAM plan included with this application?	☒ Yes ☐ No
	If a CAM Plan is included, check the type of proposed monitoring included in the Plan:	
	1. Monitoring proposed by the source based on performance of the control device, or	☐
	2. Presumptively Acceptable Monitoring, if eligible	☒
C9.	Does the source have any plans such as a malfunction abatement plan, fugitive dust plan, operation/maintenance plan, or any other monitoring plan that is referenced in an existing ROP, Permit to Install requirement, or any other applicable requirement?	☒ Yes ☐ No
	If Yes, then a copy must be submitted as part of the ROP renewal application.	
C10.	Are there any specific requirements that the source proposes to be identified in the ROP as non-applicable?	☒ Yes ☐ No
	If Yes, then a description of the requirement and justification must be submitted as part of the ROP renewal application on an AI-001 Form.	

☒ Check here if an AI-001 Form is attached to provide more information for Part C. Enter AI-001 Form ID: **AI-PART_C**

SRN: N1685	Section Number (if applicable):

PART D: PERMIT TO INSTALL (PTI) EXEMPT EMISSION UNIT INFORMATION

Review all emission units at the source and answer the question below.

D1. Does the source have any emission units that do not appear in the existing ROP but are required to be listed in the ROP application under R 336.1212(4) (Rule 212(4)) of the Michigan Air Pollution Control Rules? If Yes, identify the emission units in the table below. ☒ Yes ☐ No

If No, go to Part E.

Note: Emission units that are subject to process specific emission limitations or standards, even if identified in Rule 212, must be captured in either Part G or H of this application form. Identical emission units may be grouped (e.g. PTI exempt Storage Tanks).

Emission Unit ID	**Emission Unit Description**	**Rule 212(4) Citation** [e.g. Rule 212(4)(c)]	**Rule 201 Exemption Rule Citation** [e.g. Rule 282(2)(b)(i)]
EUSPACEHTRS	15 Natural gas space heaters each rated at 0.2 mmBtu/hr	212(4)(c)	282(2)(b)(i)
EUHOTWTRHTR	Natural gas hot water heater rated 0.199 mmBtu	212(4)(c)	282(2)(b)(i)
EUHEATBLR	Natural gas hot water heating boiler, rated 0.3 mmBtu	212(4)(c)	282(2)(b)(i)
EUPORTTORCH	3 Portable torch cutters	212(4)(e)	285(j)(i)

Comments:

☐ Check here if an AI-001 Form is attached to provide more information for Part D. Enter AI-001 Form ID: **AI-**

SRN: N1685	Section Number (if applicable):

PART E: EXISTING ROP INFORMATION

Review all emission units and applicable requirements (including any source wide requirements) in the existing ROP and answer the questions below as they pertain to **all** emission units and **all** applicable requirements in the existing ROP.

E1. Does the source propose to make any additions, changes or deletions to terms, conditions and underlying applicable requirements as they appear in the existing ROP? If Yes, identify changes and additions on Part F, Part G and/or Part H.	☐ Yes ☒ No
E2. For each emission unit(s) identified in the existing ROP, all stacks with applicable requirements are to be reported in MAERS. Are there any stacks with applicable requirements for emission unit(s) identified in the existing ROP that were not reported in the most recent MAERS reporting year? If Yes, identity the stack(s) that was/were not reported on applicable MAERS form(s).	☐ Yes ☒ No
E3. Have any emission units identified in the existing ROP been modified or reconstructed that required a PTI? If Yes, complete Part F with the appropriate information.	☐ Yes ☒ No
E4. Have any emission units identified in the existing ROP been dismantled? If Yes, identify the emission unit(s) and the dismantle date in the comment area below or on an AI-001 Form.	☐ Yes ☒ No

Comments:

☐ Check here if an AI-001 Form is attached to provide more information for Part E. Enter AI-001 Form ID: **AI-**

SRN: N1685	Section Number (if applicable):

PART F: PERMIT TO INSTALL (PTI) INFORMATION

Review all emission units and applicable requirements at the source and answer the following questions as they pertain to **all** emission units with PTIs. Any PTI(s) identified below must be attached to the application.

F1. Has the source obtained any PTIs where the applicable requirements from the PTI have not been incorporated into the existing ROP? If Yes, complete the following table. If No, go to Part G. ☐ Yes ☒ No

Permit to Install Number	Emission Units/Flexible Group ID(s)	Description (*Include Process Equipment, Control Devices and Monitoring Devices*)	Date Emission Unit was Installed/ Modified/ Reconstructed

F2. Do any of the PTIs listed above change, add, or delete terms/conditions to **established emission units** in the existing ROP? If Yes, identify the emission unit(s) or flexible group(s) affected in the comments area below or on an AI-001 Form and identify all changes, additions, and deletions in a mark-up of the existing ROP. ☐ Yes ☐ No

F3. Do any of the PTIs listed above identify **new emission units** that need to be incorporated into the ROP? If Yes, submit the PTIs as part of the ROP renewal application on an AI-001 Form, and include the new emission unit(s) or flexible group(s) in the mark-up of the existing ROP. ☐ Yes ☐ No

F4. Are there any stacks with applicable requirements for emission unit(s) identified in the PTIs listed above that were not reported in MAERS for the most recent emissions reporting year? If Yes, identity the stack(s) that were not reported on the applicable MAERS form(s). ☐ Yes ☐ No

F5. Are there any proposed administrative changes to any of the emission unit names, descriptions or control devices in the PTIs listed above for any emission units not already incorporated into the ROP? If Yes, describe the changes on an AI-001 Form. ☐ Yes ☐ No

Comments:

☐ Check here if an AI-001 Form is attached to provide more information for Part F. Enter AI-001 Form ID: **AI-**

SRN: N1685	Section Number (if applicable):

PART G: EMISSION UNITS MEETING THE CRITERIA OF RULES 281(2)(h), 285(2)(r)(iv), 287(2)(c), OR 290

Review all emission units and applicable requirements at the source and answer the following questions.

G1. Does the source have any new and/or existing emission units which do not already appear in the existing ROP and which meet the criteria of Rules 281(2)(h), 285(2)(r)(iv), 287(2)(c), or 290.

If Yes, identify the emission units in the table below. If No, go to Part H. ☐ Yes ☒ No

Note: If several emission units were installed under the same rule above, provide a description of each and an installation/modification/reconstruction date for each.

Origin of Applicable Requirements	**Emission Unit Description – *Provide Emission Unit ID and a description of Process Equipment, Control Devices and Monitoring Devices***	**Date Emission Unit was Installed/ Modified/ Reconstructed**
☐ Rule 281(2)(h) or 285(2)(r)(iv) cleaning operation		
☐ Rule 287(2)(c) surface coating line		
☐ Rule 290 process with limited emissions		

Comments:

☐ Check here if an AI-001 Form is attached to provide more information for Part G. Enter AI-001 Form ID: **AI-**

SRN: N1685	Section Number (if applicable):

PART H: REQUIREMENTS FOR ADDITION OR CHANGE

Complete this part of the application form for all proposed additions, changes or deletions to the existing ROP. This includes state or federal regulations that the source is subject to and that must be incorporated into the ROP or other proposed changes to the existing ROP. **Do not include additions or changes that have already been identified in Parts F or G of this application form.** If additional space is needed copy and complete an additional Part H.

Complete a separate Part H for each emission unit with proposed additions and/or changes.

H1. Are there changes that need to be incorporated into the ROP that have not been identified in Parts F and G? If Yes, answer the questions below.	☒ Yes	☐ No
H2. Are there any proposed administrative changes to any of the existing emission unit names, descriptions or control devices in the ROP? If Yes, describe the changes in questions H8 – H16 below and in the affected Emission Unit Table(s) in the mark-up of the ROP.	☐ Yes	☒ No
H3. Does the source propose to add a new emission unit or flexible group to the ROP not previously identified in Parts F or G? If Yes, identify and describe the emission unit name, process description, control device(s), monitoring device(s) and applicable requirements in questions H8 – H16 below and in a new Emission Unit Table in the mark-up of the ROP. See instructions on how to incorporate a new emission unit/flexible group into the ROP.	☒ Yes	☐ No
H4. Does the source propose to add new state or federal regulations to the existing ROP? If Yes, on an AI-001 Form, identify each emission unit/flexible group that the new regulation applies to and identify each state or federal regulation that should be added. Also, describe the new requirements in questions H8 – H16 below and add the specific requirements to existing emission units/flexible groups in the mark-up of the ROP, create a new Emission Unit/Flexible Group Table, or add an AQD template table for the specific state or federal requirement.	☒ Yes	☐ No
H5. Has a Consent Order/Consent Judgment (CO/CJ) been issued where the requirements were not incorporated into the existing ROP? If Yes, list the CO/CJ number(s) below and add or change the conditions and underlying applicable requirements in the appropriate Emission Unit/Flexible Group Tables in the mark-up of the ROP.	☐ Yes	☒ No
H6. Does the source propose to add, change and/or delete **source-wide** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below.	☐ Yes	☒ No
H7. Are you proposing to **streamline** any requirements? If Yes, identify the streamlined and subsumed requirements and the EU ID, and provide a justification for streamlining the applicable requirement below.	☐ Yes	☒ No

PART H: REQUIREMENTS FOR ADDITION OR CHANGE – (continued)

H8. Does the source propose to add, change and/or delete **emission limit** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. ☒ Yes ☐ No

The existing ROP simply contains a broad reference requiring compliance with 40 CFR Part 63, Subpart UUUUU (i.e., the Mercury and Air Toxics Standard, or MATS). Adding emission limits consistent with the MATS regulation template as developed by EGLE.

H9. Does the source propose to add, change and/or delete **material limit** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. ☐ Yes ☒ No

H10. Does the source propose to add, change and/or delete **process/operational restriction** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. ☒ Yes ☐ No

Adding process/operational requirements consistent with the MATS regulation template.

H11. Does the source propose to add, change and/or delete **design/equipment parameter** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. ☒ Yes ☐ No

Adding design/equipment parameter requirements consistent with the MATS regulation template.

H12. Does the source propose to add, change and/or delete **testing/sampling** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. ☒ Yes ☐ No

Adding testing/sampling requirements consistent with the MATS regulation template.

H13. Does the source propose to add, change and/or delete **monitoring/recordkeeping** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. ☒ Yes ☐ No

Adding monitoring/recordkeeping requirements consistent with the MATS regulation template.

H14. Does the source propose to add, change and/or delete **reporting** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. ☒ Yes ☐ No

Adding reporting requirements consistent with the MATS regulation template.

PART H: REQUIREMENTS FOR ADDITION OR CHANGE – (continued)

H15. Does the source propose to add, change and/or delete **stack/vent restrictions**? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. ☐ Yes ☒ No

H16. Does the source propose to add, change and/or delete any **other** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. ☒ Yes ☐ No

Adding other requirements consistent with the MATS regulation template.

H17. Does the source propose to add terms and conditions for an alternative operating scenario or intra-facility trading of emissions? If Yes, identify the proposed conditions in a mark-up of the corresponding section of the ROP and provide a justification below. ☐ Yes ☒ No

☒ Check here if an AI-001 Form is attached to provide more information for Part H. Enter AI-001 Form ID: **AI-**MATS

EGLE

RENEWABLE OPERATING PERMIT APPLICATION
AI-001: ADDITIONAL INFORMATION

This information is required by Article II, Chapter 1, part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment. Please type or print clearly. Refer to instructions for additional information to complete this form.

	SRN: N1685	Section Number (if applicable):

1. Additional Information ID
AI-PART_C

Additional Information

2. Is This Information Confidential? ☐ Yes ☐ No

Question C6: Are any emission units subject to the Cross-State Air Pollution Rule (CSAPR)?
Each of the simple- and combined-cycle units, including the associated duct burners, is subject to the CSAPR NO_x Annual, SO_2 Group 1 and NO_x Ozone Season Group 2 Trading Programs. The following is a crosswalk of emission unit IDs under the ROP and CSAPR Programs.

Table 1. Crosswalk for Units IDs Under the ROP and CSAPR

ROP Unit ID	CSAPR Unit ID
EUBOILER01	1
EUBOILER02	2

It should be noted that the CSAPR language in Appendix 9 of the existing ROP is outdated in relation to the CSAPR NO_x Ozone Season requirements. Starting with the 2017 NO_x ozone season compliance period, affected units located in Michigan are subject to 40 CFR Part 97, Subpart EEEEE (i.e., Ozone Season Group 2) rather than 40 CFR Part 97, Subpart BBBBB (i.e., Ozone Season Group 1). The ROP currently reflects the latter set of requirements. TES Filer City Station has proposed associated changes within the ROP mark-up which accompanies this application.

Question C7: Are any emission units subject to the federal Acid Rain Program?
TES Filer City Station is classified as a Qualifying facility(QF) as that term is defined at 40 CFR 72.2. Therefore, the facility is not subject to the federal Acid Rain Program pursuant to the exemption provided at 40 CFR 72.6(b)(5).

Question C8: Are any emission units identified in the existing ROP subject to compliance assurance monitoring (CAM)?
Of the various emission units reflected in the ROP, only EUBOILER01 and EUBOILER02 employ “control devices” as that term is defined at 40 CFR §64.1, and have potential pre-control emissions of regulated pollutants greater than the 100 tons per year major source threshold. The controls consist of fabric filter baghouses for particulate matter control and spray dryer absorbers (SDAs) for SO_2 and acid gas control. While the FGBOILERS PM emission limits are subject to CAM, the FGBOILERS SO_2 emission limits are exempt from CAM pursuant to 40 CFR 64.2(b)(1)(vi), as the ROP already specifies a continuous compliance determination method (i.e., the use of SO_2, diluent and flow CEMS). Also, note that the newly proposed PM and SO_2 emission limits for these boilers under FGMATS are not subject to CAM pursuant to the exemption provided at 40 CFR 64.2(b)(1)(i), as the MATS emission limits were first proposed by the Administrator after November 15, 1990. A revised CAM Plan for the subject PM emission limits is attached.

Question C9: Does the source have any plans such as a malfunction abatement plan, fugitive dust plan, operation/maintenance plan, or any other monitoring plan that is referenced in an existing ROP, Permit to Install requirement, or any other applicable requirement?
The current ROP references a “Fugitive Dust Plan”, “Maintenance and Malfunction Abatement Management Plan”. A ”C/D Waste Wood Monitoring Plan” is in place should TES wish to resume burning this type of fuel. Copies of the latest versions of these plans are included with this ROP renewal application.

EGLE

RENEWABLE OPERATING PERMIT APPLICATION
AI-001: ADDITIONAL INFORMATION

This information is required by Article II, Chapter 1, part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment. Please type or print clearly. Refer to instructions for additional information to complete this form.

	SRN: N1685	Section Number (if applicable):

1. Additional Information ID
AI-PART_C

Additional Information

2. Is This Information Confidential? ☐ Yes ☒ No

Question C10: Are there any specific requirements that the source proposes to be identified in the ROP as non-applicable?

1. In the portion of the Staff Report (last amended on April 7, 2017) dated February 2, 2015, Page 5 includes a statement that EUBOILER01 and EUBOILER02 are subject to Acid Rain Program as promulgated at 40 CFR Part 72. This is false, as the site is not and has never been subject to the Acid Rain Program pursuant to the exemption provided at 40 CFR 72.6(b)(5) for qualifying facilities.

Please amend the Staff Report language accordingly and list the site exempt from the Acid Rain Program within the renewed ROP (i.e., under Section E. Non-Applicable Requirements).

2. The ancillary natural gas-fired comfort and hot water heaters/boiler listed in Part D of the application are not subject to the Industrial Boiler MACT under 40 CFR Part 63, Subpart DDDDD. This should be noted under Section E. Non-Applicable Requirements of the renewed ROP to eliminate possible confusion.

EGLE

RENEWABLE OPERATING PERMIT APPLICATION
AI-001: ADDITIONAL INFORMATION

This information is required by Article II, Chapter 1, part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment. Please type or print clearly. Refer to instructions for additional information to complete this form.

	SRN: N1685	Section Number (if applicable):

1. Additional Information ID
AI-MATS

Additional Information

2. Is This Information Confidential? ☐ Yes ☒ No

TES Filer City Station is proposing to add the Mercury and Air Toxics Standard (MATS) requirements to the ROP through a new flexible emission group called FGMATS, utilizing the MATS ROP Template as provided on the EGLE website. Please see the ROP Mark-up for the detailed requirements. For context, EUBOILER01 and EUBOILER02 are classified as existing coal-fired units not firing low rank virgin coal. The facility has chosen to comply with a filterable particulate matter (PM) emission limit of 0.030 lb/mmBtu via stack testing, the sulfur dioxide (SO_2) surrogate limit of 0.20 lb/mmBtu via SO_2 and diluent CEMS certified and operating in accordance with 40 CFR Part 75, and a mercury emission limit of 1.2 lbs/TBtu based on 30-day Low Emitting EGU (LEE) stack tests. As of the 2nd quarter of 2019, both units have also qualified as LEE units for PM.

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

EFFECTIVE DATE: April 27, 2015
REVISION DATE: June 16, 2016, June 19, 2017

ISSUED TO:

TES Filer City Station

State Registration Number (SRN): N1685

LOCATED AT:

700 Mee Street, Filer City, Manistee County, Michigan 49634

RENEWABLE OPERATING PERMIT

Permit Number: MI-ROP-N1685-2015b

Expiration Date: April 27, 2020

Administratively Complete ROP Renewal Application Due Between:
October 27, 2018 and October 27, 2019

This Renewable Operating Permit (ROP) is issued in accordance with and subject to Section 5506(3) of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). Pursuant to Michigan Air Pollution Control Rule 210(1), this ROP constitutes the permittee's authority to operate the stationary source identified above in accordance with the general conditions, special conditions and attachments contained herein. Operation of the stationary source and all emission units listed in the permit are subject to all applicable future or amended rules and regulations pursuant to Act 451 and the federal Clean Air Act.

SOURCE-WIDE PERMIT TO INSTALL

Permit Number: MI-PTI-N1685-2015b

This Permit to Install (PTI) is issued in accordance with and subject to Section 5505(5) of Act 451. Pursuant to Michigan Air Pollution Control Rule 214a, the terms and conditions herein, identified by the underlying applicable requirement citation of Rule 201(1)(a), constitute a federally enforceable PTI. The PTI terms and conditions do not expire and remain in effect unless the criteria of Rule 201(6) are met. Operation of all emission units identified in the PTI is subject to all applicable future or amended rules and regulations pursuant to Act 451 and the federal Clean Air Act.

Michigan Department of Environmental Quality

_____
Shane Nixon, Cadillac District Supervisor

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AUTHORITY AND ENFORCEABILITY

For the purpose of this permit, the **permittee** is defined as any person who owns or operates an emission unit at a stationary source for which this permit has been issued. The **department** is defined in Rule 104(d) as the Director of the Michigan Department of Environmental Quality (MDEQ) or his or her designee.

The permittee shall comply with all specific details in the permit terms and conditions and the cited underlying applicable requirements. All terms and conditions in this ROP are both federally enforceable and state enforceable unless otherwise footnoted. Certain terms and conditions are applicable to most stationary sources for which an ROP has been issued. These general conditions are included in Part A of this ROP. Other terms and conditions may apply to a specific emission unit, several emission units which are represented as a flexible group, or the entire stationary source which is represented as a Source-Wide group. Special conditions are identified in Parts B, C, D and/or the appendices.

In accordance with Rule 213(2)(a), all underlying applicable requirements are identified for each ROP term or condition. All terms and conditions that are included in a PTI are streamlined, subsumed and/or are state-only enforceable will be noted as such.

In accordance with Section 5507 of Act 451, the permittee has included in the ROP application a compliance certification, a schedule of compliance, and a compliance plan. For applicable requirements with which the source is in compliance, the source will continue to comply with these requirements. For applicable requirements with which the source is not in compliance, the source will comply with the detailed schedule of compliance requirements that are incorporated as an appendix in this ROP. Furthermore, for any applicable requirements effective after the date of issuance of this ROP, the stationary source will meet the requirements on a timely basis, unless the underlying applicable requirement requires a more detailed schedule of compliance.

Issuance of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.

A. GENERAL CONDITIONS

Permit Enforceability

- All conditions in this permit are both federally enforceable and state enforceable unless otherwise noted. **(R 336.1213(5))**

- Those conditions that are hereby incorporated in a state-only enforceable Source-Wide PTI pursuant to Rule 201(2)(d) are designated by footnote one. **(R 336.1213(5)(a), R 336.1214a(5))**

- Those conditions that are hereby incorporated in a federally enforceable Source-Wide PTI pursuant to Rule 201(2)(c) are designated by footnote two. **(R 336.1213(5)(b), R 336.1214a(3))**

General Provisions

1. The permittee shall comply with all conditions of this ROP. Any ROP noncompliance constitutes a violation of Act 451, and is grounds for enforcement action, for ROP revocation or revision, or for denial of the renewal of the ROP. All terms and conditions of this ROP that are designated as federally enforceable are enforceable by the Administrator of the United States Environmental Protection Agency (USEPA) and by citizens under the provisions of the federal Clean Air Act (CAA). Any terms and conditions based on applicable requirements which are designated as "state-only" are not enforceable by the USEPA or citizens pursuant to the CAA. **(R 336.1213(1)(a))**

2. It shall not be a defense for the 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 this ROP. **(R 336.1213(1)(b))**

3. This ROP may be modified, revised, or revoked for cause. The filing of a request by the permittee for a permit modification, revision, or termination, or a notification of planned changes or anticipated noncompliance does not stay any ROP term or condition. This does not supersede or affect the ability of the permittee to make changes, at the permittee's own risk, pursuant to Rule 215 and Rule 216. **(R 336.1213(1)(c))**

4. The permittee shall allow the department, or an authorized representative of the department, upon presentation of credentials and other documents as may be required by law and upon stating the authority for and purpose of the investigation, to perform any of the following activities: **(R 336.1213(1)(d))**
   a. Enter, at reasonable times, a stationary source or other premises where emissions-related activity is conducted or where records must be kept under the conditions of the ROP.
   b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the ROP.
   c. Inspect, at reasonable times, any of the following:
      i. Any stationary source.
      ii. Any emission unit.
      iii. Any equipment, including monitoring and air pollution control equipment.
      iv. Any work practices or operations regulated or required under the ROP.
   d. As authorized by Section 5526 of Act 451, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the ROP or applicable requirements.

5. The permittee shall furnish to the department, within a reasonable time, any information the department may request, in writing, to determine whether cause exists for modifying, revising, or revoking the ROP or to determine compliance with this ROP. Upon request, the permittee shall also furnish to the department copies of any records that are required to be kept as a term or condition of this ROP. For information which is claimed by the permittee to be confidential, consistent with the requirements of the 1976 PA 442, MCL §15.231 et seq., and known as the Freedom of Information Act, the person may also be required to furnish the records directly to the USEPA together with a claim of confidentiality. **(R 336.1213(1)(e))**

6. A challenge by any person, the Administrator of the USEPA, or the department to a particular condition or a part of this ROP shall not set aside, delay, stay, or in any way affect the applicability or enforceability of any other condition or part of this ROP. **(R 336.1213(1)(f))**

7. The permittee shall pay fees consistent with the fee schedule and requirements pursuant to Section 5522 of Act 451. **(R 336.1213(1)(g))**

8. This ROP does not convey any property rights or any exclusive privilege. **(R 336.1213(1)(h))**

Equipment & Design

9. Any collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in Rule 370(2).[2] **(R 336.1370)**

10. Any air cleaning device shall be installed, maintained, and operated in a satisfactory manner and in accordance with the Michigan Air Pollution Control rules and existing law. **(R 336.1910)**

Emission Limits

11. Unless otherwise specified in this ROP, the permittee shall comply with Rule 301, which states, in part, "Except as provided in subrules 2, 3, and 4 of this rule, a person shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of a density greater than the most stringent of the following":[2] **(R 336.1301(1))**
    a. A 6-minute average of 20 percent opacity, except for one 6-minute average per hour of not more than 27 percent opacity.
    b. A limit specified by an applicable federal new source performance standard.

    The grading of visible emissions shall be determined in accordance with Rule 303.

12. The permittee shall not cause or permit the emission of an air contaminant or water vapor in quantities that cause, alone or in reaction with other air contaminants, either of the following:
    a. Injurious effects to human health or safety, animal life, plant life of significant economic value, or property.[1] **(R 336.1901(a))**
    b. Unreasonable interference with the comfortable enjoyment of life and property.[1] **(R 336.1901(b))**

Testing/Sampling

13. The department may require the owner or operator of any source of an air contaminant to conduct acceptable performance tests, at the owner's or operator's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001(1).[2] **(R 336.2001)**

14. Any required performance testing shall be conducted in accordance with Rule 1001(2), Rule 1001(3) and Rule 1003. **(R 336.2001(2), R 336.2001(3), R 336.2003(1))**

15. Any required test results shall be submitted to the Air Quality Division (AQD) in the format prescribed by the applicable reference test method within 60 days following the last date of the test. **(R 336.2001(5))**

Monitoring/Recordkeeping

16. Records of any periodic emission or parametric monitoring required in this ROP shall include the following information specified in Rule 213(3)(b)(i), where appropriate. **(R 336.1213(3)(b))**
    a. The date, location, time, and method of sampling or measurements.
    b. The dates the analyses of the samples were performed.
    c. The company or entity that performed the analyses of the samples.
    d. The analytical techniques or methods used.
    e. The results of the analyses.
    f. The related process operating conditions or parameters that existed at the time of sampling or measurement.

17. All required monitoring data, support information and all reports, including reports of all instances of deviation from permit requirements, shall be kept and furnished to the department upon request for a period of not less than 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, or other original data records, for continuous monitoring instrumentation and copies of all reports required by the ROP. **(R 336.1213(1)(e), R 336.1213(3)(b)(ii))**

Certification & Reporting

18. Except for the alternate certification schedule provided in Rule 213(3)(c)(iii)(B), any document required to be submitted to the department as a term or condition of this ROP shall contain an original certification by a Responsible Official which states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. **(R 336.1213(3)(c))**

19. A Responsible Official shall certify to the appropriate AQD District Office and to the USEPA that the stationary source is and has been in compliance with all terms and conditions contained in the ROP except for deviations that have been or are being reported to the appropriate AQD District Office pursuant to Rule 213(3)(c). This certification shall include all the information specified in Rule 213(4)(c)(i) through (v) and shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the certification are true, accurate, and complete. The USEPA address is: USEPA, Air Compliance Data - Michigan, Air and Radiation Division, 77 West Jackson Boulevard, Chicago, Illinois 60604. **(R 336.1213(4)(c))**

20. The certification of compliance shall be submitted annually for the term of this ROP as detailed in the special conditions, or more frequently if specified in an applicable requirement or in this ROP. **(R 336.1213(4)(c))**

21. The permittee shall promptly report any deviations from ROP requirements and certify the reports. The prompt reporting of deviations from ROP requirements is defined in Rule 213(3)(c)(ii) as follows, unless otherwise described in this ROP. **(R 336.1213(3)(c))**
    a. For deviations that exceed the emissions allowed under the ROP, prompt reporting means reporting consistent with the requirements of Rule 912 as detailed in Condition 25. All reports submitted pursuant to this paragraph shall be promptly certified as specified in Rule 213(3)(c)(iii).
    b. For deviations which exceed the emissions allowed under the ROP and which are not reported pursuant to Rule 912 due to the duration of the deviation, prompt reporting means the reporting of all deviations in the semiannual reports required by Rule 213(3)(c)(i). The report shall describe reasons for each deviation and the actions taken to minimize or correct each deviation.
    c. For deviations that do not exceed the emissions allowed under the ROP, prompt reporting means the reporting of all deviations in the semiannual reports required by Rule 213(3)(c)(i). The report shall describe the reasons for each deviation and the actions taken to minimize or correct each deviation.

22. For reports required pursuant to Rule 213(3)(c)(ii), prompt certification of the reports is described in Rule 213(3)(c)(iii) as either of the following **(R 336.1213(3)(c))**:
    a. Submitting a certification by a Responsible Official with each report which states that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.
    b. Submitting, within 30 days following the end of a calendar month during which one or more prompt reports of deviations from the emissions allowed under the ROP were submitted to the department pursuant to Rule 213(3)(c)(ii), a certification by a Responsible Official which states that, "based on information and belief formed after reasonable inquiry, the statements and information contained in each of the reports submitted during the previous month were true, accurate, and complete". The certification shall include a listing of the reports that are being certified. Any report submitted pursuant to Rule 213(3)(c)(ii) that will be certified on a monthly basis pursuant to this paragraph shall include a statement that certification of the report will be provided within 30 days following the end of the calendar month.

23. Semiannually for the term of the ROP as detailed in the special conditions, or more frequently if specified, the permittee shall submit certified reports of any required monitoring to the appropriate AQD District Office. All instances of deviations from ROP requirements during the reporting period shall be clearly identified in the reports. **(R 336.1213(3)(c)(i))**

24. On an annual basis, the permittee shall report the actual emissions, or the information necessary to determine the actual emissions, of each regulated air pollutant as defined in Rule 212(6) for each emission unit utilizing the emissions inventory forms provided by the department. **(R 336.1212(6))**

25. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the appropriate AQD District Office. The notice shall be provided not later than two business days after the start-up, shutdown, or discovery of the abnormal conditions or malfunction. Notice shall be by any reasonable means, including electronic, telephonic, or oral communication. Written reports, if required under Rule 912, must be submitted to the appropriate AQD District Supervisor within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal conditions or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5) and shall be certified by a Responsible Official in a manner consistent with the CAA.[2] **(R 336.1912)**

Permit Shield

26. Compliance with the conditions of the ROP shall be considered compliance with any applicable requirements as of the date of ROP issuance, if either of the following provisions is satisfied. **(R 336.1213(6)(a)(i), R 336.1213(6)(a)(ii))**
    a. The applicable requirements are included and are specifically identified in the ROP.
    b. The permit includes a determination or concise summary of the determination by the department that other specifically identified requirements are not applicable to the stationary source.

    Any requirements identified in Part E of this ROP have been identified as non-applicable to this ROP and are included in the permit shield.

27. Nothing in this ROP shall alter or affect any of the following:
    a. The provisions of Section 303 of the CAA, emergency orders, including the authority of the USEPA under Section 303 of the CAA. **(R 336.1213(6)(b)(i))**
    b. The liability of the owner or operator of this source for any violation of applicable requirements prior to or at the time of this ROP issuance. **(R 336.1213(6)(b)(ii))**
    c. The applicable requirements of the acid rain program, consistent with Section 408(a) of the CAA. **(R 336.1213(6)(b)(iii))**

d. The ability of the USEPA to obtain information from a source pursuant to Section 114 of the CAA. **(R 336.1213(6)(b)(iv))**

28. The permit shield shall not apply to provisions incorporated into this ROP through procedures for any of the following:
    a. Operational flexibility changes made pursuant to Rule 215. **(R 336.1215(5))**
    b. Administrative Amendments made pursuant to Rule 216(1)(a)(i)-(iv). **(R 336.1216(1)(b)(iii))**
    c. Administrative Amendments made pursuant to Rule 216(1)(a)(v) until the amendment has been approved by the department. **(R 336.1216(1)(c)(iii))**
    d. Minor Permit Modifications made pursuant to Rule 216(2). **(R 336.1216(2)(f))**
    e. State-Only Modifications made pursuant to Rule 216(4) until the changes have been approved by the department. **(R 336.1216(4)(e))**

29. Expiration of this ROP results in the loss of the permit shield. If a timely and administratively complete application for renewal is submitted not more than 18 months, but not less than 6 months, before the expiration date of the ROP, but the department fails to take final action before the end of the ROP term, the existing ROP does not expire until the renewal is issued or denied, and the permit shield shall extend beyond the original ROP term until the department takes final action. **(R 336.1217(1)(c), R 336.1217(1)(a))**

Revisions

30. For changes to any process or process equipment covered by this ROP that do not require a revision of the ROP pursuant to Rule 216, the permittee must comply with Rule 215. **(R 336.1215, R 336.1216)**

31. A change in ownership or operational control of a stationary source covered by this ROP shall be made pursuant to Rule 216(1). **(R 336.1219(2))**

32. For revisions to this ROP, an administratively complete application shall be considered timely if it is received by the department in accordance with the time frames specified in Rule 216. **(R 336.1210(10))**

33. Pursuant to Rule 216(1)(b)(iii), Rule 216(2)(d) and Rule 216(4)(d), after a change has been made, and until the department takes final action, the permittee shall comply with both the applicable requirements governing the change and the ROP terms and conditions proposed in the application for the modification. During this time period, the permittee may choose to not comply with the existing ROP terms and conditions that the application seeks to change. However, if the permittee fails to comply with the ROP terms and conditions proposed in the application during this time period, the terms and conditions in the ROP are enforceable. **(R 336.1216(1)(c)(iii), R 336.1216(2)(d), R 336.1216(4)(d))**

Reopenings

34. A ROP shall be reopened by the department prior to the expiration date and revised by the department under any of the following circumstances:
    a. If additional requirements become applicable to this stationary source with three or more years remaining in the term of the ROP, but not if the effective date of the new applicable requirement is later than the ROP expiration date. **(R 336.1217(2)(a)(i))**
    b. If additional requirements pursuant to Title IV of the CAA become applicable to this stationary source. **(R 336.1217(2)(a)(ii))**
    c. If the department determines that the ROP contains a material mistake, information required by any applicable requirement was omitted, or inaccurate statements were made in establishing emission limits or the terms or conditions of the ROP. **(R 336.1217(2)(a)(iii))**
    d. If the department determines that the ROP must be revised to ensure compliance with the applicable requirements. **(R 336.1217(2)(a)(iv))**

Renewals

35. For renewal of this ROP, an administratively complete application shall be considered timely if it is received by the department not more than 18 months, but not less than 6 months, before the expiration date of the ROP. **(R 336.1210(8))**

Stratospheric Ozone Protection

36. If the permittee is subject to Title 40 of the Code of Federal Regulations (CFR), Part 82 and services, maintains, or repairs appliances except for motor vehicle air conditioners (MVAC), or disposes of appliances containing refrigerant, including MVAC and small appliances, or if the permittee is a refrigerant reclaimer, appliance owner or a manufacturer of appliances or recycling and recovery equipment, the permittee shall comply with all applicable standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F.

37. If the permittee is subject to 40 CFR Part 82, and performs a service on motor (fleet) vehicles when this service involves refrigerant in the 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. The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed by the original equipment manufacturer. The term MVAC as used in Subpart B does not include the air-tight sealed refrigeration system used for refrigerated cargo or an air conditioning system on passenger buses using Hydrochlorofluorocarbon-22 refrigerant.

Risk Management Plan

38. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall register and submit to the USEPA the required data related to the risk management plan for reducing the probability of accidental releases of any regulated substances listed pursuant to Section 112(r)(3) of the CAA as amended in 40 CFR Part 68.130. The list of substances, threshold quantities, and accident prevention regulations promulgated under 40 CFR Part 68, do not limit in any way the general duty provisions under Section 112(r)(1).

39. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall comply with the requirements of 40 CFR Part 68, no later than the latest of the following dates as provided in 40 CFR 68.10(a):
    a. June 21, 1999,
    b. Three years after the date on which a regulated substance is first listed under 40 CFR 68.130, or
    c. The date on which a regulated substance is first present above a threshold quantity in a process.

40. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall submit any additional relevant information requested by any regulatory agency necessary to ensure compliance with the requirements of 40 CFR Part 68.

41. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall annually certify compliance with all applicable requirements of Section 112(r) as detailed in Rule 213(4)(c)). **(40 CFR Part 68)**

Emission Trading

42. Emission averaging and emission reduction credit trading are allowed pursuant to any applicable interstate or regional emission trading program that has been approved by the Administrator of the USEPA as a part of Michigan's State Implementation Plan. Such activities must comply with Rule 215 and Rule 216. **(R 336.1213(12))**

Permit To Install (PTI)

43. The process or process equipment included in this permit shall not be reconstructed, relocated, or modified unless a PTI authorizing such action is issued by the department, except to the extent such action is exempt from the PTI requirements by any applicable rule.[2] **(R 336.1201(1))**

44. The department may, after notice and opportunity for a hearing, revoke PTI terms or conditions if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of the PTI or is violating the department's rules or the CAA.[2] **(R 336.1201(8), Section 5510 of Act 451)**

45. The terms and conditions of a PTI shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by the PTI. If a new owner or operator submits a written request to the department pursuant to Rule 219 and the department approves the request, this PTI will be amended to reflect the change of ownership or operational control. The request must include all of the information required by Subrules (1)(a), (b) and (c) of Rule 219. The written request shall be sent to the appropriate AQD District Supervisor, MDEQ.[2] **(R 336.1219)**

46. If the installation, reconstruction, relocation, or modification of the equipment for which PTI terms and conditions have been approved has not commenced within 18 months of the original PTI issuance date, or has been interrupted for 18 months, the applicable terms and conditions from that PTI, as incorporated into the ROP, shall become void unless otherwise authorized by the department. Furthermore, the person to whom that PTI was issued, or the designated authorized agent, shall notify the department via the Supervisor, Permit Section, MDEQ, AQD, P. O. Box 30260, Lansing, Michigan 48909, if it is decided not to pursue the installation, reconstruction, relocation, or modification of the equipment allowed by the terms and conditions from that PTI.[2] **(R 336.1201(4))**

Footnotes:
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

B. SOURCE-WIDE CONDITIONS

Part B outlines the Source-Wide Terms and Conditions that apply to this stationary source. The permittee is subject to these special conditions for the stationary source in addition to the general conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply to this source, NA (not applicable) has been used in the table. If there are no Source-Wide Conditions, this section will be left blank.

SOURCE-WIDE CONDITIONS

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate the facility unless a program for continuous fugitive emissions control for all plant roadways, the plant yard, all material storage piles, and all material handling operations contained in a "Fugitive Dust Plan" is implemented and maintained.[2] **(40 CFR 52.21, Act 451 324.5524)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall keep records of quantities of water or dust suppressant used on storage piles and roadways, and dates of application.[2] **(40 CFR 52.21, Act 451 324.5524)**

2. The permittee shall keep records of dates roadways and parking areas were swept.[2] **(40 CFR 52.21, Act 451 324.5524)**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
NA	NA	NA	NA

IX. OTHER REQUIREMENT(S)

1. TES Filer City Station shall not accept any deliveries to the facility of any petroleum coke, except as allowed in SC IX.2. By March 31, 2016, all petroleum coke shall be removed from the facility and petroleum coke shall not be stored at the facility thereafter. It is acknowledged that some residual petroleum coke may remain on site.[2,3] **(Act 451 324.5503(b))**

2. If TES Filer City Station elects to accept deliveries of any petroleum coke at the facility, then it shall install at least one continuous Federal Equivalent Method (FEM) real-time particulate matter (PM-10) monitor and at least one Federal Reference Method (FRM) PM-10 filter-based monitor operating every third day, as detailed in Appendix 3 of this ROP.[2,3] **(Act 451 324.5503(b))**

Footnotes:

[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).
[3]This condition is federally enforceable and was originally established in the TES Filer City Station Agreed Administrative Consent Order and Information Request Effective November 23, 2015 and also pursuant to Act 451 324.5503(b), and will remain in effect after termination of the administrative consent order.

C. EMISSION UNIT CONDITIONS

Part C outlines terms and conditions that are specific to individual emission units listed in the Emission Unit Summary Table. The permittee is subject to the special conditions for each emission unit in addition to the General Conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply, NA (not applicable) has been used in the table. If there are no conditions specific to individual emission units, this section will be left blank.

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EUBOILER01	Boiler #1 and its associated dry scrubbing system and baghouse. The boiler is a spreader-stoker firing configuration. The primary fuel is coal with the following supplemental fuels: wood and wood waste, construction/demolition material, petroleum coke, Tire Derived Fuel (TDF), and natural gas. The nominal heat input rating of the boiler is 384 MMBTU/hr including two low NOx natural gas-fired burners, with each burner rated at 100 MMBTU/hr.	01-01-1990 / 07-21-2015	FGBOILERS
EUBOILER02	Boiler #2 and its associated dry scrubbing system and baghouse. The boiler is a spreader-stoker firing configuration. The primary fuel is coal with the following supplemental fuels: wood and wood waste, construction/demolition material, petroleum coke, Tire Derived Fuel (TDF), and natural gas. The nominal heat input rating of the boiler is 384 MMBTU/hr including two low NOx natural gas-fired burners, with each burner rated at 100 MMBTU/hr.	01-01-1990 / 07-21-2015	FGBOILERS
EULIMESTORAGE	The lime storage and handling system consists of all lime handling and storage equipment including blowers, augers, conveyors, silos and slurry tank up to the lime scrubbers.	11-01-1991 / NA	NA
EUASHUNLOAD	The all ash/by-products unloading group consisting of all fly ash collection and transfer equipment conveyors, augers, piping and silos along with an unloading baghouse.	11-01-1991 / NA	NA
EUCOALPETCOKESTR	The coal and petroleum coke storage system consisting of all coal and coal/petroleum coke piles and handling equipment including augers, conveyors and hoppers up to Boiler #1 and Boiler #2.	01-01-1990 / NA	FGFUELSTORAGE

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EUWOODSTORAGE	The wood storage system consisting of all wood piles and handling equipment including augers, conveyors and hoppers up to Boiler #1 and Boiler #2.	01-01-1990 / NA	FGFUELSTORAGE
EUCDMTSTORAGE	The construction demolition material storage system consists of all construction demolition material piles and handling equipment including augers, conveyors and hoppers up to Boiler #1 and Boiler #2.	01-11-1996 / NA	FGFUELSTORAGE
EUEMERGEN	175 kilowatt (275 HP) natural gas-fired emergency generator.	01-01-1990 / NA	NA
EUFIREPUMP	139 kilowatt (187 HP) diesel-fired emergency fire pump.	01-01-1990 / NA	NA

EULIMESTORAGE
EMISSION UNIT CONDITIONS

DESCRIPTION

The lime storage and handling system consists of all lime handling and storage equipment including blowers, augers, conveyors, silos, and slurry tank up to the lime scrubbers.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Lime silo bin vent filter.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Particulate matter	0.03 grains per dry standard cubic foot of exhaust gases[2]	Test protocol*	EULIMESTORAGE	SC V.1 and SC V.2	**40 CFR 52.21(j) R 336.1331(1)(c)**
2. Visible emissions	5 percent opacity	6-minute average	EULIMESTORAGE	SC V.1	**40 CFR 52.21(j) R 336.1301(1)(c)**

*Test protocol shall specify averaging time

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Permittee shall not operate the lime storage and handling equipment unless the bin vent filter is installed, maintained and operating properly.[2] **(R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall perform and record the results of 6-minute non-certified visible emission observations of the lime handling bin vent filter at least once each time the silo is being filled. Records shall also be maintained in the event the silo is being filled during the nighttime and visible emission observations are not possible. The visible emission observation shall simply verify the presence of visible emissions and need not follow the procedures specified in USEPA Test Method 9. If visible emissions are observed, the permittee shall immediately implement the following procedures: **(R 336.1213(3))**
   a. If visible emissions are observed during the 6-minute non-certified visible emissions observation, discharge through the lime storage silo bin vent filter shall be halted as quickly as possible and the

permittee shall immediately initiate and document corrective actions. Upon recommencing discharge through the lime storage silo bin vent filter, another set of 6-minute visible emission observations shall be conducted in accordance with SC V.1, or

b. If visible emissions are observed during the 6-minute non-certified visible emissions observation, the permittee shall perform and record the results of a 15-minute USEPA Test Method 9 visible emission observation, and

c. If the results of the USEPA Test Method 9 visible emission observation indicate an exceedance of the visible emission limit in SC I.2, the permittee shall immediately initiate and document corrective actions.

2. The permittee shall conduct stack testing to determine particulate matter emission rates from EULIMESTORAGE upon request of the AQD District Supervisor. **(R 336.1213(3))**

VI. MONITORING/RECORDKEEPING

NA

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. The permittee shall submit two complete test protocols to the AQD, one to the Technical Programs Unit Supervisor and one to the District Supervisor for approval at least 30 days prior to the anticipated test dates for particulate matter. The protocol shall describe the test method(s) and the maximum routine operating conditions, as well as targets for key operational parameters associated with air pollution control equipment to be monitored and recorded during testing. **(R 336.2001(3))**

5. The permittee shall notify the AQD Technical Programs Unit Supervisor and the District Supervisor no less than 7 days prior to the anticipated test dates for PM. **(R 336.2001(4))**

6. The permittee shall submit two complete test reports of the test results for particulate matter to the AQD, one to the Technical Programs Unit Supervisor and one to the District Supervisor, within 60 days following the last date of the test. **(R 336.2001(5))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
NA	NA	NA	NA

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

EUASHUNLOAD
EMISSION UNIT CONDITIONS

DESCRIPTION

The ash/by-products unloading system consists of all fly ash collection and transfer equipment conveyors, augers, piping, and silos along with an unloading baghouse. It also includes all bottom ash handling equipment including augers, conveyors and silos on EUBOILER01 and EUBOILER02. A rotary unloader adds moisture to the ash/by-products from the silo and loads ash/by-products into dump trucks through an enclosed tube.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Ash silo bin vent filter, ash unloading baghouse, fly ash removal system baghouse, bottom ash system cyclone, and bottom ash removal system baghouse.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Particulate matter	0.03 grains per dry standard cubic foot of exhaust gas[2]	Test protocol*	EUASHUNLOAD	SC V.1 and SC V.2	**40 CFR 52.21(j) R 336.1331(1)(c)**
2. Visible emissions	5 percent opacity[2]	6-minute average	EUASHUNLOAD	SC V.1	**40 CFR 52.21(j) R 336.1301(1)(c)**

*Test protocol shall specify averaging time

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Permittee shall not operate the ash/by-products unloading, storage, and handling equipment unless the associated particulate matter emissions control equipment is installed and operating properly.[2] **(R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall perform and record the results of 6-minute non-certified visible emission observations of all emission points from EUASHUNLOAD at least once each time the silo is being filled. The visible emission observations shall simply verify the presence of visible emissions and need not follow the procedures specified in USEPA Test Method 9. If visible emissions are observed, the permittee shall immediately implement the following procedures: **(R 336.1213(3))**

a. If visible emissions are observed during the 6-minute non-certified visible emission observation, discharge through the associated baghouse or bin vent filter shall be halted as quickly as possible and the permittee shall immediately initiate and document corrective actions. Upon recommencing discharge through the lime storage silo bin vent filter, another set of 6-minute visible emission observations shall be conducted in accordance with SC V.1, or
b. If visible emissions are observed during the 6-minute non-certified visible emissions observations, the permittee shall perform and record the results of a 15-minute USEPA Test Method 9 visible emission observation, and
c. If the results of the USEPA Test Method 9 visible emission observations indicate an exceedance of the visible emission limit in SC I.2, the permittee shall immediately initiate and document corrective actions.

2. The Permittee shall conduct stack testing to determine particulate matter emission rates from EUASHUNLOAD upon request of the AQD District Supervisor. **(R 336.1213(3))**

VI. MONITORING/RECORDKEEPING

NA

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. The permittee shall submit two complete test protocols to the AQD, one to the Technical Programs Unit Supervisor and one to the District Supervisor for approval at least 30 days prior to the anticipated test dates for particulate matter. The protocol shall describe the test method(s) and the maximum routine operating conditions, as well as targets for key operational parameters associated with air pollution control equipment to be monitored and recorded during testing. **(R 336.2001(3))**

5. The permittee shall notify the AQD Technical Programs Unit Supervisor and the District Supervisor no less than 7 days prior to the anticipated test dates for PM. **(R 336.2001(4))**

6. The permittee shall submit two complete test reports of the test results for particulate matter to the AQD, one to the Technical Programs Unit Supervisor and one to the District Supervisor, within 60 days following the last date of the test. **(R 336.2001(5))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
NA	NA	NA	NA

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

EUEMERGEN
EMISSION UNIT CONDITIONS

DESCRIPTION

175 kW (275 HP) existing natural gas-fired emergency generator.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee may operate EUEMERGEN as necessary during emergencies with no time limit. **(40 CFR 63.6640(f)(1))**

2. The permittee shall minimize the time spent at idle and minimize start-up to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes. **(40 CFR 63.6625(h))**

3. The permittee must comply with the following operational requirements:
   a. Change oil and filter every 500 hours of operation or annually, whichever comes first, except as allowed in SC III.4;
   b. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace if necessary;
   c. Inspect all hoses and belts every 500 hours or operation or annually, whichever comes first, and replace if necessary.

   If EUEMERGEN is operated during an emergency and it is not possible to shut down the engine to perform the work practice standards on the schedule required work practice standard can be delayed until the emergency is over. The work practice should be performed as soon as practicable after the emergency has ended. **(40 CFR 63.6602, 40 CFR Part 63, Subpart ZZZZ Table 2c, Item 6)**

4. The permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirement in SC III.3. The oil analysis program must be performed at the same frequency specified for changing the oil in SC III.3. The oil analysis shall test for the following limits:
   a. Total Acid Number has increased by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from the Total Acid Number of the oil when new;
   b. Viscosity of the oil has changed by 20 percent from the viscosity of the oil when new;
   c. Percent water content (by volume) is greater than 0.5 percent.

   If any of the limits are exceeded, the permittee must change the oil within two days of receiving the results of the analysis. If the engine is not in operation when the results of the analysis are received, the permittee must change the oil within two days or before commencing operation, whichever is later. The analysis program must be part of the maintenance plan for EUEMERGEN. **(40 CFR 63.6625(j))**

5. The permittee must be in compliance with the emission limitations, operating limitations, and other requirements in 40 CFR Part 63, Subpart ZZZZ that apply to EUEMERGEN at all times. **(40 CFR 63.6605(a))**

6. The permittee at all times must operate and maintain EUEMERGEN in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the permittee to make any further efforts to reduce emissions if levels required by 40 CFR Part 63, Subpart ZZZZ have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the EUEMERGEN. **(40 CFR 63.6605(b))**

7. The permittee must operate and maintain EUEMERGEN 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. **(40 CFR 63.6625(e), 40 CFR 63.6640(a), 40 CFR Part 63,**
   Subpart ZZZZ, Table 6, Item 9)

8. The permittee may operate EUEMERGEN for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the engine manufacturer or vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing are limited to 100 hours per year. **(40 CFR 63.6640(f)(2)(i))**

9. The permittee may operate EUEMERGEN for up to 50 hours per engine per year in non-emergency situations, which are counted as part of the 100 hours of operation allowed under SC III.8. The 50 hours 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. **(40 CFR 63.6640(f)(3))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip EUEMERGEN with a non-resettable hour meter. **(40 CFR 63.6625(f))**

V. TESTING/SAMPLING

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall keep the following records: **(40 CFR 63.6655)**
   a. A copy of each notification and report submitted to comply with 40 CFR Part 63, Subpart ZZZZ, including all documentation supporting any initial Notification or Notification of Compliance Status, according to the requirements of 40 CFR 63.10(b)(2)(xiv).
   b. Records of the occurrence and duration of each malfunction of operation.

c. Records of actions taken during period of malfunctions to minimize emissions in accordance with 40 CFR 63.6605(b), including corrective actions to restore malfunctioning equipment to its normal or usual manner of operation.
d. Records of the maintenance conducted on EUEMERGEN in order to demonstrate that EUEMERGEN is operated and maintained according to the maintenance plan.
e. Records of the hours of operation recorded through the non-resettable hour meter. The permittee shall document how many hours were spent during emergency operation (including what classified the operation as an emergency) and how many hours were spent during non-emergency operation.
f. Records to demonstrate continuous compliance with the operating limitations in SC III.7.

2. The permittee shall keep records of the parameters that are analyzed as part of the oil analysis program in SC III.4, the results of the analysis, and the oil changes for the engine. **(40 CFR 63.6625(j))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i), 40 CFR 63.6640(b), 40 CFR 63.6650(f))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
NA	NA	NA	NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable requirements of the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63, Subparts A and ZZZZ for Stationary Reciprocating Internal Combustion Engine. **(40 CFR Part 63, Subparts A and ZZZZ)**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

EUFIREPUMP
EMISSION UNIT CONDITIONS

DESCRIPTION

139 kW (187 HP) existing diesel-fired emergency fire pump.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee may operate EUFIREPUMP as necessary during emergencies with no time limit. **(40 CFR 63.6640(f)(1))**

2. The permittee shall minimize the time spent at idle and minimize start-up to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes. **(40 CFR 63.6602, 40 CFR 63.6625(h), 40 CFR Part 63, Subpart ZZZZ, Table 2c, Item 1)**

3. The permittee must comply with the following operational requirements:
   a. Change oil and filter every 500 hours of operation or annually, whichever comes first, except as allowed in SC III.4;
   b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace if necessary;
   c. Inspect all hoses and belts every 500 hours or operation or annually, whichever comes first, and replace if necessary.

   If EUFIREPUMP is operated during an emergency and it is not possible to shut down the engine to perform the work practice standards on the schedule required, the work practice standard can be delayed until the emergency is over. **(40 CFR 63.6602, 40 CFR Part 63, Subpart ZZZZ Table 2c, Item 1)**

4. The permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirement in SC III.3. The oil analysis program must be performed at the same frequency specified for changing the oil in SC III.3. The oil analysis shall test for the following limits:
   a. Total Base Number is less than 30 percent of the Total Base Number of the oil when new;
   b. Viscosity of the oil has changed by 20 percent from the viscosity of the oil when new;
   c. Percent water content (by volume) is greater than 0.5 percent.

If any of the limits are exceeded, the permittee must change the oil within two days of receiving the results of the analysis. If the engine is not in operation when the results of the analysis are received, the permittee must change the oil within two days or before commencing operation, whichever is later. The analysis program must be part of the maintenance plan for EUFIREPUMP. **(40 CFR 63.6625(i))**

5. The permittee must be in compliance with the emission limitations, operating limitations, and other requirements in 40 CFR Part 63, Subpart ZZZZ that apply to EUFIREPUMP at all times. **(40 CFR 63.6605(a))**

6. The permittee at all times must operate and maintain EUFIREPUMP in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the permittee to make any further efforts to reduce emissions if levels required by 40 CFR Part 63, Subpart ZZZZ have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the EUFIREPUMP. **(40 CFR 63.6605(b))**

7. The permittee must operate and maintain EUFIREPUMP 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. **(40 CFR 63.6625(e), 40 CFR 63.6640(a), 40 CFR Part 63, Subpart ZZZZ, Table 6, Item 9)**

8. The permittee may operate EUFIREPUMP for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the engine manufacturer or vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing is limited to 100 hours per year. **(40 CFR 63.6640(f)(2)(i))**

9. The permittee may operate EUFIREPUMP for up to 50 hours per engine per year in non-emergency situations, which are counted as part of the 100 hours of operation allowed under SC III.8. **(40 CFR 63.6640(f)(3))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip EUFIREPUMP with a non-resettable hour meter. **(40 CFR 63.6625(f))**

V. TESTING/SAMPLING

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall keep the following records: **(40 CFR 63.6655)**
   a. A copy of each notification and report submitted to comply with 40 CFR Part 63, Subpart ZZZZ, including all documentation supporting any initial Notification or Notification of Compliance Status, according to the requirements of 40 CFR 63.10(b)(2)(xiv).
   b. Records of the occurrence and duration of each malfunction of operation.
   c. Records of actions taken during period of malfunctions to minimize emissions in accordance with 40 CFR 63.6605(b), including corrective actions to restore malfunctioning equipment to is normal or usual manner of operation.
   d. Records of the maintenance conducted on EUFIREPUMP in order to demonstrate that EUFIREPUMP is operated and maintained according to the maintenance plan.
   e. Records of the hours of operation recorded through the non-resettable hour meter. The permittee shall document how many hours were spent during emergency operation (including what classified the operation as an emergency) and how many hours were spent during non-emergency operation.
   f. Records to demonstrate continuous compliance with the operating limitations in SC III.7.

2. The permittee shall keep records of the parameters that are analyzed as part of the oil analysis program in SC III.4, the results of the analysis, and the oil changes for the engine. **(40 CFR 63.6625(j))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i), 40 CFR 63.6640(b), 40 CFR 63.6650(f))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
NA	NA	NA	NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable requirements of the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63, Subparts A and ZZZZ for Stationary Reciprocating Internal Combustion Engines. **(40 CFR Part 63, Subparts A and ZZZZ)**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

D. FLEXIBLE GROUP CONDITIONS

Part D outlines the terms and conditions that apply to more than one emission unit. The permittee is subject to the special conditions for each flexible group in addition to the General Conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply, NA (not applicable) has been used in the table. If there are no special conditions that apply to more than one emission unit, this section will be left blank.

FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGBOILERS	Boiler #1 and #2 and their associated dry scrubbing system and baghouse. Each boiler is a spreader-stoker firing configuration. The primary fuel is coal with the following supplemental fuels: wood and wood waste, construction/demolition material, petroleum coke, Tire Derived Fuel (TDF), and natural gas. The nominal heat input rating of each boiler is 384 MMBTU/hr including two low NOx natural gas-fired burners per boiler, with each burner rated at 100 MMBTU/hr.	EUBOILER01 EUBOILER02
FGFUELSTORAGE	Coal and coal/petroleum coke piles, wood piles, construction demolition material piles, and all fuel handling equipment including augers, conveyors, and hopper up to Boiler #1 and #2.	EUCOALPETCOKESTR EUWOODSTORAGE EUCDMTSTORAGE
FGMATS	*Common applicable Mercury and Air Toxics Standard requirements for EUBOILER01 and EUBOILER02, classified as existing coal-fired units not firing low rank virgin coal.*	*EUBOILER01* *EUBOILER02*

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FGBOILERS
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Boiler #1 and #2 and their associated dry scrubbing system and baghouse. Each boiler is a spreader-stoker firing configuration. The primary fuel is coal with the following supplemental fuels: wood and wood waste, construction/demolition material, petroleum coke, Tire Derived Fuel (TDF), and natural gas. The nominal heat input rating of each boiler is 384 MMBTU/hr including two low NOx natural gas-fired burners per boiler, with each burner rated at 100 MMBTU/hr.

Emission Units: EUBOILER01, EUBOILER02

POLLUTION CONTROL EQUIPMENT

Dry Scrubber #1, Dry Scrubber #2, Baghouse #1, and Baghouse #2, Low NOx natural gas-fired burners.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. PM	0.03 lb/MMBTU heat input[2]	Test Protocol*	EUBOILER01 EUBOILER02	SC V.1	**R 336.2810 40 CFR 60.42Da(a)**
2. PM	11.5 pph[2]	Test Protocol*	EUBOILER01 EUBOILER02	SC V.1	**R 336.2810**
3. Visible emissions	10 percent opacity[2,a]	6-minute average	EUBOILER01 EUBOILER02	SC VI.1	**R 336.2810 R 336.1301(1)(c)**
4. SO_2	0.5 lb/MMBTU heat input[2,b,c]	Based on a 30 day rolling average	EUBOILER01 EUBOILER02	SC VI.7, SC VI.9, SC VI.11	**R 336.2810 R 336.1401(1)**
5. SO_2	0.7 lb/MMBTU heat input[2]	Based on a 24 hour daily average	EUBOILER01 EUBOILER02	SC VI.7, SC VI.9, SC VI.12	**R 336.2810 R 336.1401(1)**
6. SO_2	6.45 tons/day[2]	Each Calendar day	FGBOILERS	SC VI.7, SC VI.10, SC VI.12	**R 336.2810**
7. SO_2	1681.9 tpy[2]	Based on a 12 month rolling time period as determined at the end of each calendar month	FGBOILERS	SC VI.7, SC VI.10, SC VI.12	**R 336.2810**
8. SO_2	10 percent of the potential SO_2 emission rate if the SO_2 emission rate is greater than or equal to 0.60 lb/MMBtu[2,c]	When combusting solid fuel or solid-derived fuel. Based on a 30 day rolling average	EUBOILER01 EUBOILER02	SC VI.7, SC VI.9, SC VI.16	**40 CFR 60.43Da(a)(1) 40 CFR 60.43Da(g) R 336.2810**
9. SO_2	30 percent of the potential SO_2 emission rate if the SO_2 emission rate is less than 0.60 lb/MMBtu[2,c]	When combusting solid fuel or solid-derived fuel. Based on a 30-day rolling average	EUBOILER01 EUBOILER02	SC VI.7, SC VI.9, SC VI.16	**40 CFR 60.43Da(a)(2), 40 CFR 60.43Da(g)**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
10. SO_2	Variable percentage of the potential SO_2 emission rate[2,c]	When combusting solid fuel or solid-derived fuel and gaseous fuel simultaneously. Based on a 30-day rolling average	EUBOILER01 EUBOILER02	SC VI.7, SC VI.9, SC VI.16	**40 CFR 60.43Da(g)**
11. SO_2	10 percent of the potential SO_2 emission rate if the SO_2 emission rate is greater than or equal to 0.20 lb/MMBtu[2,c]	When combusting natural gas only. Based on a 30-day rolling average	EUBOILER01 EUBOILER02	SC VI.7, SC VI.9, SC VI.16	**40 CFR 60.43Da(b)(1), 40 CFR 60.43Da(g)**
12. SO_2	100 percent of the potential SO_2 emission rate if the SO_2 emission rate is less than 0.20 lb/MMBtu[2,c]	When combusting natural gas only. Based on a 30-day rolling average	EUBOILER01 EUBOILER02	SC VI.7, SC VI.9, SC VI.16	**40 CFR 60.43Da(b)(2) 40 CFR 60.43Da(g)**
13. NO_x	0.20 lb/MMBtu heat input[2]	Based on a 30 day rolling average when firing natural gas only.	EUBOILER01 EUBOILER02	SC VI.7, SC VI.9, SC VI.11	**40 CFR 60.44Da(a)(1)**
14. NO_x	Not to exceed the maximum emission rate of 0.60 lb/MMBTU heat input[2,e]	Pro-rated for fuel mix; Based on a 30 day rolling average	EUBOILER01 EUBOILER02	SC VI.7, SC VI.9, SC VI.11	**40 CFR 60.44Da(a)(1) R 336.2810**
15. NO_x	2018 tpy[2]	Based on a 12 month rolling time period as determined at the end of each calendar month	FGBOILERS	SC VI.7, SC VI.10, SC VI.13	**R 336.2810**
16. CO	0.3 lb/MMBTU heat input[2]	Based on a 24 hour rolling time period determined each operating hour, excluding periods of start-up and shutdown[d]	EUBOILER01 EUBOILER02	SC VI.8, SC VI.9, SC VI.14	**R 336.2810**
17. CO	115.2 pph[2]	Based on a 24 hour rolling time period determined each operating hour	EUBOILER01 EUBOILER02	SC VI.8, SC VI.10, SC VI.14	**R 336.2810**
18. CO	1009.2 tpy[2]	Based on a 12 month rolling time period as determined at the end of each calendar month	FGBOILERS	SC VI.8, SC VI.10, SC VI.15	**R 336.2810**
19. Total non-methane hydrocarbons (NMHC)	4.6 pph[2]	Test Protocol*	EUBOILER01 EUBOILER02	SC V.2	**R 336.1702(a)**

* Test Protocol shall specify averaging time

[a] In accordance with Rule 213(2) and Rule 213(6), compliance with this streamlined visible emissions limit shall be considered compliance with the visible emissions limit established by R 336.2810 and R 336.1301(1)(c); and also compliance with the visible emissions limit in 40 CFR 60.42Da(b), an additional applicable requirement which has been subsumed within this condition.

[b] In accordance with Rule 213(2) and Rule 213(6), compliance with this streamlined SO2 limit shall be considered compliance with the SO2 emission limit established by R 336.2810 and R 336.1401(1); and also compliance with the SO2 limit in 40 CFR 60.43Da(a), 40 CFR 60.43Da(b), 40 CFR 60.43Da(g), and 40 CFR 60.43Da(h), additional applicable requirements which have been subsumed within this condition.

[c] The potential SO2 emission rate means the theoretical emissions, in pounds per MMBTU heat input, that would result from the combustion of a fuel in an uncleaned state without any emission control system.

[d] For the purpose of FGBOILERS, start-up and shutdown are defined in the maintenance and malfunction abatement management plan approved by the District Supervisor.

[e] The applicable NOX emissions limit when multiple fuels are combusted simultaneously may be less than 0.60 lb/MMBtu. The emission limit is defined by the calculation in 40 CFR 60.44Da(a)(2) which is included in Appendix 7 of this ROP.

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Bituminous coal	3 percent, by weight, maximum sulfur content[2]	Based on a heat input value of 12,200 Btu per pound of coal	FGBOILERS	SC VI.23	**R 336.2810**
2. Wood and wood waste (not including C/D material)	820,000 pounds/day charge rate[1]	Steam generating unit operating day[a]	FGBOILERS	SC VI.17	**R 336.1224 R 336.1225**
3. TDF	2 tons/hour charge rate[1]	Based on a daily average	EUBOILER01 EUBOILER02	SC VI.18	**R 336.1224 R 336.1225**
4. Construction/ demolition material (C/D material)	200,000 pounds/day charge rate[1]	Steam generating unit operating day[a]	EUBOILER01 EUBOILER02	SC VI.19	**R 336.1224 R 336.1225**
5. C/D material	18,282 tpy charge rate[1]	12 month rolling time period as determined at the end of each calendar month	EUBOILER01 EUBOILER02	SC VI.19	**R 336.1224 R 336.1225**
6. Petroleum coke	130,800 pounds/day charge rate[1]	Steam generating unit operating day[a]	EUBOILER01 EUBOILER02	SC VI.20	**R 336.1224 R 336.1225**
7. Natural gas	196,080 cubic feet per hour firing rate[1]	Material limit is based on an average natural gas higher heating value of 1,020 Btu/scf.	EUBOILER01 EUBOILER02	SC VI.22	**R 336.1224 R 336.1225**

[a] Steam generating unit operating day means a 24 hour period between 12:00 midnight and the following midnight during which any fuel and/or material is combusted at any time in either of the boilers.

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate the boilers unless a maintenance and malfunction abatement management plan for the boilers is implemented and maintained.[2] **(R 336.1910, R 336.1911, R 336.2804)**

2. The permittee shall not operate the boilers unless the associated baghouses and SO_2 scrubbers are installed and operating properly in accordance with the approved maintenance management plan for the boilers.[2] **(R 336.1910)**

3. The permittee shall install, maintain, and operate the low nitrogen oxide (NOx) natural gas-fired burners in FGBOILERS in a satisfactory manner.[2] **(R 336.1910)**

4. The permittee shall not operate FGBOILERS unless emissions are minimized during all startups and shutdowns.[2] **(40 CFR 63.10011(f)(1), R 336.1911, R 336.1912, R 336.2802)**

5. The continuous opacity monitoring system (COMS) is to be operated and data recorded during all periods of operation including periods of start-up, shutdown, malfunction or emergency conditions, except for continuous monitor system breakdowns, repairs, calibration checks, and zero span adjustments.[2] **(R 336.1301(1)(c), R 336.2810)**

6. The continuous SO_2 emissions, NO_x emissions, and carbon dioxide (CO_2) or oxygen (O_2) concentration monitoring systems are to be operated and data recorded during all periods of operation including periods of start-up, shutdown, malfunction or emergency conditions, except for continuous monitor system breakdowns, repairs, calibration checks, and zero span adjustments.[2] **(40 CFR 60.49Da(e))**

7. The continuous carbon monoxide (CO) emission monitoring systems are to be operated and data recorded during all periods of operation including periods of start-up, shutdown, malfunction or emergency conditions, except for continuous monitor system breakdowns, repairs, calibration checks, and zero span adjustments.[2] **(R 336.2810)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the SO_2 and NOx emissions and O_2 or CO_2 concentrations from EUBOILER01 and EUBOILER02 on a continuous basis (CEMS).[2] **(R 336.1205, R 336.2803, R 336.2804, 40 CFR 60.49Da(b), (c), and (d))**

2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the CO emissions and flow from EUBOILER01 and EUBOILER02 on a continuous basis (CEMS).[2] **(R 336.1205, R 336.2803, R 336.2804)**

3. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the visible emissions from EUBOILER01 and EUBOILER02 on a continuous basis (COMS).[2] **(R 336.1205, R 336.1301, 40 CFR 60.49Da(a))**

4. The procedures under 40 CFR 60.13 and 40 CFR Part 60, Appendix B, Performance Specification 1 shall be followed for installation, initial evaluation, and operation of the COMS.[2] **(40 CFR 60.13, R 336.2810, 40 CFR 60.49Da(a))**

5. The procedures under 40 CFR 60.13 and Performance Specification 2 of Appendix B to 40 CFR Part 60 or the procedures in 40 CFR Part 75, Appendices A and B shall be followed for installation, initial evaluation, and operation of the NO_x and SO_2 Continuous Emission Monitoring System (CEMS).[2] **(40 CFR 60.49Da(w))**

6. The procedures under 40 CFR 60.13 and 40 CFR Part 60, Appendix B, Performance Specification 3, or the procedures in 40 CFR Part 75, Appendices A and B shall be followed for installation, initial evaluation, and operation of the O_2 or CO_2 CEMS.[2] **(40 CFR 60.49Da(w))**

7. The procedures under 40 CFR 60.13 and 40 CFR Part 60, Appendix B, Performance Specification 6 shall be followed for installation, initial evaluation, and operation of the flow rate CEM. As an alternative to Performance Specification 6, the permittee may use the procedures set forth in 40 CFR Part 75, Appendices A and B.[2] **(R 336.2810))**

8. The span value for the NO_x CEMS shall be 1,000 ppm or an alternate value as determined in accordance with 40 CFR Part 75, Appendix A, Section 2.1.2.[2] **(40 CFR 60.49Da(i)(3))**

9. The span value for the SO_2 CEMS at the inlet to the SO_2 control device shall be 125 percent of the maximum estimated hourly potential emissions of the fuel fired and the outlet of the SO_2 control device shall be 50 percent of the maximum estimated hourly potential emissions of the fuel fired. If electing to determine the NOx span value in accordance with 40 CFR Part 75, then the SO_2 span values shall be determined according to 40 CFR Part 75, Appendix A, Section 2.1.1.[2] **(40 CFR 60.49Da(i)(5))**

10. The span value for the CO CEMS shall be approximately 200 percent of the expected instrument data display output corresponding to the emission standard for the source. **(R 336.1213(3)(b), R 336.2154)**

11. The span value for the COMS shall be approximately 200 percent of the expected instrument data display output corresponding to the emission standard for the source. **(R 336.1213(3)(b))**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The Permittee shall conduct stack testing to determine particulate emission rates from EUBOILER01 and EUBOILER02 at least once every five years. The stack testing plan shall include fuel burning conditions which will represent worst case emissions for the pollutants listed in this condition.[2] **(R 336.2001, R 336.2003, R 336.2004, R 336.2810, 40 CFR 60.8, 40 CFR 60.50Da)**

2. The Permittee shall conduct stack testing to determine NMHC emission rates from EUBOILER01 and EUBOILER02 at least once every five years. The stack testing plan shall include fuel burning conditions which will represent worst case emissions for the pollutants listed in this condition.[2] **(R 336.1702, R 336.2001, R 336.2003, R 336.2004, R 336.2810)**

3. The permittee shall perform the Quality Assurance Procedures of the COMS set forth in 40 CFR Part 60, Appendix F, Procedure 3. **(R 336.1213(3), 40 CFR Part 60, Appendix F)**

4. The permittee shall perform the Quality Assurance Procedures of the CEMS set forth in 40 CFR Part 60, Appendix F, Procedure 1. As an alternative, the permittee may perform the Quality Assurance Procedures for CEMS set forth in 40 CFR Part 75, Appendix B. **(R 336.1213(3), 40 CFR 60.49Da(w), 40 CFR Part 60, Appendix F)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall monitor and record the visible emissions from EUBOILER01 and EUBOILER02 on a continuous basis in a manner and with instrumentation acceptable to the AQD. The permittee shall operate each COMS to meet the timelines, requirements and reporting below, and shall use the COMS data for determining compliance. Monitoring data shall be kept on file and be made available to the AQD upon request.[2] **(R 336.2810, 40 CFR 60.48Da(q), 40 CFR 60.49Da(a)(1), 40 CFR Part 60, Appendix B (PS1), 40 CFR 64.6(c)(1)(iii))**

2. The permittee shall utilize the COMS-recorded opacity as an indicator of the proper functioning of the baghouses. The appropriate range of opacity defining proper function of the baghouses is 0-7 percent opacity. The permittee shall properly maintain the monitoring system including keeping necessary parts for routine repair of the monitoring equipment. **(40 CFR 64.6(c)(1)(i and ii), 40 CFR 64.7(b))**

3. The permittee shall use the COMS to assure compliance with the PM limit. An excursion for PM shall be two consecutive 1-hour block average opacity values greater than 7 percent. This condition does not affect compliance with R 336.1301. **(40 CFR 64.6(c)(2))**

4. Upon detecting an excursion or exceedance, the permittee shall restore operation of the pollutant specific emission unit, including the control device and associated capture system, to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices or minimizing emissions. The response shall include minimizing the period of any startup, shutdown, or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance. In response to an excursion of more than 7 percent opacity based on two consecutive 1-hour block averages, the permittee shall conduct an investigation and take actions as specified in the AQD approved Maintenance Management Plan. **(40 CFR 64.7(d))**

5. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the permittee shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant specific emission unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for 40 CFR Part 64, compliance including data averages and calculations or fulfilling a minimum data availability requirement if applicable. The permittee shall use all the data collected, during all other periods, in assessing the operation of the control device and associated control equipment. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. **(40 CFR 64.6(c)(3), 40 CFR 64.7(c))**

6. The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan and any activities undertaken to implement a quality improvement plan, and other information such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions. **(40 CFR 64.9(b)(1))**

7. The Permittee shall monitor and record the SO_2 and NOx emissions from EUBOILER01 and EUBOILER02 on a continuous basis in a manner and with instrumentation acceptable to the AQD. Emission data shall be obtained for at least 18 hours in at least 22 out of 30 successive boiler operating days. The SO_2 emissions are to be monitored at both the inlet and the outlet of the SO_2 control device.[2] **(R 336.2810, 40 CFR 60.49Da(b), (c), and (f))**

8. The Permittee shall monitor and record the CO emissions from EUBOILER01 and EUBOILER02 on a continuous basis in a manner and with instrumentation acceptable to the AQD.[2] **(R 336.2810)**

9. The Permittee shall monitor and record the CO_2 or O_2 concentrations in the flue gas from each of the EUBOILER01 and EUBOILER02 on a continuous basis in a manner and with instrumentation acceptable to the AQD. Emission data shall be obtained for at least 18 hours in at least 22 out of 30 successive boiler operating days.[2] **(40 CFR 60.49Da(d) and (f))**

10. The Permittee shall monitor and record the exhaust gas flow rate from EUBOILER01 and EUBOILER02 on a continuous basis in a manner and with instrumentation acceptable to the AQD. The permittee shall calibrate, maintain, and operate each flow rate CEMS in accordance with the procedures set forth in 40 CFR Part 75, Appendices A and B. Monitoring data shall be kept on file and made available to the AQD upon request.[2] **(R 336.2810)**

11. The Permittee shall use CEMS data to calculate and record the SO_2 and NOx emission rates from EUBOILER01 and EUBOILER02 in pounds per MMBTU heat input based on a 30 day rolling average. The SO_2 and NOx emissions shall be determined by calculating the arithmetic average of all hourly emission rates for SO_2 and NOx for the 30 successive boiler operating days.[2] **(R 336.2810, 40 CFR 60.48Da(d))**

12. The Permittee shall use hourly SO_2, O_2 or CO_2 concentrations, and exhaust flow rate CEMS data to calculate and record the SO_2 emission rate from EUBOILER01 and EUBOILER02 in pounds per MMBTU heat input based on a 24 hour daily average, tons per calendar day, and tons per 12 month rolling time period.[2] **(R 336.2810)**

13. The permittee shall use hourly NOx, O_2 or CO_2 concentrations, and exhaust flow rate CEMS data to calculate and record the NOx mass emission rate from EUBOILER01 and EUBOILER02 on an hourly basis and tons per 12-month rolling time period basis.[2] **(R 336.2810)**

14. The Permittee shall use hourly CO, O_2 or CO_2 concentrations, and exhaust flow rate CEMS data to calculate and record the CO emission rates from EUBOILER01 and EUBOILER02 in pounds per MMBTU heat input based on a 24 hour rolling time period (except for data obtained during periods of startup and shutdown) and pounds per hour based on a 24 hour rolling time period determined each operating hour. **(R 336.2810)**

15. The Permittee shall use hourly CO and exhaust flow rate CEMS data to calculate and record the CO mass emission rates from EUBOILER01 and EUBOILER02 on an hourly basis and tons per 12 month rolling time period basis.[2] **(R 336.2810)**

16. The Permittee shall use CEMS data to calculate and record the SO_2 percentage reduction from EUBOILER01 and EUBOILER02 based on the average inlet and outlet SO_2 emission rates for each 30 successive boiler operating days. **(R 336.2810, 40 CFR 60.48Da(e))**

17. The permittee shall monitor and record the actual charge rate of wood fuel in pounds per steam generating unit operating day for both boilers combined. The permittee shall keep a record of the wood fuel charge rates on file and shall be made available to the AQD upon request.[1] **(R 336.1224, R 336.1225)**

18. The permittee shall monitor and record the TDF charge rate in tons per hour as a daily average for each boiler. Records shall be kept on file and made available to the AQD upon request.[1] **(R 336.1224, R 336.1225)**

19. The permittee shall monitor and record for each boiler, the actual charge rate of C/D material in pounds per steam generating unit operating day per boiler and tons per year based on a 12-month rolling time period as determined at the end of each calendar month. The Permittee shall keep a record of the C/D material charge rates on file and such record shall be made available to AQD, upon request.[1] **(R 336.1224,R 336.1225)**

20. If the permittee elects to accept deliveries of any petroleum coke at the facility, the permittee shall monitor, calculate, and record for each boiler the actual charge rate of petroleum coke in pounds per steam generating unit operating day using the applicable equation listed in Appendix 7. The permittee shall keep a record of the data and calculations used to determine the petroleum coke charge rates on file and such record shall be made available to the AQD upon request.[1] **(R 336.1224, R 336.1225)**

21. The Permittee shall monitor and record the coal usage rate in each boiler EUBOILER01 and EUBOILER02 on a daily basis. All such records shall be kept on file and made available to the Air Quality Division upon request.[1] **(R 336.1224, R 336.1225)**

22. The permittee shall monitor and record the natural gas usage rate in each boiler EUBOILER01 and EUBOILER02 in cubic feet per operating day per boiler on a daily basis. All such records shall be kept on file and made available to the Air Quality Division upon request.[1] **(R 336.1224, R 336.1225)**

23. The permittee shall maintain records of the sulfur content of each shipment of coal.[2] **(R 336.2810)**

24. The permittee shall monitor and record, in a satisfactory manner, the boiler steam pressure in psig on an hourly basis during all operations including start-up and shut-down operations for each boiler in FGBOILERS.[2] **(R 336.2810)**

See Appendix 7

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i), 40 CFR 63.10031(e))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. Each semiannual report of monitoring and deviations shall include the summary information on the number, duration and cause of excursions and/or exceedances and the corrective actions taken. If there were no excursions and/or exceedances in the reporting period, then this report shall include a statement that there were no excursions and/or exceedances. **(40 CFR 64.9(a)(2)(i))**

5. Each semiannual report of monitoring and deviations shall include summary information on monitor downtime. If there were no periods of monitor downtime in the reporting period, then this report shall include a statement that there were no periods of monitor downtime. **(40 CFR 64.9(a)(2)(ii))**

6. Each semiannual report of monitoring and deviations shall include a description of the actions taken to implement a Quality Improvement Plan (QIP) during the reporting period (if appropriate). If a QIP has been completed the report shall include documentation that the plan has been implemented and if it has reduced the likelihood of excursions or exceedances. **(40 CFR 64.9(a)(2)(iii))**

7. If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the permittee shall promptly notify the AQD and if necessary, submit a proposed modification of the CAM Plan to address the necessary monitoring changes. Such a modification may include but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring or additional parameters. **(40 CFR 64.7(e))**

8. No less than 30 days prior to PM or NMHC testing, a complete stack testing protocol shall be submitted to the AQD District Supervisor and Technical Programs Unit Supervisor for review and approval. The protocol shall describe the test method(s) and the maximum routine operating conditions including fuels that will be burned and targets for key operational parameters associated with air pollution control equipment to be monitored and recorded during testing.[2] **(R 336.2001(3))**

9. The permittee shall notify the AQD Technical Programs Unit Supervisor and the District Supervisor no less than 7 days prior to the anticipated test dates for PM and NMHC.[2] **(R 336.2001(4))**

10. Verification of PM or NMHC rates includes the submittal of a complete report of the test results within 60 days after the last date of the test.[2] **(R 336.2001(5))**

11. For CEMS relative accuracy test audits, the permittee shall submit two complete test protocols to the AQD, one to the Technical Programs Unit Supervisor and one to the District Supervisor, for approval at least 30 days prior to the anticipated test date. The protocol shall describe reference monitors test methods; the make, model and serial number of each CEMS tested; the operation level(s) at which testing will occur as defined in 40 CFR Part 75, Appendix A, Section 6.5.2.1; and the units of measure used for each relative accuracy test audit. **(R 336.1213(3))**

12. Any daily usage rates that exceed the allowed charge rates specified in this permit for wood fuel, TDF, C/D material, petroleum coke, or natural gas shall be reported to the District Supervisor, Air Quality Division, by the 30th day of the succeeding calendar month[1]. **(R 336.1224, R 336.1225)**

13. The permittee shall report the results of the quality assurance procedures of the CEMS set forth in 40 CFR Part 60, Appendix F, Procedure 1 of to the AQD District Supervisor within the quarterly EER for the quarter in which the audit is conducted. **(40 CFR 60 Appendix B, Procedure 1, R 336.1213(3))**

14. The permittee shall submit the results of the quality assurance procedures of the COMS set forth in 40 CFR Part 60, Appendix F, Procedure 3 to the AQD District Supervisor within the quarterly EER for the quarter in which the audit is conducted. **(40 CFR 60, Appendix B, Procedure 3, R 336.1213(3))**

15. Quarterly EERs of SO_2, NO_x, and opacity data shall be submitted, in a format acceptable to the AQD District Supervisor, within 30 days following the end of the quarter that the data was collected. The EER shall include the following:[2] **(40 CFR 60.51Da(b), 40 CFR 60.51Da(i), 40 CFR 60.7, 40 CFR 52.21(j))**
    a. Calendar date.
    b. Average SO_2 and NO_x emission rates for each 30 successive boiler operating days, ending with the last 30-day period in the quarter.
    c. Percent reduction of the potential combustion concentration of SO_2 for each 30 successive boiler operating days, ending with the last 30-day period of the quarter.
    d. Each exceedance above the limits specified in the conditions of this permit which includes the date, time, and magnitude.
    e. Specific identification of each period of excess emissions that occur during startup, shutdown, and malfunction of FGBOILERS.
    f. Reasons for non-compliance with the emission limits.
    g. Periods of monitoring system downtime.
    h. Corrective actions taken.
    i. Total operating time of FGBOILERS.
    j. Identification of the boiler operating days for which pollutant or diluent data have not been obtained by an approved method for at least 75 percent of the hours of operation.
    k. Identification of "F" factor used for calculations, method of determination, and type of fuel combusted;
    l. Identification of the times when the pollutant concentration exceeded full span of the CEMS.
    m. Description of any modifications to CEMS which could affect the ability of the CEMS to comply with Performance Specifications 2 or 3.
    n. If no exceedance or monitor downtime occurred during the reporting period, the permittee shall report such.

16. Quarterly EERs and summary reports, consistent with the requirements in 40 CFR 60.7(c) and (d), shall be submitted in a format acceptable to the AQD District Supervisor within 30 days following the end of the quarter the data was collected for all CO CEMS equipment. The EER shall include each occurrence of all excursions and the magnitude of the excess emissions of the specified permit limit; the cause of the excess emissions periods of monitoring downtime; and any corrective action taken and the total operating time for the source. If no exceedances or monitoring downtime occurred during the reporting period, the permittee shall report such. **(R 336.1213(3))**

17. For any periods for which opacity, SO_2, or NO_x emission data are not available; the permittee shall submit a signed statement to the AQD District Supervisor, on a calendar quarter basis, indicating if any changes were made in operation of the emission control system during the period of data unavailability. Operations of FGBOILERS during period of data unavailability are to be compared with operation of FGBOILERS before and following the period of data unavailability. **(40 CFR 60.51Da(f))**

18. The permittee shall submit a signed statement to the AQD District Supervisor, on a calendar quarter basis, indicating whether: **(40 CFR 60.51Da(h))**
    a. The required CEMS calibration, span, and drift checks or other periodic audits have or have not been performed as specified.
    b. The data used to show compliance was or was not obtained in accordance with approved methods and procedures of this part and is representative of FGBOILER performance.
    c. The minimum data requirements have or have not been met; or, the minimum data requirements have not been met for errors that were unavoidable.
    d. Compliance with the standards has or has not been achieved during the reporting period.

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVBOILER01	76[2]	250[2]	**R 336.1225, R 336.2803, R 336.2804**
2. SVBOILER01	76[2]	250[2]	**R 336.1225, R 336.2803, R 336.2804**

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable requirements of 40 CFR Part 64. **(40 CFR Part 64)**

2. Permittee shall not burn any C/D materials in the boilers except that which meets the requirements specified in the C/D Waste Wood Monitoring Plan that has been submitted to and approved by the Air Quality Division district supervisor. For purposes of this permit, C/D waste wood and C/D materials are the same.[1] **(R 336.1225)**

3. The permittee shall provide written notification of construction and operation to comply with the federal Standards of Performance for New Stationary Sources, 40 CFR 60.7. The permittee shall submit this notification to the AQD District Supervisor within the time frames specified in 40 CFR 60.7. **(40 CFR 60.7)**

4. The permittee shall comply with all applicable requirements of 40 CFR Part 63, Subpart UUUUU - National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units. **(40 CFR Part 63, Subpart UUUUU)**

5. The permittee shall comply with all provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60, Subparts A and Da, as they apply to each boiler of FG-BOILERS. **(40 CFR Part 60 Subparts A & Da)**

6. The permittee shall comply with the provisions of the Transport Rule NOX Annual Trading Program, as specified in 40 CFR Part 97, Subpart AAAAA, and identified in Appendix 9. **(40 CFR Part 97, Subpart AAAAA)**

7. The permittee shall comply with the provisions of the Transport Rule NOX Ozone Trading Program, as specified in 40 CFR Part 97, Subpart *EEEEE*~~BBBBB~~, and identified in Appendix 9. **(40 CFR Part 97, Subpart BBBBB)**

8. The permittee shall comply with the provisions of the Transport Rule SO2 Group 1 Trading Program, as specified in 40 CFR Part 97, Subpart CCCCC, and identified in Appendix 9. **(40 CFR Part 97, Subpart CCCCC)**

Comment [JMP1]: Starting with the 2017 NOx ozone control period, 40 CFR Part 97, Subpart BBBBB (i.e., Group 1) has been superseded by 40 CFR Part 97, Subpart EEEEE (i.e., Group 2) for affected sources located in Michigan.

Footnotes:
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FGFUELSTORAGE
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Coal and coal/petroleum coke piles, wood piles, construction demolition material piles, as applicable, and all fuel handling equipment including augers, conveyors, and hopper up to Boiler #1 and #2.

Emission Units: EUCOALPETCKSTORAGE, EUCDMTSTORAGE, EUWOODSTORAGE

POLLUTION CONTROL EQUIPMENT

Wood handling baghouse

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Visible Emissions	5 percent opacity[2,a]	6-minute average	EUCOALPETCKSTORAGE	SC V.1 SC V.2	**40 CFR 52.21(j)** **R 336.1301(1)(c)**
2. PM	0.10 lbs/1,000 lbs exhaust gas	NA	EUWOODSTORAGE	SC V.1	**R 336.1331(1)(a)**

[a] In accordance with Rule 213(2) and Rule 213(6), compliance with this streamlined visible emissions limit shall be considered compliance with the visible emissions limit established by **40 CFR 52.21(j)** and **R 336.1301(1)(c)**; and also compliance with the visible emissions limit in **40 CFR 60.254(a)**, an additional applicable requirement which has been subsumed within this condition.

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall perform and record the results of a 6-minute non-certified visible emission check on EUCOALPETCKSTORAGE, EUCDMTSTORAGE, and EUWOODSTORAGE at least once per operating day. The visible emission check shall simply verify the presence of visible emissions and need not follow the procedures specified in USEPA Test Method 9. Each visible emission check shall be taken during routine operating conditions. If visible emissions are observed, the permittee shall immediately implement the following procedures: **(R 336.1213(3))**
   a. If visible emissions are observed during the 6-minute non-certified visible emissions observation, discharge through the associated baghouse or material handling operation shall be halted as quickly as

possible and the permittee shall immediately initiate and document corrective actions. Upon recommencing discharge through the baghouse or startup material handling operation, another sir of visible emission observations shall be conducted in accordance with SC V.1, or

b. If visible emissions have been observed during the 6-minute non-certified visible emission check, the permittee shall perform and record the results of a 15-minute USEPA Test Method 9 visible emission observation, and

c. If the results of the USEPA Test Method 9 visible emission observation indicate a violation of the opacity standard, the permittee shall immediately initiate corrective actions and document the corrective actions taken.

2. The permittee shall determine compliance with the applicable 40 CFR Part 60, Subpart Y opacity standards for EUCOALPETCKSTORAGE, using the procedures in 40 CFR 60.257(a), upon request of the AQD District Supervisor. **(40 CFR 60.8, 40 CFR 60.255(a))**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
NA	NA	NA	NA

IX. OTHER REQUIREMENT(S)

1. Any C/D materials that do not meet the requirements in the "C/D Waste Wood Monitoring Plan" which has been submitted to and approved by the AQD, shall be returned to the supplier or disposed of in accordance with federal and state of Michigan laws for solid waste disposal.[1] **(R 336.1225, R 336.1901)**

2. The permittee shall comply with the applicable requirements of 40 CFR Part 60, Subpart Y – Standards of Performance for Standards of Performance for Coal Preparation and Processing Plants. **(40 CFR Part 60, Subpart Y)**

Footnotes:
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FGMATS
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

40 CFR Part 63, Subpart UUUUU (Mercury and Air Toxics Standards or MATS) requirements for existing coal-fired electric utility steam generating unit(s) (EGU) rated more than 25 megawatts electric (MWe) that serve(s) a generator producing electricity for sale and designed to burn coal that is not low rank virgin coal (calorific value of ≥ 8,300 Btu/pound). Boiler #1 and #2 and their associated dry scrubbing system and baghouse. Each boiler is a spreader-stoker firing configuration. The primary fuel is coal with the following supplemental fuels: wood and wood waste, construction/demolition material, petroleum coke, Tire Derived Fuel (TDF), and natural gas. The nominal heat input rating of each boiler is 384 MMBTU/hr including two low NOx natural gas-fired burners per boiler, with each burner rated at 100 MMBTU/hr.

Emission Units: *EUBOILER01, EUBOILER02*

POLLUTION CONTROL EQUIPMENT

Dry Scrubber #1, Dry Scrubber #2, Baghouse #1, and Baghouse #2, Low NOx natural gas-fired burners

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Filterable PM	0.030 lb/MMBtu*	Triennial Stack Test +	EUBOILER01 EUBOILER02	SC V.1, SC V.3	40 CFR 63.9991, 40 CFR Part 63, Subpart UUUUU, Table 2.1.a
2. SO_2	0.20 lb/MMBtu*	30-boiler operating day rolling arithmetic average updated at the end of each new boiler operating day	EUBOILER01 EUBOILER02	SC VI.4	40 CFR 63.9991, 40 CFR Part 63, Subpart UUUUU, Table 2.1.b
3. Mercury (Hg)	1.2 lb/TBtu*	Annual Stack Test +	EUBOILER01 EUBOILER02	SC V.2, SC V.4	40 CFR 63.9991, 40 CFR Part 63, Subpart UUUUU, Table 2.1.c

** The emission limits apply at all times except during startup and shutdown*
+ If the unit(s) no longer meets the requirement for LEE status, the unit(s) will comply by stack testing quarterly or by quarterly stack testing until a continuous monitoring system has been installed, certified, and is operating.

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II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. *The permittee shall conduct a tune-up of each emission unit of FGMATS burner(s) and combustion controls, as applicable, at least every 36 calendar months, or each 48 calendar months if neural network combustion optimization software is employed, as specified in 40 CFR 63.10021(e).* ***(40 CFR 63.10000(e), 40 CFR 63.10006(i), 40 CFR 63.10021(e))***

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2. *For the startup of any emission unit of FGMATS which will comply using paragraph (1) of the definition of "startup" in 40 CFR 63.10042, the permittee must use clean fuels as defined in 40 CFR 63.10042 for ignition. Once the emission unit(s) of FGMATS convert(s) to firing coal, residual oil, or solid oil-derived fuel, the permittee must engage all the applicable control technologies except dry scrubber and SCR. The permittee must start the dry scrubber and SCR systems, if present, appropriately to comply with relevant standards applicable during normal operation. The permittee must comply with all applicable emission limits at all times except for periods that meet the applicable definitions of startup and shutdown in 40 CFR Part 63, Subpart UUUUU.* ***(40 CFR 63.10042, 40 CFR Part 63, Subpart UUUUU, Table 3)***

3. *During shutdown of any emission unit of FGMATS while firing coal, residual oil, or solid oil-derived fuel, the permittee must vent emissions to the main stack(s) and operate all applicable control devices and continue to operate those control devices after the cessation of coal, residual oil, or solid oil-derived fuel being fed into the applicable emission unit(s) of FGMATS and for as long as possible thereafter considering operational and safety concerns. In any case, the permittee must operate their controls when necessary to comply with other standards made applicable to the FGMATS by a permit limit or a rule other than 40 CFR Part 63, Subpart UUUUU and that require operation of the control devices. If, in addition to the fuel used prior to initiation of shutdown, another fuel must be used to support the shutdown process, that additional fuel must be one or a combination of the clean fuels defined in 40 CFR 63.10042 and must be used to the maximum extent possible taking into account considerations such as not compromising boiler or control device integrity.* ***(40 CFR 63.10042, 40 CFR Part 63, Subpart UUUUU, Table 3)***

4. *The emission limits and operating limits in 40 CFR Part 63, Subpart UUUUU apply at all times except during periods of startup and shutdown; however, the applicable work practice requirements, which are specified in items 3 and 4 of Table 3 of 40 CFR Part 63, Subpart UUUUU must be met during periods of startup or shutdown.* ***(40 CFR 63.10000(a), 40 CFR Part 63, Subpart UUUUU, Table 3)***

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. *The permittee shall operate and maintain all associated air pollution control equipment and monitoring equipment necessary for compliance with 40 CFR Part 63, Subpart UUUUU in a manner consistent with safety and good air pollution control practices for minimizing emissions.* ***(40 CFR 63.10000(b))***

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. ***(R 336.1213(3)(b)(ii))***

1. *The permittee shall verify the filterable PM emission rates from each emission unit by testing at owner's expense, in accordance with 40 CFR 63.10007 and Table 5 to 40 CFR Part 63, Subpart UUUUU. The permittee must complete the test once every calendar quarter and at least 45 days since the previous performance test if not a LEE for PM. The permittee may skip performance testing in those quarters during which less than 168 boiler operating hours occur, except that a performance test must be conducted at least once every calendar year.* ***(40 CFR 63.10006(f), 40 CFR 63.10007, 40 CFR 63.10021(d)(1) and (2), 40 CFR Part 63, Subpart UUUUU, Table 5)***

2. *For any Hg LEE unit(s) which no longer meet(s) the requirements of SC VI.3, the permittee has 6 months to install a sorbent trap monitoring system or Hg CEMS pursuant to SC VI.3. Until the monitoring system is installed, certified, and operating, the permittee shall verify the Hg emission rates from each emission unit by testing at owner's expense, in accordance with 40 CFR 63.10007 and Table 5 to 40 CFR Part 63, Subpart UUUUU. The permittee must complete the test once every calendar quarter and at least 45 days since the previous performance test until the device to monitor and record the Hg emissions on a continuous basis has been installed and is operating. The permittee may skip performance testing in those quarters during which less than 168 boiler operating hours occur, except that a performance test must be conducted at least once every calendar year.* ***(40 CFR 63.10006(b)(2), 40 CFR 63.10006(f), 40 CFR 63.10007, 40 CFR 63.10021(d)(1) and (2), 40 CFR Part 63, Subpart UUUUU, Table 5)***

3. *If the permittee uses the provisions for LEE status for any pollutant except for Hg, the permittee shall verify each LEE pollutant emission rate from the applicable emission unit(s) of FGMATS by testing at owner's expense, in accordance with 40 CFR 63.10007 and Table 5 to 40 CFR Part 63, Subpart UUUUU. The*

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Comment [KMC2]:

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Comment [JMP3]: This used to say I.3, but that is the Hg limit. It seems like this should point to VI.3, which lays out the LEE criteria for Hg (i.e., <10% of the emission limit or 29 lbs/yr potential emissions).

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permittee must complete the test once every 36 months and at least 1,050 days since the previous performance test to demonstrate continued LEE status. If a performance test deadline is missed due to the EGU being inoperative and 168 or more boiler operating hours occur in the next test period, an additional performance test shall be completed in the next test period, with at least 350 calendar days separating the performance tests conducted in the same 3-year period. ***(40 CFR 63.10006(b), 40 CFR 63.10006(f), 40 CFR 63.10007, 40 CFR Part 63, Subpart UUUUU, Table 5)***

4. *If the permittee uses the provisions for LEE status for Hg, the permittee shall verify Hg emission rates from the applicable emission unit(s) of FGMATS by testing at owner's expense, in accordance with 40 CFR 63.10007 and Table 5 to 40 CFR Part 63, Subpart UUUUU. The permittee must complete the test once every 12 months and at least 320 days since the previous performance test or annual sorbent trap mercury testing for 30-boiler operating day LEE tests or at least 230 days since the previous annual sorbent trap mercury testing for 90-boiler operating day LEE tests (as applicable) to demonstrate continued LEE status. If a performance test deadline is missed due to the EGU being inoperative and 168 or more boiler operating hours occur in the next test period, an additional performance test shall be completed in the next test period, with at least 107 calendar days separating the performance tests conducted in the same calendar year.* ***(40 CFR 63.10006(b), 40 CFR 63.10006(f), 40 CFR 63.10007, 40 CFR Part 63, Subpart UUUUU, Table 5)***

5. *Unless an alternate schedule has been approved by the AQD, no less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. The protocol shall describe the test method(s) and the maximum routine operating conditions, including targets for key operational parameters associated with air pollution control equipment to be monitored and recorded during testing, as applicable.* ***(40 CFR 63.7, 40 CFR 63.10007, 40 CFR 63.10030(a))***

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. ***(R 336.1213(3)(b)(ii))***

1. *During startup, as defined by paragraph (1) of the definition of "startup" in 40 CFR 63.10042, the permittee must operate all Continuous Monitoring Systems (CMS). Startup means either the first-ever firing of fuel in a boiler for the purpose of producing electricity, or the firing of fuel in a boiler after a shutdown event for any purpose. Startup ends when any of the steam from the boiler is used to generate electricity for sale over the grid or for any other purpose (including on site use). The permittee must comply with the applicable emission limits at all times except for startup and shutdown periods unless the permittee chooses to use just one set of sorbent traps to demonstrate compliance with the applicable Hg emission limit, then the permittee must comply with the applicable Hg emission limit at all times. The permittee must collect monitoring data during startup periods, as specified in 40 CFR 63.10020(a) and (b). The permittee must keep records during startup periods, as provided in 40 CFR 63.10032 and 40 CFR 63.10021(h). Any fraction of an hour in which startup occurs constitutes a full hour of startup.* ***(40 CFR Part 63, Subpart UUUUU, Table 3)***

2. *The permittee must operate all CMS during shutdown. The permittee must also collect appropriate data, and the permittee must calculate the pollutant emission rate for each hour of shutdown for those pollutants for which a CMS is used. The permittee must collect monitoring data during shutdown periods, as specified in 40 CFR 63.10020(a). The permittee must keep records during shutdown periods, as provided in 40 CFR 63.10032 and 40 CFR 63.10021(h). Any fraction of an hour in which shutdown occurs constitutes a full hour of shutdown.* ***(40 CFR Part 63, Subpart UUUUU, Table 3)***

3. *If a performance test on a Hg LEE shows emission in excess of 10% of the applicable Hg emissions limit or potential mass emissions of greater than 29.0 pounds per year, the permittee must install, certify, maintain, and operate an Hg CEMS or a sorbent trap monitoring system in accordance with Appendix A to this subpart, within 6 calendar months of losing LEE eligibility.* ***(40 CFR 63.10006(b)(2))***

4. *The permittee shall install, maintain, and operate a device(s) to monitor and record the SO_2 concentration of the exhaust gas from each emission unit on a continuous basis. The permittee shall install and operate each CEMS to meet the timelines, requirements and reporting detailed in 40 CFR Part 75, Appendices A and B.* ***(40 CFR 63.10000(c)(1)(v))***

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5. *If required to convert measured pollutant concentrations to the units of the applicable mass per heat input emission limit(s) or for routine operation of a sorbent trap monitoring system, the permittee shall install, calibrate, maintain and operate a device to monitor and record the oxygen (O_2) or carbon dioxide (CO_2) exhaust gas content, exhaust gas flow rate and/or moisture from each emission unit on a continuous basis. The monitor shall be operated in accordance with procedures outlined in 40 CFR Part 75, Appendices A and B. As an alternative to moisture monitoring, the permittee may elect to use appropriate fuel-specific default moisture values from 40 CFR 75.11(b) for coal-fired units or a default moisture value for non-coal-fired units as established via petition to the Administrator under 40 CFR 75.66.* ***(40 CFR 63.10010(b)-(d), 40 CFR Part 63, Subpart UUUUU, Table 5)***

6. *The permittee shall keep, in a satisfactory manner, hourly and 30-day rolling average SO_2 emission rate records for each emission unit excluding periods of startup and shutdown.* ***(40 CFR 63.10010, 40 CFR 63.10021, 40 CFR Part 63, Subpart UUUUU, Table 7)***

7. *The permittee must operate the required monitoring system(s) and collect data at all required intervals at all times that the affected EGU is operating, except for periods of monitoring system malfunctions or out-of-control periods (see 40 CFR 63.8(c)(7) of 40 CFR Part 63, Subpart A), and required monitoring system quality assurance or quality control activities, including, as applicable, calibration checks and required zero and span adjustments. The permittee is required to affect monitoring system repairs in response to monitoring system malfunctions and to return the monitoring system to operation as expeditiously as practicable.* ***(40 CFR 63.10020(b))***

8. *The permittee may not use data recorded during startup or shutdown in calculations used to report emissions, except as otherwise provided in 40 CFR 63.10000(c)(1)(vi)(B) and 40 CFR 63.10005(a)(2)(iii). In addition, data recorded during monitoring system malfunctions or monitoring system out-of-control periods, repairs associated with monitoring system malfunctions or monitoring system out-of-control periods or required monitoring system quality assurance or control activities may not be used in calculations used to report emissions or operating levels. The permittee must use all of the quality-assured data collected during all other periods in assessing the operation of the control device and associated control system.* ***(40 CFR 63.10020(c))***

9. *Failure to collect required data is a deviation from the monitoring requirements except for periods of monitoring system malfunctions or monitoring system out-of-control periods, repairs associated with monitoring system malfunctions or monitoring system out-of-control periods and required monitoring system quality assurance or quality control activities including, as applicable, calibration checks and required zero and span adjustments.* ***(40 CFR 63.10020(d))***

10. *If the permittee uses CEMS to measure SO_2, PM, HCl, HF, or Hg emissions (or sorbent trap monitoring system), except as otherwise provided in 40 CFR 63.10020(c), the permittee must demonstrate continuous compliance by using all quality-assured hourly data recorded by the CEMS (or sorbent trap monitoring system) and other required monitoring systems to calculate the arithmetic average emissions rate in units of the standard on a continuous 30-boiler operating day (or, if alternate emissions averaging is used for Hg, a 90-boiler operating day) rolling average basis, updated at the end of each new boiler operating day. Use Equation 8 in 40 CFR 63.10021(b) to determine the 30- or 90-boiler operating day rolling average.*
(40 CFR 63.10021(a) and (b))

11. *The permittee must keep the following records:*

    a. *A copy of each notification and report that has been submitted to comply with 40 CFR Part 63, Subpart UUUUU, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report that has been submitted, according to the requirements in 40 CFR 63.10(b)(2)(xiv).* ***(40 CFR 63.10032(a)(1))***

    b. *Records of performance stack tests, fuel analyses, or other compliance demonstrations and performance evaluations, as required in 40 CFR 63.10(b)(2)(viii).* ***(40 CFR 63.10032(a)(2))***

    c. *For each CEMS and CPMS, the permittee must keep the following records:*

        i. *Records described in 40 CFR 63.10(b)(2)(vi) through (xi).* ***(40 CFR 63.10032(b)(1))***

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ii. *Previous (i.e., superseded) versions of the performance evaluation plan as required in 40 CFR 63.8(d)(3).* ***(40 CFR 63.10032(b)(2))***

iii. *Request for alternatives to relative accuracy test for CEMS as required in 40 CFR 63.8(f)(6)(i).* ***(40 CFR 63.10032(b)(3))***

iv. *The date and time that each deviation started and stopped and whether the deviation occurred during a period of startup, shutdown, or malfunction or during another period.* ***(40 CFR 63.10032(b)(4))***

v. *If the permittee continuously monitors Hg and/or HCl and/or HF emissions, the permittee must also keep the records required under Appendix A and/or Appendix B of 40 CFR Part 63, Subpart UUUUU.* ***(40 CFR 63.10032(a))***

d. *Records required in Table 7 of 40 CFR Part 63, Subpart UUUUU including records of all monitoring data and calculated averages for applicable PM CPMS operating limits to show continuous compliance with each emission limit and operating limit that applies.* ***(40 CFR 63.10032(c))***

e. *For each emission unit subject to an emission limit:*

i. *The permittee shall keep the monthly fuel use by each emission unit, including the type(s) of fuel and amount(s) used.* ***(40 CFR 63.10032(d)(1))***

ii. *If the permittee combusts non-hazardous secondary materials that have been determined not to be solid waste pursuant to 40 CFR 241.3(b)(1), the permittee must keep a record which documents how the secondary material meets each of the legitimacy criteria. If the permittee combusts a fuel that has been processed from a discarded non-hazardous secondary material pursuant to 40 CFR 241.3(b)(2), the permittee must keep records as to how the operations that produced the fuel satisfies the definition of processing in 40 CFR 241.2. If the fuel received a non-waste determination pursuant to the petition process submitted under 40 CFR 241.3(c), the permittee must keep a record which documents how the fuel satisfies the requirements of the petition process.* ***(40 CFR 63.10032(d)(2))***

iii. *For an emission unit that qualifies as a LEE under 40 CFR 63.10005(h), the permittee shall keep annual records that document that the emissions in the previous stack test(s) continue to qualify the unit for LEE status for an applicable pollutant, and document that there was no change in source operations including fuel composition and operation of air pollution control equipment that would cause emissions of the pollutant to increase within the past year.* ***(40 CFR 63.10032(d)(3))***

f. *Regarding startup periods or shutdown periods:*

i. *If the permittee chooses to rely on paragraph (1) of the definition of "startup" in 40 CFR 63.10042 for the emission unit(s), the permittee shall keep records of the occurrence and duration of each startup or shutdown.* ***(40 CFR 63.10032(f)(1))***

ii. *If the permittee chooses to rely on paragraph (2) of the definition of "startup" in 40 CFR 63.10042 for the emission unit(s), the permittee shall keep records of:*

A. *The determination of the maximum clean fuel capacity for each emission unit.* ***(40 CFR 63.10032(f)(2)(i))***

B. *The determination of the maximum hourly clean fuel heat input and of the hourly clean fuel heat input for each emission unit.* ***(40 CFR 63.10032(f)(2)(ii))***

C. *The information required in 40 CFR 63.10020(e).* ***(40 CFR 63.10032(f)(2)(iii))***

iii. *The type(s) and amount(s) of fuel used during each startup or shutdown.* ***(40 CFR 63.10032(i))***

g. *The occurrence and duration of each malfunction of an operation (i.e., process equipment) or the air pollution control and monitoring equipment.* ***(40 CFR 63.10032(g))***

h. *Actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR 63.10000(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.* ***(40 CFR 63.10032(h))***

i. *If the permittee elects to average emissions consistent with 40 CFR 63.10009, the permittee shall keep a copy of the emissions averaging implementation plan required in 40 CFR 63.10009(g), all calculations*

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required under 40 CFR 63.10009, including daily records of heat input or steam generation, as applicable, and monitoring records consistent with 40 CFR 63.10022. ***(40 CFR 63.10032(e))***

12. *The permittee shall keep all records in a form suitable and readily available for expeditious review and for at least 5 years after the date of each occurrence, corrective action, report, or record. The records must be kept onsite for at least 2 years and may be kept offsite for the remaining 3 years.* ***(40 CFR 63.10(b)(1), 40 CFR 63.10033)***

13. *The permittee shall maintain on site and submit, if requested by the Administrator, an annual report of periodic performance tune-ups containing the information required by 40 CFR 63.10021(e)(8). The reports shall be in a format acceptable to the Administrator. If requested by the AQD District Supervisor, the permittee shall also submit an annual report with the results of the performance tune-ups.* ***(40 CFR 63.10021(e)(8))***

VII. REPORTING

1. *Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A.* ***(R 336.1213(3)(c)(ii))***

2. *Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30.* ***(R 336.1213(3)(c)(i))***

3. *Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year.* ***(R 336.1213(4)(c))***

4. *Semiannual reporting of the information required in 40 CFR 63.10031(c)(1) through (9), (d), and (e) as applicable. The report shall be postmarked or received by the Administrator by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. The report shall include the following:*

   a. *The information required by the Continuous Monitoring Summary Report located in 40 CFR 63.10(e)(3)(vi).* ***(40 CFR 63.10031(c)(1))***

   b. *The total fuel use by each affected source subject to an emission limit, for each calendar month within the semiannual reporting period, including, but not limited to, a description of the fuel, whether the fuel has received a non-waste determination by EPA or the basis for concluding that the fuel is not a waste, and the total fuel usage amount with units of measure.* ***(40 CFR 63.10031(c)(2))***

   c. *Indicate whether any emission unit in FGMATS burned new types of fuel during the reporting period. If new types of fuel were burned, include the date of the performance test where that fuel was in use.* ***(40 CFR 63.10031(c)(3))***

   d. *Include the date of the most recent tune-up for each emission unit. The date of the tune-up is the date the tune-up provisions specified in 40 CFR 63.10021(e)(6) and (7) were completed.* ***(40 CFR 63.10031(c)(4))***

   e. *If the permittee chooses to comply using paragraph (2) of the definition of "startup" in 40 CFR 63.10042 then for each instance of startup or shutdown:*

      i. *Include the maximum clean fuel storage capacity and the maximum hourly heat input that can be provided for each clean fuel determined according to the requirements of 40 CFR 63.10032(f).* ***(40 CFR 63.10031(c)(5)(i))***

      ii. *Include the information required to be monitored, collected, or recorded according to the requirements of 40 CFR 63.10020(e).* ***(40 CFR 63.10031(c)(5)(ii))***

      iii. *If the permittee chooses to use CEMS for compliance purposes with numerical limits, include hourly average CEMS values and hourly average flow rates during startup and shutdown periods. Use units of milligrams per cubic meter for PM CEMS, micrograms per cubic meter for Hg CEMS, and ppmv for*

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HCl, HF, or SO_2 CEMS. Use units of standard cubic meters per hour on a wet basis for flow rates. ***(40 CFR 63.10031(c)(5)(iii))***

iv. *If the permittee chooses to use a separate sorbent trap measurement system for startup or shutdown reporting periods, include hourly average Hg concentration in terms of micrograms per cubic meter.* ***(40 CFR 63.10031(c)(5)(iv))***

v. *If the permittee chooses to use a PM CPMS, include hourly average operating parameter values in terms of the operating limit, as well as the operating parameter to PM correlation equation.* ***(40 CFR 63.10031(c)(5)(v))***

f. *Report emergency bypass information annually from units with LEE status.* ***(40 CFR 63.10031(c)(6))***

g. *A summary of the results of the annual performance tests and documentation of any operating limits that were reestablished during the test, if applicable. If the permittee is conducting stack tests once every 3 years to maintain LEE status, consistent with 40 CFR 63.10006(b), the report shall include the date of each stack test conducted during the previous 3 years, a comparison of emission level the permittee achieved in each stack test conducted during the previous 3 years to the 50 percent emission limit threshold required in 40 CFR 63.10005(h)(1)(i), and a statement as to whether there have been any operational changes since the last stack test that could increase emissions.* ***(40 CFR 63.10031(c)(7))***

h. *If there are no deviations from any emission limitation (emission limit and operating limit) that applies to FGMATS and there are no deviations from the requirements for work practice standards in Table 3 to 40 CFR Part 63, Subpart UUUUU that apply to FGMATS, the report shall include a statement that there were no deviations from the emission limitations and work practice standards during the reporting period. If there were no periods during which the CMSs, including continuous emissions monitoring system, and operating parameter monitoring systems, were out-of-control as specified in 40 CFR 63.8(c)(7), a statement that there were no periods during which the CMSs were out-of-control during the reporting period.* ***(40 CFR Part 63, Subpart UUUUU, Table 8)***

i. *If there is a deviation from any emission limitation (emission limit and operating limit) or work practice standard during the reporting period, the report must contain a brief description of the deviation, the duration of the deviation, the cause of the deviation, and the information in 40 CFR 63.10031(d). If there were periods during which the CMS's, including continuous emissions monitoring systems and continuous parameter monitoring systems, were out-of-control, as specified in 40 CFR 63.8(c)(7), the report must contain the information in 40 CFR 63.10031(e).* ***(40 CFR 63.10031(c)(1) through (9), (d), and (e), 40 CFR 63.10031(a), 40 CFR 63.10031(c)(9), 40 CFR Part 63, Subpart UUUUU, Table 8)***

j. *If the affected source submits a compliance report pursuant to Table 8 in 40 CFR Part 63, Subpart UUUUU, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the compliance report includes all required information concerning deviations from any emission limit, operating limit, or work practice requirement in 40 CFR Part 63, Subpart UUUUU, submission of the compliance report satisfies any obligation to report the same deviations in the semiannual monitoring report required by SC VII.2.* ***(40 CFR 63.10031(e))***

5. *The permittee must submit any of the following applicable notifications by the dates specified within the specific citation: 40 CFR 63.7(b) and (c) Notification of performance test and Quality assurance program; 40 CFR 63.8(e) Performance evaluation of continuous monitoring systems; 40 CFR 63.8(f)(4) Request to use alternative monitoring methods; 40 CFR 63.8(f)(6) Alternative to the relative accuracy test; 40 CFR 63.9(b) Initial notifications; 40 CFR 63.9(c) Request for extension of compliance; 40 CFR 63.9(d) Notification that source is subject to special compliance requirements; 40 CFR 63.9(e) Notification of performance test, which shall be submitted at least 30 days before the performance test is scheduled to begin; 40 CFR 63.9(f) Notification of opacity and visible emission observations; 40 CFR 63.9(g) Additional notification requirements for sources with continuous monitoring systems; and 40 CFR 63.9(h) Notification of compliance status.* ***(40 CFR 63.10030(a))***

6. *On or after July 1, 2020, within 60 days after the date of completing each performance test, the permittee must submit the performance test reports required by this subpart to EPA's WebFIRE database by using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data*

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Exchange (CDX) (www.epa.gov/cdx). Performance test data must be submitted in the file format generated through use of EPA's Electronic Reporting Tool (ERT) (see http://www.epa.gov/ttn/chief/ert/index.html). Only data collected using those test methods on the ERT Web site are subject to this requirement for submitting reports electronically to WebFIRE. At the discretion of the AQD, the permittee must also submit these reports, one to the Technical Programs Unit Supervisor and one to the AQD District Supervisor, in a format approved by the AQD. ***(40 CFR 63.10031(f))***

7. *On or after July 1, 2020, within 60 days after the date of completing each CEMS (SO_2, PM, HCl, HF, and Hg) performance evaluation test, as defined in 40 CFR 63.2, the permittee must submit the relative accuracy test audit (RATA) data (or, for PM CEMS, RCA and RRA data) required by this subpart to EPA's WebFIRE database by using CEDRI that is accessed through EPA's CDX (www.epa.gov/cdx). The RATA data shall be submitted in the file format generated through use of EPA's Electronic Reporting Tool (ERT) (http://www.epa.gov/ttn/chief/ert/index.html). Only RATA data compounds listed on the ERT Web site are subject to this requirement. At the discretion of the AQD, the permittee must also submit these RATA reports to the AQD District Supervisor in a format approved by the AQD. Owners or operators shall submit calibration error testing, drift checks, and other information required in the performance evaluation as described in 40 CFR 63.2 and as required in this chapter.* ***(40 CFR 63.10031(f)(1))***

8. *On or after July 1, 2020, for a PM CEMS, PM CPMS, or approved alternative monitoring using a HAP metals CEMS, within 60 days after the reporting periods ending on March 31st, June 30th, September 30th, and December 31st, the permittee must submit quarterly reports to EPA's WebFIRE database by using the CEDRI that is accessed through EPA's CDX (www.epa.gov/cdx). The permittee must use the appropriate electronic reporting form in CEDRI or provide an alternate electronic file consistent with EPA's reporting form output format. For each reporting period, the quarterly reports must include all of the calculated 30-boiler operating day rolling average values derived from the CEMS and PM CPMS.* ***(40 CFR 63.10031(f)(2))***

9. *Reports for a SO_2 CEMS, a Hg CEMS or sorbent trap monitoring system, a HCl or HF CEMS, and any supporting monitors for such systems (such as a diluent or moisture monitor) shall be submitted using the ECMPS Client Tool, as provided for in 40 CFR Part 63, Subpart UUUUU, Appendices A and B and 40 CFR 63.10021(f).* ***(40 CFR 63.10031(f)(3))***

10. *On or after July 1, 2020, the permittee must submit all reports required by 40 CFR 63.10031 (c) and (d) electronically using CEDRI that is accessed through the EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). The permittee must use the appropriate electronic reporting form in CEDRI or provide an alternate electronic file consistent with EPA's reporting form output format. If requested by the AQD, the permittee must also submit these reports, to the AQD District Supervisor in a format approved by the AQD.* ***(40 CFR 63.10031(f)(4))***

11. *Prior to July 1, 2020, all reports subject to electronic submittal in SC VII.6, VII.7, VII.8 and VII.10 shall be submitted to the EPA at the frequency specified in those paragraphs in electronic portable document format (PDF) using the ECMPS Client Tool. Each PDF version of a submitted report must include sufficient information to assess compliance and to demonstrate that the testing was done properly. The data elements listed at 40 CFR 63.10031(f)(6)(i)-(xii) must be entered into the ECMPS Client Tool at the time of submission of each PDF file.* ***(40 CFR 63.10031(f)(6))***

12. *If requested by the Administrator, the permittee must submit the monitoring plan (or relevant portion of the plan) at least 60 days before the initial performance evaluation of a particular CMS, except where the CMS has already undergone a performance evaluation that meets the requirements of 40 CFR 63.10010 (e.g., if the CMS was previously certified under another program).* ***(40 CFR 63.10000(d)(3))***

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

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Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
NA	NA	NA	NA

IX. OTHER REQUIREMENT(S)

1. For each emission unit or emissions averaging group complying with an emission limit as specified in Table 2 of 40 CFR Part 63, Subpart UUUUU, the permittee may request to switch from a mass per heat input to a mass per gross output limit (or vice versa).
   a. The permittee may switch from a mass per heat input to a mass per gross output limit (or vice-versa), provided that:
      i. The permittee submits a request that identifies for each emission unit or emissions averaging group involved in the proposed switch both the current and proposed emission limit. **(40 CFR 63.10030(e)(7)(iii)(A)(1))**
      ii. The request arrives to the Administrator at least 30 calendar days prior to the date that the switch is proposed to occur. **(40 CFR 63.10030(e)(7)(iii)(A)(2))**
      iii. The request demonstrates through performance stack test results completed within 30 days prior to the submission, compliance for each emission unit or emissions averaging group with both the mass per heat input and mass per gross output limits. **(40 CFR 63.10030(e)(7)(iii)(A)(3))**
      iv. The permittee revises and submits all other applicable plans, e.g., monitoring and emissions averaging, with the request. **(40 CFR 63.10030(e)(7)(iii)(A)(4))**
      v. The permittee maintains records of all information regarding the choice of emission limits. **(40 CFR 63.10030(e)(7)(iii)(A)(5))**
   b. The permittee may begin to use the revised emission limits starting in the next reporting period, after receipt of written acknowledgement from the Administrator of the switch. **(40 CFR 63.10030(e)(7)(iii)(B))**
   c. From the submission of the request until start of the next reporting period after receipt of written acknowledgement from the Administrator of the switch, the permittee shall demonstrate compliance with both the mass per heat input and mass per gross output emission limits for each pollutant for each emission unit or emissions averaging group. **(40 CFR 63.10030(e)(7)(iii)(C))**

2. The permittee may switch from paragraph (1) of the definition of "startup" in 40 CFR 63.10042 to paragraph (2) of the definition of "startup" (or vice-versa), provided that:
   a. The permittee submits a request that identifies for each emission unit or emissions averaging group involved in the proposed switch both the current definition of "startup" relied on and the proposed definition the permittee plans to rely on. **(40 CFR 63.10030(e)(8)(iii)(A))**
   b. The request arrives to the Administrator at least 30 calendar days prior to the date that the switch is proposed to occur. **(40 CFR 63.10030(e)(8)(iii)(B))**
   c. The permittee revises and submits all other applicable plans, e.g., monitoring and emissions averaging, with the submission. **(40 CFR 63.10030(e)(8)(iii)(C))**
   d. The permittee maintains records of all information regarding the choice of the definition of "startup". **(40 CFR 63.10030(e)(8)(iii)(D))**
   e. The permittee begins to use the revised definition of "startup" in the next reporting period after receipt of written acknowledgement from the Administrator of the switch. **(40 CFR 63.10030(e)(8)(iii)(E))**

3. If using a CMS to demonstrate continuous compliance with an emission limit or operating limit, the permittee must develop a site-specific monitoring plan and submit this site-specific monitoring plan, if requested, at least 60 days before the initial performance evaluation (where applicable) of the CMS. This requirement also applies to the permittee if the permittee petitions the Administrator for alternative monitoring parameters under 40 CFR 63.8(f). This requirement to develop and submit a site-specific monitoring plan does not apply to

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affected sources with existing monitoring plans that apply to CEMS and CPMS prepared under Appendix B of 40 CFR Part 60 or 40 CFR Part 75, and that meet the requirements of 40 CFR 63.10010. Using the process described in 40 CFR 63.8(f)(4), the permittee may request approval of monitoring system quality assurance and quality control procedures alternative to those specified in this paragraph of this section and, if approved, include those in the site-specific monitoring plan. The monitoring plan must address the following provisions: ***(40 CFR 63.10000(d), 40 CFR 63.10010)***

a. *Installation of the CMS or sorbent trap monitoring system sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device). See 40 CFR 63.10010(a) for further details. For PM CPMS installations, follow the procedures in 40 CFR 63.10010(h).*

b. *Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction systems.*

c. *Schedule for conducting initial and periodic performance evaluations.*

d. *Performance evaluation procedures and acceptance criteria (e.g., calibrations), including the quality control program in accordance with the general requirements of 40 CFR 63.8(d).*

e. *On-going operation and maintenance procedures, in accordance with the general requirements of 40 CFR 63.8(c)(1)(ii), (c)(3), and (c)(4)(ii).*

f. *Conditions that define a CMS that is out of control consistent with 40 CFR 63.8(c)(7)(i) and for responding to out of control periods consistent with 40 CFR 63.8(c)(7)(ii) and (c)(8).*

g. *On-going recordkeeping and reporting procedures, in accordance with the general requirements of 40 CFR 63.10(c), (e)(1), and (e)(2)(i), or as specifically required under 40 CFR Part 63, Subpart UUUUU.*

h. *Alternatively, the requirements are considered to be met for a particular CMS or sorbent trap monitoring system if:*

   i. *The CMS or sorbent trap monitoring system is installed, certified, maintained, operated, and quality-assured either according to 40 CFR Part 75, or Appendix A or B of 40 CFR Part 63, Subpart UUUUU; and*

   ii. *The recordkeeping and reporting requirements of 40 CFR Part 75, or Appendix A or B of 40 CFR Part 63, Subpart UUUUU, which pertain to the CMS, are met.*

4. *If the permittee chooses to reapply for LEE status, the permittee must demonstrate all performance tests and CEMS or sorbent trap monitoring system data over a consecutive 3-year period show compliance with the LEE criteria.* ***(40 CFR 63.10006(b)(2) and (h))***

5. *If any emission unit(s) cease(s) to operate in a manner that causes the unit(s) to meet the definition of an EGU subject to 40 CFR Part 63, Subpart UUUUU, the permittee must submit the notification in 40 CFR 63.10000(i)(2) no less than 30 days prior to when the EGU will cease complying with 40 CFR Part 63, Subpart UUUUU.* ***(40 CFR 63.10000(i)(2), 40 CFR 63.10030(f))***

6. *The permittee shall comply with all provisions of the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63, Subparts A and UUUUU.* ***(40 CFR Part 63, Subparts A and UUUUU)***

Footnotes:

[1] *This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).*

[2] *This condition is federally enforceable and was established pursuant to Rule 201(1)(a).*

E. NON-APPLICABLE REQUIREMENTS

At the time of the ROP issuance, the AQD has determined that no non-applicable requirements have been identified for incorporation into the permit shield provision set forth in the General Conditions in Part A pursuant to Rule 213(6)(a)(ii).

APPENDICES

Appendix 1. Abbreviations and Acronyms

The following is an alphabetical listing of abbreviations/acronyms that may be used in this permit.

AQD	Air Quality Division	MM	Million
acfm	Actual cubic feet per minute	MSDS	Material Safety Data Sheet
BACT	Best Available Control Technology	MW	Megawatts
BTU	British Thermal Unit	NA	Not Applicable
°C	Degrees Celsius	NAAQS	National Ambient Air Quality Standards
CAA	Federal Clean Air Act	NESHAP	National Emission Standard for Hazardous Air Pollutants
CAM	Compliance Assurance Monitoring	NMOC	Non-methane Organic Compounds
CEM	Continuous Emission Monitoring	NOx	Oxides of Nitrogen
CFR	Code of Federal Regulations	NSPS	New Source Performance Standards
CO	Carbon Monoxide	NSR	New Source Review
COM	Continuous Opacity Monitoring	PM	Particulate Matter
department	Michigan Department of Environmental Quality	PM-10	Particulate Matter less than 10 microns in diameter
dscf	Dry standard cubic foot	pph	Pound per hour
dscm	Dry standard cubic meter	ppm	Parts per million
EPA	United States Environmental Protection Agency	ppmv	Parts per million by volume
EU	Emission Unit	ppmw	Parts per million by weight
°F	Degrees Fahrenheit	PS	Performance Specification
FG	Flexible Group	PSD	Prevention of Significant Deterioration
GACS	Gallon of Applied Coating Solids	psia	Pounds per square inch absolute
GC	General Condition	psig	Pounds per square inch gauge
gr	Grains	PeTE	Permanent Total Enclosure
HAP	Hazardous Air Pollutant	PTI	Permit to Install
Hg	Mercury	RACT	Reasonable Available Control Technology
hr	Hour	ROP	Renewable Operating Permit
HP	Horsepower	SC	Special Condition
H_2S	Hydrogen Sulfide	scf	Standard cubic feet
HVLP	High Volume Low Pressure *	sec	Seconds
ID	Identification (Number)	SCR	Selective Catalytic Reduction
IRSL	Initial Risk Screening Level	SO_2	Sulfur Dioxide
ITSL	Initial Threshold Screening Level	SRN	State Registration Number
LAER	Lowest Achievable Emission Rate	TAC	Toxic Air Contaminant
lb	Pound	Temp	Temperature
m	Meter	THC	Total Hydrocarbons
MACT	Maximum Achievable Control Technology	tpy	Tons per year
MAERS	Michigan Air Emissions Reporting System	µg	Microgram
MAP	Malfunction Abatement Plan	VE	Visible Emissions
MDEQ	Michigan Department of Environmental Quality	VOC	Volatile Organic Compounds
mg	Milligram	yr	Year
mm	Millimeter		

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 pounds per square inch gauge (psig).

Appendix 2. Schedule of Compliance

The permittee certified in the ROP application that this stationary source is in compliance with all applicable requirements and the permittee shall continue to comply with all terms and conditions of this ROP. A Schedule of Compliance is not required. **(R 336.1213(4)(a), R 336.1119(a)(ii))**

Appendix 3. Monitoring Requirements

The following monitoring procedures, methods, or specifications are the details to the monitoring requirements identified and referenced in Source-wide Conditions. This Appendix is federally enforceable and was established pursuant to Rule 201(1)(a) and Rule 214a. This Appendix was originally established in the TES Filer City Station Agreed Administrative Consent Order and Information Request Effective November 23, 2015 and also pursuant to Act 451 Section 324.5503(b), and will remain in effect after termination of the administrative consent order. **(Act 451 324.5503(b))**

Ambient Air Monitoring Requirements

If TES Filer City Station (TES) elects to accept deliveries of petroleum coke (petcoke) at its facility located at 700 Mee Street, Filer City, Michigan (the facility) after March 31, 2016, it shall notify EPA in writing to the address listed in paragraph 19, below, and shall comply with the following:

PM_{10} Monitors and Siting

1. No later than 30 days prior to acceptance of any petcoke at the facility, TES shall submit proposed monitoring site locations at the facility for EPA review and approval prior to establishing the monitoring sites. TES shall also submit to EPA a map showing the property lines of the facility, the locations of nearby residences and industrial properties, and proposed locations of the monitoring sites;

2. Within 30 days of EPA approval of the monitoring site locations specified in paragraph 1, above, TES shall install, operate, and maintain at least one ambient monitoring site at the facility that shall contain at least one continuous Federal Equivalent Method (FEM) real-time particulate matter (PM_{10}) monitor and at least one Federal Reference Method (FRM) PM_{10} filter-based monitor operating every third day;

3. The monitoring sites and monitoring equipment shall conform with the following requirements:
   a. The PM_{10} real-time and filter-based instruments shall meet the specifications of FRM/FEM monitors on this list: www.epa.gov/ttn/amtic/files/ambient/criteria/reference-equivalent-methods-list.pdf;
   b. TES shall follow all monitoring, siting, and quality assurance criteria in 40 CFR Part 58, Appendix E;
   c. PM_{10} concentrations from filter-based sampling shall be determined according to 40 CFR Part 50, Appendix J – "Reference Method for the Determination of Particulate Matter as PM_{10} in the Atmosphere;"
   d. All data collected shall be consistent with units in the National Ambient Air Quality Standards for PM_{10}; and
   e. A data logger shall be attached to the monitors to record readings from the continuous monitors.

4. TES shall also follow the operating procedures identified in the "Quality Assurance Handbook for Air Pollution Measurement Systems" (located at http://www.epa.gov/ttn/amtic/qabook.html), 40 CFR Part 58, Appendix A, and any specified procedures in the manufacturer's maintenance manual for the units used to monitor PM_{10};

5. TES shall be responsible for all operation and maintenance associated with the PM_{10} monitors. Maintenance shall include, at a minimum, the replacement of any equipment and cleaning on a schedule specified in the manufacturer's maintenance manual;

6. TES shall order and pay for any necessary replacement parts, accessories, maintenance, etc;

7. TES shall properly change the PM_{10} filters in all sampling devices;

8. TES shall archive all filters from the PM_{10} filter-based instruments for at least 2 years;

9. TES may apply to EPA to terminate the requirements of this Request, however, at least one year of information must be collected under this Request before such an application is made;

Wind Speed and Direction Monitoring

10. TES shall install a meteorological tower at a location representative of local wind conditions. At a minimum, the meteorological tower must continuously measure and record wind speed and wind direction at one-hour intervals throughout the entire ambient monitoring period. TES shall correlate 1-hr and 24-hr ambient PM_{10} measurements with wind speed and wind direction data to determine source direction and the effects of wind speed on PM_{10} concentrations. The meteorological tower must also include calibrated ambient temperature and pressure instrumentation for purposes of determining corrected (actual) PM_{10} concentrations as recorded by the monitors. TES shall maintain and/or submit reports and records in accordance with the paragraphs 11-19, below;

11. With respect to the meteorological monitoring site, TES shall follow the Quality Assurance Handbook for Air Pollution Measurement Systems Volume IV: Meteorological Measurements Version 2.0 (Final) found at: http://www.epa.gov/ttnamti1/files/ambient/met/Volume%20IV_Meteorological_Measurements.pdf;

12. The internal clocks of all PM_{10} analyzers, data loggers, and the wind speed and wind direction data logger shall be synchronized to within 60 seconds of each other (local time and not adjusted for Daylight Savings Time) and shall be checked against a calibrated reference clock at least once every 30 days. Instrument clocks that are more or less than 60 seconds from the reference clock shall be reset to within 60 seconds of the reference clock. Each of these inconsistencies and each reset time shall be noted in the study log;

13. Continuous PM_{10} data collected during wind speeds of less than 0.5 meters per second shall be segregated from other wind data for purposes of wind speed and wind direction correlations;

14. TES shall be responsible for maintenance associated with the meteorological tower on a schedule specified in the manufacturer's maintenance manual. TES shall order and pay for any necessary replacement parts, accessories, maintenance, etc.

General Requirements Applicable to All Requests

15. Within 30 days of EPA approval of the monitoring sites, TES shall submit a Quality Assurance Project Plan (QAPP) to EPA. The guidance document for writing a QAPP is "EPA Guidance for Quality Assurance Project Plans," EPA QA/G-5, EPA/600/R-02/009 - December 2002. The guidance is available at http://www.epa.gov/QUALITY/qs-docs/g5-final.pdf. Any measures identified by this information request should be incorporated into the QAPP;

16. TES shall provide EPA and/or the Michigan Department of Environmental Quality access to the monitoring sites and respond to any inquiries regarding monitor siting, operations, or maintenance. In the event that an inspector or auditor identifies problems, TES shall take appropriate corrective actions. Any changes made to monitor siting, operations, or maintenance shall be approved by EPA prior to the change;

17. TES shall keep a daily log and monthly reports of the following information:
    a. Each site visit and operator activities;
    b. Any monitoring system downtime (date, time, duration, and reason) along with any corrective actions taken;
    c. Any possible interferences observed by the operator such as nearby construction or demolition; and
    d. Any calibration data provided by the manufacturer or performed by TES.

18. Hourly data from each monitor and meteorological monitoring site, and 24-hour data from gravimetric monitors shall be downloaded as ASCII comma-delimited files and provided to EPA on CD and by email every month. The files should have a single "header" row, with all following rows being individual records, and all columns being a single variable according to the header row. All filter analysis data, including any specification data shall also be provided;

19. Monthly reports specified in paragraph 18, above, shall be submitted to EPA for a period of one year. Each report is due within 14 days of the end of the month being reported. At the end of the one year time frame, TES may seek termination or modification of this request. TES shall submit all documents due under this request and the monthly reports to **cullen.raymond@epa.gov**, **cantello.nicole@epa.gov**, **r5airenforcement@epa.gov**, and:

    Attn: Compliance Tracker, AE-17J
    Air Enforcement and Compliance Assurance Branch
    U.S. Environmental Protection Agency
    Region 5
    77 West Jackson Boulevard
    Chicago, Illinois 60604

Appendix 4. Recordkeeping

Specific recordkeeping requirement formats and procedures are detailed in Part A or the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, this appendix is not applicable.

Appendix 5. Testing Procedures

There are no specific testing requirement plans or procedures for this ROP. Therefore, this appendix is not applicable.

Appendix 6. Permits to Install

The following table lists any PTIs issued or ROP revision applications received since the effective date of the previously issued ROP No. MI-ROP-N1685-2008. Those ROP revision applications that are being issued concurrently with this ROP renewal are identified by an asterisk (*). Those revision applications not listed with an asterisk were processed prior to this renewal.

Source-Wide PTI No MI-PTI-N1685-2008b is being reissued as Source-Wide PTI No. MI-PTI-N1685-2015.

Permit to Install Number	ROP Revision Application Number	Description of Equipment or Change	Corresponding Emission Unit(s) or Flexible Group(s)
NA	200900023	The AQD reopened ROP No: MI-ROP-N1685-2008 to include the Clean Air Interstate Rule (CAIR) Annual Sulfur Dioxide Permit, CAIR Annual Nitrogen Oxide Budget Permit, and CAIR Ozone Nitrogen Oxide Budget Permit pursuant to 40 CFR 97.120, 40 CFR 97.220, 40 CFR 97.320, and R 336.1420(3) and R 336.1821(2).	FGBOILERS
264-09	201000110	The permittee requested to change the averaging time for CO emission from EUBOILER01 and EUBOILER02 from an 8-hour rolling average to a 24-hour rolling average. The PTI also introduced minor changes to the recordkeeping and reporting requirements. There are no physical or operational changes as a result of this permit.	FGBOILERS

The following ROP amendments or modifications were issued after the effective date of ROP No. MI-ROP-N1685-2015.

Permit to Install Number	ROP Revision Application Number/ Issuance Date	Description of Change	Corresponding Emission Unit(s) or Flexible Group(s)
NA	201500168/ June 16, 2016	Reopening to update from CAIR to CSAPR.	FGBOILERS
110-14B	201700013/ June 19, 2017	To incorporate PTI 110-14B, which was a revision of PTI 110-14A to include an EPA Agreed Administrative Consent Order in the PTI, and revise requirements under NSPS Da regarding the prorated percent reduction for SO_2 emissions when both solid and natural gas fuels are fired within the same 30-day period. PTI 110-14A was initially issued to install two 100 MMBtu/hr natural gas burners in each of two 384 MMBtu/hr spreader stoker boilers to displace equivalent heat input for coal or at the other end of the range, to use natural gas solely for the Mercury Air Toxics Standards (MATS) clean fuel start-up requirement, depending on the comparative cost of fuels. The solid fuel standard in the existing permit was not changed at that time. During the PTI 110-14B review, EPA acknowledged that the NSPS Da calculation method for the percent reduction for SO_2 when firing mixed fuels needs revision. Until a revision is promulgated and finalized, enforcement discretion regarding this standard is suggested because compliance with the standard as written is not achievable. Additionally, TES requested changes to other Conditions in the ROP to update language that did not completely conform to the underlying applicable requirements and/or better align the Conditions to realistic onsite operations/practices.	Source-Wide EUBOILER1 EUBOILER2 EULIMESTORAGE EUASHUNLOAD FGBOILERS FGFUELSTORAGE

Appendix 7. Emission Calculations

The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in FGBOILERS.

NOx Compliance

40 CFR 60.44Da(a)(2): When two or more fuels are combusted simultaneously in an affected facility, the applicable emissions limit (E_n) is determined by proration using the following formula:

$$En = \frac{86w + 130x + 210y + 260z + 340v}{100}$$

Where:
En = Applicable NO_X emissions limit when multiple fuels are combusted simultaneously (ng/J heat input);
w = Percentage of total heat input derived from the combustion of fuels subject to the 86 ng/J heat input standard;
x = Percentage of total heat input derived from the combustion of fuels subject to the 130 ng/J heat input standard;
y = Percentage of total heat input derived from the combustion of fuels subject to the 210 ng/J heat input standard;
z = Percentage of total heat input derived from the combustion of fuels subject to the 260 ng/J heat input standard; and
v = Percentage of total heat input delivered from the combustion of fuels subject to the 340 ng/J heat input standard.

Petroleum Coke Compliance

If TES Filer City Station elects to accept deliveries of any petroleum coke at the facility after November 23,2015, the following formula shall be used to calculate the actual charge rate in pounds per day for the petroleum coke fuel. Coal and petroleum coke are delivered to the facility as a mixture of the two fuels. The fuel supplier provides documentation of the percentage of each fuel on a mass basis contained in the mixture.

$$PC = B_F \times PC_B$$

Where:
PC = Petroleum coke charge rate per boiler, in pounds per day;
B_F = Charge rate of blended fuel, in pounds per day;
PC_B = Percentage of petroleum coke contained in the blended fuel.

Appendix 8. Reporting

A. Annual, Semiannual, and Deviation Certification Reporting

The permittee shall use the MDEQ, AQD, Report Certification form (EQP 5736) and MDEQ, AQD, Deviation Report form (EQP 5737) for the annual, semiannual and deviation certification reporting referenced in the Reporting Section of the Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Alternative formats must meet the provisions of Rule 213(4)(c) and Rule 213(3)(c)(i), respectively, and be approved by the AQD District Supervisor.

B. Other Reporting

Specific reporting requirement formats and procedures are detailed in Part A or the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, Part B of this appendix is not applicable.

Appendix 9. Transport Rule (TR) Trading Program Title V Requirements

Description of TR Monitoring Provisions

The TR subject units, and the unit-specific monitoring provisions, at this source are identified in the following tables. These units are subject to the requirements for the TR NO_X Annual Trading Program, TR NO_X Ozone Season *Group 2* Trading Program, and TR SO_2 Group 1 Trading Program, which are included below as Sections I, II, and III, respectively.

Each unit will use one of the following as the monitoring methodology for each parameter as provided below and shall comply with the general monitoring, recordkeeping, reporting and other requirements in conditions 1 through 5 below and in paragraph (b) of Sections I, II, and III:

- Continuous emission monitoring system or systems (CEMS) requirements pursuant to 40 CFR Part 75, Subpart B (for SO2 monitoring) and 40 CFR Part 75, Subpart H (for NOX monitoring)
- Excepted monitoring system requirements for gas- and oil-fired units pursuant to 40 CFR Part 75, Appendix D
- Excepted monitoring system requirements for gas- and oil-fired peaking units pursuant to 40 CFR Part 75, Appendix E
- Low Mass Emissions excepted monitoring (LME) requirements for gas- and oil-fired units pursuant to 40 CFR 75.19
- EPA-approved alternative monitoring system requirements pursuant to 40 CFR Part 75, Subpart E

Unit ID: Unit 1	
Parameter	Monitoring Methodology
SO_2	Continuous emission monitoring system or systems (CEMS) requirements pursuant to 40 CFR Part 75, Subpart B
NOx	Continuous emission monitoring system or systems (CEMS) requirements pursuant to 40 CFR Part 75, Subpart H
Heat Input	Continuous emission monitoring system or systems (CEMS) requirements pursuant to 40 CFR Part 75, Subpart B (for SO2 monitoring) and 40 CFR Part 75, Subpart H (for NOX monitoring)

Unit ID: Unit 2	
Parameter	Monitoring Methodology
SO_2	Continuous emission monitoring system or systems (CEMS) requirements pursuant to 40 CFR Part 75, Subpart B
NOx	Continuous emission monitoring system or systems (CEMS) requirements pursuant to 40 CFR Part 75, Subpart H
Heat Input	Continuous emission monitoring system or systems (CEMS) requirements pursuant to 40 CFR Part 75, Subpart B (for SO2 monitoring) and 40 CFR Part 75, Subpart H (for NOX monitoring)

1. The above description of the monitoring used by a unit does not change, create an exemption from, or otherwise affect the monitoring, recordkeeping, and reporting requirements applicable to the unit under 40 CFR 97.430 through 97.435 (TR NO_X Annual Trading Program), 40 CFR 97.~~5~~*8*30 through 97.~~5~~*8*35 (TR NO_X Ozone Season *Group 2* Trading Program), and 40 CFR 97.630 through 97.635 (TR SO_2 Group 1 Trading Program). The monitoring, recordkeeping and reporting requirements applicable to each unit are included below in the standard conditions for the applicable TR trading programs.

2. Owners and operators must submit to the Administrator a monitoring plan for each unit in accordance with 40 CFR 75.53, 40 CFR 75.62 and 40 CFR 75.73, as applicable. The monitoring plan for each unit is available at the EPA's website at **http://www.epa.gov/airmarkets/emissions/monitoringplans.html.**

3. Owners and operators that want to use an alternative monitoring system must submit to the Administrator a petition requesting approval of the alternative monitoring system in accordance with 40 CFR Part 75, Subpart E and 40 CFR 75.66 and 97.435 (TR NO_X Annual Trading Program), 40 CFR 97.~~5~~*8*35 (TR NO_X Ozone Season *Group 2* Trading Program), and/or 40 CFR 97.635 (TR SO_2 Group 1 Trading Program). The Administrator's response approving or disapproving any petition for an alternative monitoring system is available on the EPA's website at **http://www.epa.gov/airmarkets/emissions/petitions.html.**

4. Owners and operators that want to use an alternative to any monitoring, recordkeeping, or reporting requirement under 40 CFR 97.430 through 97.434 (TR NO_X Annual Trading Program), 40 CFR 97.~~5~~*8*30 through 97.~~5~~*8*34 (TR NO_X Ozone Season *Group 2* Trading Program), and/or 40 CFR 97.630 through 97.634 (TR SO_2 Group 1 Trading Program) must submit to the Administrator a petition requesting approval of the alternative in accordance with 40 CFR 75.66 and 40 CFR 97.435 (TR NO_X Annual Trading Program), 40 CFR 97.~~5~~*8*35 (TR NO_X Ozone Season *Group 2* Trading Program), and/or 40 CFR 97.635 (TR SO_2 Group 1 Trading Program). The Administrator's response approving or disapproving any petition for an alternative to a monitoring, recordkeeping, or reporting requirement is available on the EPA's website at **http://www.epa.gov/airmarkets/emissions/petitions.html**.

5. The descriptions of monitoring applicable to the unit included above meet the requirement of 40 CFR 97.430 through 97.434 (TR NO_X Annual Trading Program), 40 CFR 97.~~5~~*8*30 through 97.~~5~~*8*34 (TR NO_X Ozone Season *Group 2* Trading Program), and 40 CFR 97.630 through 97.634 (TR SO_2 Group 1 Trading Program), and therefore minor permit modification procedures, in accordance with 40 CFR 70.7(e)(2)(i)(B) or 40 CFR 71.7(e)(1)(i)(B), may be used to add or change this unit's monitoring system description.

SECTION I: TR NO_X Annual Trading Program requirements (40 CFR 97.406)

(a) Designated representative requirements.

The owners and operators shall comply with the requirement to have a designated representative, and may have an alternate designated representative, in accordance with 40 CFR 97.413 through 97.418.

(b) Emissions monitoring, reporting, and recordkeeping requirements.

(1) The owners and operators, and the designated representative, of each TR NO_X Annual source and each TR NO_X Annual unit at the source shall comply with the monitoring, reporting, and recordkeeping requirements of 40 CFR 97.430 (general requirements, including installation, certification, and data accounting, compliance deadlines, reporting data, prohibitions, and long-term cold storage), 97.431 (initial monitoring system certification and recertification procedures), 97.432 (monitoring system out-of-control periods), 97.433 (notifications concerning monitoring), 97.434 (recordkeeping and reporting, including monitoring plans, certification applications, quarterly reports, and compliance certification), and 97.435 (petitions for alternatives to monitoring, recordkeeping, or reporting requirements).

(2) The emissions data determined in accordance with 40 CFR 97.430 through 97.435 shall be used to calculate allocations of TR NO_X Annual allowances under 40 CFR 97.411(a)(2) and (b) and 97.412 and to determine compliance with the TR NO_X Annual emissions limitation and assurance provisions under paragraph (c) below, provided that, for each monitoring location from which mass emissions are reported, the mass emissions amount used in calculating such allocations and determining such compliance shall be the mass emissions amount for the monitoring location determined in accordance with 40 CFR 97.430 through 97.435 and rounded to the nearest ton, with any fraction of a ton less than 0.50 being deemed to be zero.

(c) NO_X emissions requirements.

(1) TR NO_X Annual emissions limitation.

(i). As of the allowance transfer deadline for a control period in a given year, the owners and operators of each TR NO_X Annual source and each TR NO_X Annual unit at the source shall hold, in the source's compliance account, TR NO_X Annual allowances available for deduction for such control period under 40 CFR 97.424(a) in an amount not less than the tons of total NO_X emissions for such control period from all TR NO_X Annual units at the source.

(ii). If total NO_X emissions during a control period in a given year from the TR NO_X Annual units at a TR NO_X Annual source are in excess of the TR NO_X Annual emissions limitation set forth in paragraph (c)(1)(i) above, then:

(A). The owners and operators of the source and each TR NO_X Annual unit at the source shall hold the TR NO_X Annual allowances required for deduction under 40 CFR 97.424(d); and

(B). The owners and operators of the source and each TR NO_X Annual unit at the source shall pay any fine, penalty, or assessment or comply with any other remedy imposed, for the same violations, under the Clean Air Act, and each ton of such excess emissions and each day of such control period shall constitute a separate violation of 40 CFR part 97, subpart AAAAA and the Clean Air Act.

(2) TR NO_X Annual assurance provisions.

(i). If total NO_X emissions during a control period in a given year from all TR NO_X Annual units at TR NO_X Annual sources in the state and Indian country within the borders of such State exceed the state assurance level, then the owners and operators of such sources and units in each group of one or more sources and units having a common designated representative for such control period, where the common designated representative's share of such NO_X emissions during such control period exceeds the common designated representative's assurance level for the state and such control period, shall hold (in the assurance account established for the owners and operators of such group) TR NO_X Annual allowances available for deduction for such control period under 40 CFR 97.425(a) in an amount equal to two times the product (rounded to the nearest whole number), as determined by the Administrator in accordance with 40 CFR 97.425(b), of multiplying—(A) The quotient of the amount by which the common designated representative's share of such NO_X emissions exceeds the common designated representative's assurance level divided by the sum of the amounts, determined for all common designated representatives for such sources and units in the state and Indian country within the borders of such state for such control period, by which each common designated representative's share of such NO_X emissions exceeds the

respective common designated representative's assurance level; and (B) The amount by which total NO_X emissions from all TR NO_X Annual units at TR NO_X Annual sources in the state and Indian country within the borders of such state for such control period exceed the state assurance level.

(ii). The owners and operators shall hold the TR NO_X Annual allowances required under paragraph (c)(2)(i) above, as of midnight of November 1 (if it is a business day), or midnight of the first business day thereafter (if November 1 is not a business day), immediately after such control period.

(iii). Total NO_X emissions from all TR NO_X Annual units at TR NO_X Annual sources in the State and Indian country within the borders of such state during a control period in a given year exceed the state assurance level if such total NO_X emissions exceed the sum, for such control period, of the state NO_X Annual trading budget under 40 CFR 97.410(a) and the state's variability limit under 40 CFR 97.410(b).

(iv). It shall not be a violation of 40 CFR Part 97, Subpart AAAAA or of the Clean Air Act if total NO_X emissions from all TR NO_X Annual units at TR NO_X Annual sources in the State and Indian country within the borders of such State during a control period exceed the state assurance level or if a common designated representative's share of total NO_X emissions from the TR NO_X Annual units at TR NO_X Annual sources in the state and Indian country within the borders of such state during a control period exceeds the common designated representative's assurance level.

(v). To the extent the owners and operators fail to hold TR NO_X Annual allowances for a control period in a given year in accordance with paragraphs (c)(2)(i) through (iii) above,

(A). The owners and operators shall pay any fine, penalty, or assessment or comply with any other remedy imposed under the Clean Air Act; and

(B). Each TR NO_X Annual allowance that the owners and operators fail to hold for such control period in accordance with paragraphs (c)(2)(i) through (iii) above and each day of such control period shall constitute a separate violation of 40 CFR Part 97, Subpart AAAAA and the Clean Air Act.

(3) Compliance periods.

(i). A TR NO_X Annual unit shall be subject to the requirements under paragraph (c)(1) above for the control period starting on the later of January 1, 2015, or the deadline for meeting the unit's monitor certification requirements under 40 CFR 97.430(b) and for each control period thereafter.

(ii). A TR NO_X Annual unit shall be subject to the requirements under paragraph (c)(2) above for the control period starting on the later of January 1, 2017 or the deadline for meeting the unit's monitor certification requirements under 40 CFR 97.430(b) and for each control period thereafter.

(4) Vintage of allowances held for compliance.

(i). A TR NO_X Annual allowance held for compliance with the requirements under paragraph (c)(1)(i) above for a control period in a given year must be a TR NO_X Annual allowance that was allocated for such control period or a control period in a prior year.

(ii). A TR NO_X Annual allowance held for compliance with the requirements under paragraphs (c)(1)(ii)(A) and (2)(i) through (iii) above for a control period in a given year must be a TR NO_X Annual allowance that was allocated for a control period in a prior year or the control period in the given year or in the immediately following year.

(5) Allowance Management System requirements. Each TR NO_X Annual allowance shall be held in, deducted from, or transferred into, out of, or between Allowance Management System accounts in accordance with 40 CFR Part 97, Subpart AAAAA.

(6) Limited authorization. A TR NO_X Annual allowance is a limited authorization to emit one ton of NO_X during the control period in one year. Such authorization is limited in its use and duration as follows:

(i). Such authorization shall only be used in accordance with the TR NO_X Annual Trading Program; and

(ii). Notwithstanding any other provision of 40 CFR Part 97, the Administrator has the authority to terminate or limit the use and duration of such authorization to the extent the Administrator determines is necessary or appropriate to implement any provision of the Clean Air Act.

(7) Property right. A TR NO_X Annual allowance does not constitute a property right.

(d) Title V permit revision requirements.

(1) No Title V permit revision shall be required for any allocation, holding, deduction, or transfer of TR NO_X Annual allowances in accordance with 40 CFR Part 97, Subpart AAAAA.

(2) This permit incorporates the TR emissions monitoring, recordkeeping and reporting requirements pursuant to 40 CFR 97.430 through 97.435, and the requirements for a continuous emission monitoring system (pursuant to 40 CFR Part 75, Subparts B and H), an excepted monitoring system (pursuant to 40 CFR Part 75, Appendices D and E), a low mass emissions excepted monitoring methodology (pursuant to 40 CFR 75.19), and an alternative monitoring system (pursuant to 40 CFR Part 75, Subpart E). Therefore, the Description of TR Monitoring Provisions table for units identified in this permit may be added to, or changed, in this Title V permit using minor permit modification procedures in accordance with 40 CFR 97.406(d)(2) and 70.7(e)(2)(i)(B) or 71.7(e)(1)(i)(B).

(e) Additional recordkeeping and reporting requirements.

(1) Unless otherwise provided, the owners and operators of each TR NO_X Annual source and each TR NO_X Annual unit at the source shall keep on site at the source each of the following documents (in hardcopy or electronic format) 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 Administrator.

(i). The certificate of representation under 40 CFR 97.416 for the designated representative for the source and each TR NO_X Annual unit 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 certificate of representation and documents are superseded because of the submission of a new certificate of representation under 40 CFR 97.416 changing the designated representative.

(ii). All emissions monitoring information, in accordance with 40 CFR Part 97, Subpart AAAAA.

(iii). Copies of all reports, compliance certifications, and other submissions and all records made or required under, or to demonstrate compliance with the requirements of, the TR NO_X Annual Trading Program.

(2) The designated representative of a TR NO_X Annual source and each TR NO_X Annual unit at the source shall make all submissions required under the TR NO_X Annual Trading Program, except as provided in 40 CFR 97.418. This requirement does not change, create an exemption from, or otherwise affect the responsible official submission requirements under a title V operating permit program in 40 CFR Parts 70 and 71.

(f) Liability.

(1) Any provision of the TR NO_X Annual Trading Program that applies to a TR NO_X Annual source or the designated representative of a TR NO_X Annual source shall also apply to the owners and operators of such source and of the TR NO_X Annual units at the source.

(2) Any provision of the TR NO_X Annual Trading Program that applies to a TR NO_X Annual unit or the designated representative of a TR NO_X Annual unit shall also apply to the owners and operators of such unit.

(g) Effect on other authorities.

No provision of the TR NO_X Annual Trading Program or exemption under 40 CFR 97.405 shall be construed as exempting or excluding the owners and operators, and the designated representative, of a TR NO_X Annual source or TR NO_X Annual unit from compliance with any other provision of the applicable, approved state implementation plan, a federally enforceable permit, or the Clean Air Act.

(h) Effect on units in Indian country.

Notwithstanding the provisions of paragraphs (a) through (g) above, paragraphs (a) through (g) shall be deemed not to impose any requirements on any source or unit, or any owner, operator, or designated representative with regard to any source or unit, in Indian country within the borders of the state.

SECTION II: TR NO_X Ozone Season *Group 2* Trading Program Requirements (40 CFR 97.~~5~~*8*06)

(a) Designated representative requirements.

The owners and operators shall comply with the requirement to have a designated representative, and may have an alternate designated representative, in accordance with 40 CFR 97.~~5~~*8*13 through 97.~~5~~*8*18.

(b) Emissions monitoring, reporting, and recordkeeping requirements.

(1) The owners and operators, and the designated representative, of each TR NO_X Ozone Season *Group 2* source and each TR NO_X Ozone Season *Group 2* unit at the source shall comply with the monitoring, reporting, and recordkeeping requirements of 40 CFR 97.~~5~~*8*30 (general requirements, including installation, certification, and data accounting, compliance deadlines, reporting data, prohibitions, and long-term cold storage), 97.~~5~~*8*31 (initial monitoring system certification and recertification procedures), 97.~~5~~*8*32 (monitoring system out-of-control periods), 97.~~5~~*8*33 (notifications concerning monitoring), 97.~~5~~*8*34 (recordkeeping and reporting, including monitoring plans, certification applications, quarterly reports, and compliance certification), and 97.~~5~~*8*35 (petitions for alternatives to monitoring, recordkeeping, or reporting requirements).

(2) The emissions data determined in accordance with 40 CFR 97.~~5~~*8*30 through 97.~~5~~*8*35 shall be used to calculate allocations of TR NO_X Ozone Season *Group 2* allowances under 40 CFR 97.~~5~~*8*11(a)(2) and (b) and 97.~~5~~*8*12 and to determine compliance with the TR NO_X Ozone Season *Group 2* emissions limitation and assurance provisions under paragraph (c) below, provided that, for each monitoring location from which mass emissions are reported, the mass emissions amount used in calculating such allocations and determining such compliance shall be the mass emissions amount for the monitoring location determined in accordance with 40 CFR 97.~~5~~*8*30 through 97.~~5~~*8*35 and rounded to the nearest ton, with any fraction of a ton less than 0.50 being deemed to be zero.

(c) NO_X emissions requirements.

(1) TR NO_X Ozone Season *Group 2* emissions limitation.

(i). As of the allowance transfer deadline for a control period in a given year, the owners and operators of each TR NO_X Ozone Season *Group 2* source and each TR NO_X Ozone Season *Group 2* unit at the source shall hold, in the source's compliance account, TR NO_X Ozone Season *Group 2* allowances available for deduction for such control period under 40 CFR 97.~~5~~*8*24(a) in an amount not less than the tons of total NO_X emissions for such control period from all TR NO_X Ozone Season *Group 2* units at the source.

(ii). If total NO_X emissions during a control period in a given year from the TR NO_X Ozone Season *Group 2* units at a TR NO_X Ozone Season *Group 2* source are in excess of the TR NO_X Ozone Season *Group 2* emissions limitation set forth in paragraph (c)(1)(i) above, then:

(A). The owners and operators of the source and each TR NO_X Ozone Season *Group 2* unit at the source shall hold the TR NO_X Ozone Season *Group 2* allowances required for deduction under 40 CFR 97.~~5~~*8*24(d); and

(B). The owners and operators of the source and each TR NO_X Ozone Season *Group 2* unit at the source shall pay any fine, penalty, or assessment or comply with any other remedy imposed, for the same violations, under the Clean Air Act, and each ton of such excess emissions and each day of such control period shall constitute a separate violation of 40 CFR Part 97, Subpart *EEEEE*~~BBBBB~~ and the Clean Air Act.

(2) TR NO_X Ozone Season *Group 2* assurance provisions.

(i). If total NO_X emissions during a control period in a given year from all TR NO_X Ozone Season *Group 2* units at TR NO_X Ozone Season *Group 2* sources in the state and Indian country within the borders of such state exceed the state assurance level, then the owners and operators of such sources and units in each group of one or more sources and units having a common designated representative for such control period, where the common designated representative's share of such NO_X emissions during such control period exceeds the common designated representative's assurance level for the state and such control period, shall hold (in the assurance account established for the owners and operators of such group) TR NO_X Ozone Season *Group 2* allowances available for deduction for such control period under 40 CFR 97.~~5~~*8*25(a) in an amount equal to two times the product (rounded to the nearest whole number), as determined by the Administrator in accordance with 40 CFR 97.~~5~~*8*25(b), of multiplying—

(A). The quotient of the amount by which the common designated representative's share of such NO_X emissions exceeds the common designated representative's assurance level divided by the sum of the amounts, determined for all common designated representatives for such sources and units in the state and Indian country within the borders of such state for such control period, by which each common designated representative's share of such NO_X emissions exceeds the respective common designated representative's assurance level; and

(B). The amount by which total NO_X emissions from all TR NO_X Ozone Season *Group 2* units at TR NO_X Ozone Season *Group 2* sources in the state and Indian country within the borders of such state for such control period exceed the state assurance level.

(ii). The owners and operators shall hold the TR NO_X Ozone Season *Group 2* allowances required under paragraph (c)(2)(i) above, as of midnight of November 1 (if it is a business day), or midnight of the first business day thereafter (if November 1 is not a business day), immediately after such control period.

(iii). Total NO_X emissions from all TR NO_X Ozone Season *Group 2* units at TR NO_X Ozone Season *Group 2* sources in the state and Indian country within the borders of such state during a control period in a given year exceed the state assurance level if such total NO_X emissions exceed the sum, for such control period, of the State NO_X Ozone Season *Group 2* trading budget under 40 CFR 97.~~5~~*8*10(a) and the state's variability limit under 40 CFR 97.~~5~~*8*10(b).

(iv). It shall not be a violation of 40 CFR Part 97, Subpart *EEEEE*~~BBBBB~~ or of the Clean Air Act if total NO_X emissions from all TR NO_X Ozone Season *Group 2* units at TR NO_X Ozone Season sources in the state and Indian country within the borders of such state during a control period exceed the state assurance level or if a common designated representative's share of total NO_X emissions from the TR NO_X Ozone Season *Group 2* units at TR NO_X Ozone Season *Group 2* sources in the state and Indian country within the borders of such state during a control period exceeds the common designated representative's assurance level.

(v). To the extent the owners and operators fail to hold TR NO_X Ozone Season *Group 2* allowances for a control period in a given year in accordance with paragraphs (c)(2)(i) through (iii) above,

(A). The owners and operators shall pay any fine, penalty, or assessment or comply with any other remedy imposed under the Clean Air Act; and

(B). Each TR NO_X Ozone Season *Group 2* allowance that the owners and operators fail to hold for such control period in accordance with paragraphs (c)(2)(i) through (iii) above and each day of such control period shall constitute a separate violation of 40 CFR Part 97, Subpart *EEEEE*~~BBBBB~~ and the Clean Air Act.

(3) Compliance periods.

(i). A TR NO_X Ozone Season *Group 2* unit shall be subject to the requirements under paragraph (c)(1) above for the control period starting on the later of May 1, 2017~~5~~ or the deadline for meeting the unit's monitor certification requirements under 40 CFR 97.~~5~~*8*30(b) and for each control period thereafter.

(ii). A TR NO_X Ozone Season *Group 2* unit shall be subject to the requirements under paragraph (c)(2) above for the control period starting on the later of May 1, 2017 or the deadline for meeting the unit's monitor certification requirements under 40 CFR 97.~~5~~*8*30(b) and for each control period thereafter.

(4) Vintage of allowances held for compliance.

(i). A TR NO_X Ozone Season *Group 2* allowance held for compliance with the requirements under paragraph (c)(1)(i) above for a control period in a given year must be a TR NO_X Ozone Season *Group 2* allowance that was allocated for such control period or a control period in a prior year.

(ii). A TR NO_X Ozone Season *Group 2* allowance held for compliance with the requirements under paragraphs (c)(1)(ii)(A) and (2)(i) through (iii) above for a control period in a given year must be a TR NO_X Ozone Season *Group 2* allowance that was allocated for a control period in a prior year or the control period in the given year or in the immediately following year.

(5) Allowance Management System requirements. Each TR NO_X Ozone Season *Group 2* allowance shall be held in, deducted from, or transferred into, out of, or between Allowance Management System accounts in accordance with 40 CFR Part 97, Subpart *EEEEE*~~BBBBB~~.

(6) Limited authorization. A TR NO_X Ozone Season *Group 2* allowance is a limited authorization to emit one ton of NO_X during the control period in one year. Such authorization is limited in its use and duration as follows:

(i). Such authorization shall only be used in accordance with the TR NO_X Ozone Season *Group 2* Trading Program; and

(ii). Notwithstanding any other provision of 40 CFR Part 97, Subpart *EEEEE*~~BBBBB~~, the Administrator has the authority to terminate or limit the use and duration of such authorization to the extent the Administrator determines is necessary or appropriate to implement any provision of the Clean Air Act.

(7) Property right. A TR NO_X Ozone Season *Group 2* allowance does not constitute a property right.

(d) Title V permit revision requirements.

(1) No title V permit revision shall be required for any allocation, holding, deduction, or transfer of TR NO_X Ozone Season *Group 2* allowances in accordance with 40 CFR Part 97, Subpart *EEEEE*~~BBBBB~~.

(2) This permit incorporates the TR emissions monitoring, recordkeeping and reporting requirements pursuant to 40 CFR 97.~~5~~*8*30 through 97.~~5~~*8*35, and the requirements for a continuous emission monitoring system (pursuant to 40 CFR Part 75, Subparts B and H), an excepted monitoring system (pursuant to 40 CFR Part 75, Appendices D and E), a low mass emissions excepted monitoring methodology (pursuant to 40 CFR 75.19), and an alternative monitoring system (pursuant to 40 CFR Part 75, Subpart E). Therefore, the Description of TR Monitoring Provisions table for units identified in this permit may be added to, or changed, in this Title V permit using minor permit modification procedures in accordance with 40 CFR 97.~~5~~*8*06(d)(2) and 70.7(e)(2)(i)(B) or 71.7(e)(1)(i)(B).

(e) Additional recordkeeping and reporting requirements.

(1) Unless otherwise provided, the owners and operators of each TR NO_X Ozone Season *Group 2* source and each TR NO_X Ozone Season *Group 2* unit at the source shall keep on site at the source each of the following documents (in hardcopy or electronic format) 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 Administrator.

(i). The certificate of representation under 40 CFR 97.~~5~~*8*16 for the designated representative for the source and each TR NO_X Ozone Season *Group 2* unit 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 certificate of representation and documents are superseded because of the submission of a new certificate of representation under 40 CFR 97.~~5~~*8*16 changing the designated representative.

(ii). All emissions monitoring information, in accordance with 40 CFR Part 97, subpart *EEEEE*~~BBBBB~~.

(iii). Copies of all reports, compliance certifications, and other submissions and all records made or required under, or to demonstrate compliance with the requirements of, the TR NO_X Ozone Season *Group 2* Trading Program.

(2) The designated representative of a TR NO_X Ozone Season *Group 2* source and each TR NO_X Ozone Season *Group 2* unit at the source shall make all submissions required under the TR NO_X Ozone Season *Group 2* Trading Program, except as provided in 40 CFR 97.~~5~~*8*18. This requirement does not change, create an exemption from, or otherwise affect the responsible official submission requirements under a title V operating permit program in 40 CFR Parts 70 and 71.

(f) Liability.

(1) Any provision of the TR NO_X Ozone Season *Group 2* Trading Program that applies to a TR NO_X Ozone Season *Group 2* source or the designated representative of a TR NO_X Ozone Season *Group 2* source shall also apply to the owners and operators of such source and of the TR NO_X Ozone Season *Group 2* units at the source.

(2) Any provision of the TR NO_X Ozone Season *Group 2* Trading Program that applies to a TR NO_X Ozone Season *Group 2* unit or the designated representative of a TR NO_X Ozone Season *Group 2* unit shall also apply to the owners and operators of such unit.

(g) Effect on other authorities.

No provision of the TR NO_X Ozone Season *Group 2* Trading Program or exemption under 40 CFR 97.~~5~~*8*05 shall be construed as exempting or excluding the owners and operators, and the designated representative, of a TR NO_X Ozone Season *Group 2* source or TR NO_X Ozone Season *Group 2* unit from compliance with any other provision of the applicable, approved state implementation plan, a federally enforceable permit, or the Clean Air Act.

(h) Effect on units in Indian country.

Notwithstanding the provisions of paragraphs (a) through (g) above, paragraphs (a) through (g) shall be deemed not to impose any requirements on any source or unit, or any owner, operator, or designated representative with regard to any source or unit, in Indian country within the borders of the state.

SECTION III: TR SO_2 Group 1 Trading Program requirements (40 CFR 97.606)

(a) Designated representative requirements.

The owners and operators shall comply with the requirement to have a designated representative, and may have an alternate designated representative, in accordance with 40 CFR 97.613 through 97.618.

(b) Emissions monitoring, reporting, and recordkeeping requirements.

(1) The owners and operators, and the designated representative, of each TR SO_2 Group 1 source and each TR SO_2 Group 1 unit at the source shall comply with the monitoring, reporting, and recordkeeping requirements of 40 CFR 97.630 (general requirements, including installation, certification, and data accounting, compliance deadlines, reporting data, prohibitions, and long-term cold storage), 97.631 (initial monitoring system certification and recertification procedures), 97.632 (monitoring system out-of-control periods), 97.633 (notifications concerning monitoring), 97.634 (recordkeeping and reporting, including monitoring plans, certification applications, quarterly reports, and compliance certification), and 97.635 (petitions for alternatives to monitoring, recordkeeping, or reporting requirements).

(2) The emissions data determined in accordance with 40 CFR 97.630 through 97.635 shall be used to calculate allocations of TR SO_2 Group 1 allowances under 40 CFR 97.611(a)(2) and (b) and 97.612 and to determine compliance with the TR SO_2 Group 1 emissions limitation and assurance provisions under paragraph (c) below, provided that, for each monitoring location from which mass emissions are reported, the mass emissions amount used in calculating such allocations and determining such compliance shall be the mass emissions amount for the monitoring location determined in accordance with 40 CFR 97.630 through 97.635 and rounded to the nearest ton, with any fraction of a ton less than 0.50 being deemed to be zero.

(c) SO_2 emissions requirements.

(1) TR SO_2 Group 1 emissions limitation.

(i). As of the allowance transfer deadline for a control period in a given year, the owners and operators of each TR SO_2 Group 1 source and each TR SO2 Group 1 unit at the source shall hold, in the source's compliance account, TR SO_2 Group 1 allowances available for deduction for such control period under 40 CFR 97.624(a) in an amount not less than the tons of total SO_2 emissions for such control period from all TR SO_2 Group 1 units at the source.

(ii). If total SO_2 emissions during a control period in a given year from the TR SO_2 Group 1 units at a TR SO_2 Group 1 source are in excess of the TR SO_2 Group 1 emissions limitation set forth in paragraph (c)(1)(i) above, then:

(A). The owners and operators of the source and each TR SO_2 Group 1 unit at the source shall hold the TR SO_2 Group 1 allowances required for deduction under 40 CFR 97.624(d); and

(B). The owners and operators of the source and each TR SO_2 Group 1 unit at the source shall pay any fine, penalty, or assessment or comply with any other remedy imposed, for the same violations, under the Clean Air Act, and each ton of such excess emissions and each day of such control period shall constitute a separate violation 40 CFR part 97, subpart CCCCC and the Clean Air Act.

(2) TR SO_2 Group 1 assurance provisions.

(i). If total SO_2 emissions during a control period in a given year from all TR SO_2 Group 1 units at TR SO_2 Group 1 sources in the state and Indian country within the borders of such state exceed the state assurance level, then the owners and operators of such sources and units in each group of one or more sources and units having a common designated representative for such control period, where the common designated representative's share of such SO_2 emissions during such control period exceeds the common designated representative's assurance level for the state and such control period, shall hold (in the assurance account established for the owners and operators of such group) TR SO_2 Group 1 allowances available for deduction for such control period under 40 CFR 97.625(a) in an amount equal to two times the product (rounded to the nearest whole number), as determined by the Administrator in accordance with 40 CFR 97.625(b), of multiplying—

(A). The quotient of the amount by which the common designated representative's share of such SO_2 emissions exceeds the common designated representative's assurance level divided by the sum of the amounts, determined for all common designated representatives for such sources and units in the state and Indian country within the borders of such state for such

control period, by which each common designated representative's share of such SO_2 emissions exceeds the respective common designated representative's assurance level; and

(B). The amount by which total SO_2 emissions from all TR SO_2 Group 1 units at TR SO_2 Group 1 sources in the state and Indian country within the borders of such state for such control period exceed the state assurance level.

(ii). The owners and operators shall hold the TR SO_2 Group 1 allowances required under paragraph (c)(2)(i) above, as of midnight of November 1 (if it is a business day), or midnight of the first business day thereafter (if November 1 is not a business day), immediately after such control period.

(iii). Total SO_2 emissions from all TR SO_2 Group 1 units at TR SO_2 Group 1 sources in the state and Indian country within the borders of such state during a control period in a given year exceed the state assurance level if such total SO_2 emissions exceed the sum, for such control period, of the state SO_2 Group 1 trading budget under 40 CFR 97.610(a) and the state's variability limit under 40 CFR 97.610(b).

(iv). It shall not be a violation of 40 CFR Part 97, Subpart CCCCC or of the Clean Air Act if total SO_2 emissions from all TR SO_2 Group 1 units at TR SO_2 Group 1 sources in the state and Indian country within the borders of such state during a control period exceed the state assurance level or if a common designated representative's share of total SO_2 emissions from the TR SO_2 Group 1 units at TR SO_2 Group 1 sources in the state and Indian country within the borders of such state during a control period exceeds the common designated representative's assurance level.

(v). To the extent the owners and operators fail to hold TR SO_2 Group 1 allowances for a control period in a given year in accordance with paragraphs (c)(2)(i) through (iii) above,

(A). The owners and operators shall pay any fine, penalty, or assessment or comply with any other remedy imposed under the Clean Air Act; and

(B). Each TR SO_2 Group 1 allowance that the owners and operators fail to hold for such control period in accordance with paragraphs (c)(2)(i) through (iii) above and each day of such control period shall constitute a separate violation of 40 CFR Part 97, Subpart CCCCC and the Clean Air Act.

(3) Compliance periods.

(i). A TR SO_2 Group 1 unit shall be subject to the requirements under paragraph (c)(1) above for the control period starting on the later of January 1, 2015 or the deadline for meeting the unit's monitor certification requirements under 40 CFR 97.630(b) and for each control period thereafter.

(ii). A TR SO_2 Group 1 unit shall be subject to the requirements under paragraph (c)(2) above for the control period starting on the later of January 1, 2017 or the deadline for meeting the unit's monitor certification requirements under 40 CFR 97.630(b) and for each control period thereafter.

(4) Vintage of allowances held for compliance.

(i). A TR SO_2 Group 1 allowance held for compliance with the requirements under paragraph (c)(1)(i) above for a control period in a given year must be a TR SO_2 Group 1 allowance that was allocated for such control period or a control period in a prior year.

(ii). A TR SO_2 Group 1 allowance held for compliance with the requirements under paragraphs (c)(1)(ii)(A) and (2)(i) through (iii) above for a control period in a given year must be a TR SO_2 Group 1 allowance that was allocated for a control period in a prior year or the control period in the given year or in the immediately following year.

(5) Allowance Management System requirements. Each TR SO_2 Group 1 allowance shall be held in, deducted from, or transferred into, out of, or between Allowance Management System accounts in accordance with 40 CFR Part 97, Subpart CCCCC.

(6) Limited authorization. A TR SO_2 Group 1 allowance is a limited authorization to emit one ton of SO_2 during the control period in one year. Such authorization is limited in its use and duration as follows:

(i). Such authorization shall only be used in accordance with the TR SO_2 Group 1 Trading Program; and

(ii). Notwithstanding any other provision of 40 CFR Part 97, Subpart CCCCC, the Administrator has the authority to terminate or limit the use and duration of such authorization to the extent the Administrator determines is necessary or appropriate to implement any provision of the Clean Air Act.

(7) Property right. A TR SO_2 Group 1 allowance does not constitute a property right.

(d) Title V permit revision requirements.

(1) No title V permit revision shall be required for any allocation, holding, deduction, or transfer of TR SO_2 Group 1 allowances in accordance with 40 CFR Part 97, Subpart CCCCC.

(2) This permit incorporates the TR emissions monitoring, recordkeeping and reporting requirements pursuant to 40 CFR 97.630 through 97.635, and the requirements for a continuous emission monitoring system (pursuant to 40 CFR Part 75, Subparts B and H), an excepted monitoring system (pursuant to 40 CFR Part 75, Appendices D and E), a low mass emissions excepted monitoring methodology (pursuant to 40 CFR part 75.19), and an alternative monitoring system (pursuant to 40 CFR Part 75, Subpart E), Therefore, the Description of TR Monitoring Provisions table for units identified in this permit may be added to, or changed, in this Title V permit using minor permit modification procedures in accordance with 40 CFR 97.606(d)(2) and 70.7(e)(2)(i)(B) or 71.7(e)(1)(i)(B).

(e) Additional recordkeeping and reporting requirements.

(1) Unless otherwise provided, the owners and operators of each TR SO_2 Group 1 source and each TR SO_2 Group 1 unit at the source shall keep on site at the source each of the following documents (in hardcopy or electronic format) 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 Administrator.

(i). The certificate of representation under 40 CFR 97.616 for the designated representative for the source and each TR SO_2 Group 1 unit 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 certificate of representation and documents are superseded because of the submission of a new certificate of representation under 40 CFR 97.616 changing the designated representative.

(ii). All emissions monitoring information, in accordance with 40 CFR part 97, subpart CCCCC.

(iii). Copies of all reports, compliance certifications, and other submissions and all records made or required under, or to demonstrate compliance with the requirements of, the TR SO_2 Group 1 Trading Program.

(2) The designated representative of a TR SO_2 Group 1 source and each TR SO_2 Group 1 unit at the source shall make all submissions required under the TR SO_2 Group 1 Trading Program, except as provided in 40 CFR 97.618. This requirement does not change, create an exemption from, or otherwise affect the responsible official submission requirements under a title V operating permit program in 40 CFR Parts 70 and 71.

(f) Liability.

(1) Any provision of the TR SO_2 Group 1 Trading Program that applies to a TR SO_2 Group 1 source or the designated representative of a TR SO_2 Group 1 source shall also apply to the owners and operators of such source and of the TR SO_2 Group 1 units at the source.

(2) Any provision of the TR SO_2 Group 1 Trading Program that applies to a TR SO_2 Group 1 unit or the designated representative of a TR SO_2 Group 1 unit shall also apply to the owners and operators of such unit.

(g) Effect on other authorities.

No provision of the TR SO_2 Group 1 Trading Program or exemption under 40 CFR 97.605 shall be construed as exempting or excluding the owners and operators, and the designated representative, of a TR SO_2 Group 1 source or TR SO_2 Group 1 unit from compliance with any other provision of the applicable, approved state implementation plan, a federally enforceable permit, or the Clean Air Act.

(h) Effect on units in Indian country.

Notwithstanding the provisions of paragraphs (a) through (g) above, paragraphs (a) through (g) shall be deemed not to impose any requirements on any source or unit, or any owner, operator, or designated representative with regard to any source or unit, in Indian country within the borders of the state.

EGLE

MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
AIR QUALITY DIVISION

RENEWABLE OPERATING PERMIT
REPORT CERTIFICATION

Authorized by 1994 P.A. 451, as amended. Failure to provide this information may result in civil and/or criminal penalties.

Reports submitted pursuant to R 336.1213 (Rule 213), subrules (3)(c) and/or (4)(c), of Michigan's Renewable Operating Permit (ROP) program must be certified by a responsible official. Additional information regarding the reports and documentation listed below must be kept on file for at least 5 years, as specified in Rule 213(3)(b)(ii), and be made available to the Department of Environment, Great Lakes, and Energy, Air Quality Division upon request.

Source Name T.E.S. Filer City Station County Manistee

Source Address 700 Mee Street City Filer City

AQD Source ID (SRN) N1685 ROP No. MI-ROP-N1685-2015b ROP Section No. N/A

Please check the appropriate box(es):

☐ **Annual Compliance Certification (Pursuant to Rule 213(4)(c))**

Reporting period (provide inclusive dates): From _____ To _____

☐ 1. During the entire reporting period, this source was in compliance with **ALL** terms and conditions contained in the ROP, each term and condition of which is identified and included by this reference. The method(s) used to determine compliance is/are the method(s) specified in the ROP.

☐ 2. During the entire reporting period this source was in compliance with all terms and conditions contained in the ROP, each term and condition of which is identified and included by this reference, **EXCEPT** for the deviations identified on the enclosed deviation report(s). The method used to determine compliance for each term and condition is the method specified in the ROP, unless otherwise indicated and described on the enclosed deviation report(s).

☐ **Semi-Annual (or More Frequent) Report Certification (Pursuant to Rule 213(3)(c))**

Reporting period (provide inclusive dates): From _____ To _____

☐ 1. During the entire reporting period, **ALL** monitoring and associated recordkeeping requirements in the ROP were met and no deviations from these requirements or any other terms or conditions occurred.

☐ 2. During the entire reporting period, all monitoring and associated recordkeeping requirements in the ROP were met and no deviations from these requirements or any other terms or conditions occurred, **EXCEPT** for the deviations identified on the enclosed deviation report(s).

☒ **Other Report Certification**

Reporting period (provide inclusive dates): From NA To NA

Additional monitoring reports or other applicable documents required by the ROP are attached as described:

Submission of most recent Fugitive Dust Plan, Construction Demo Waste Wood Monitoring Plan, Maintenance Management Plan, and the Compliance Assurance Monitoring Plan for inclusion in the ROP Renewal.

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this report and the supporting enclosures are true, accurate and complete

Henry M. Hoffman	General Manager	231-723-6573
Name of Responsible Official (print or type)	Title	Phone Number

Henry M. Hoffman — 10-4-2019

Signature of Responsible Official — Date

* Photocopy this form as needed.

TES FILER CITY STATION

Fugitive Dust Control Plan

SRN: N1685

July 24, 2012

Amended August 30, 2019

1.0 INTRODUCTION

The TES Filer City Station Renewable Operating Permit (ROP) requires that TES Filer City station not operate the facility unless a fugitive dust plan, approved by the Department of Environment, Great Lakes and Energy (EGLE)-AQD District Supervisor, is implemented and maintained. The following sections outline the Fugitive Dust Plan for Source-Wide operations in accordance with 40 CFR 52.21. Although TES does not currently fire petcoke in the boiler units at the time of this plan revision, this fugitive dust plan still includes it as a fuel to manage in this program in the event it is used again at the site.

2.0 FUGITIVE DUST CONTROL PLAN

2.1 EUCOALPETCKSTORAGE

Vessel Unloading – Daylight hours

- Vessel unloading shall be monitored by the coal handlers or the plant control room via camera. If fugitive dust is observed at unloading coal/petcoke pile, vessels shall be instructed to add sufficient water to the offloading coal/petcoke to eliminate dusting.
- When unloading occurs during non-daylight periods, vessels shall add sufficient water to eliminate dusting.
- Minimum drop heights shall be maintained within the capabilities of the vessel unloading boom.

Plant Fueling Operations

- Coal handlers shall monitor the fuel pile and adjacent areas for fugitive dust during plant fueling and boat offloading operations and apply sufficient water as needed to effectively control fugitive dust.
- During periods when plant fueling or boat unloading are not underway, plant control room operators shall monitor the coal pile and adjacent areas for fugitive dust, and apply sufficient water, as needed, to effectively control fugitive dust that may be observed.

NOTE: TES Filer City Station utilizes a high pressure watering system where individual water nozzles can be activated by remote control to control dust on the fuel pile and adjacent areas. The pile can be monitored by camera from the control room. Thus, water can be placed precisely where fugitive dust is observed. The plant keeps logs of operational hours of the water sprinkling system and the amount of water used for such activity.

2.2 UNPAVED AREAS

TES Filer City Station shall apply dust suppressant at a suitable concentration and quantity to effectively control fugitive dust on all unpaved areas where dust is created during normal plant activities. Dust suppressant shall be applied when fugitive dust is observed in these areas. Unpaved areas that are landscaped, covered with stone, planted with vegetation, or otherwise do not generate fugitive dust during normal activities, are excluded.

TES Filer City Station shall record date and volume for each dust suppressant application made.

2.3 PAVED AREAS

TES Filer City Station shall clean paved roads and parking areas that accumulate dust-generating material, utilizing a wet sweeper at a frequency to sufficient control fugitive dust.

TES Filer City Station shall record the date that each sweeping activity is made.

2.4 TRAFFIC SPEEDS

Vehicular traffic on all plant roadways shall be limited to a maximum speed of 10 miles per hour and shall be posted near the plant entrance.

T.E.S. FILER CITY STATION

MAINTENANCE MANAGEMENT PLAN
FOR
BOILERS #1 & #2, SCRUBBERS, LIME SLURRY,
BAGHOUSES AND CEM EQUIPMENT

Revised
May 2019

TABLE OF CONTENTS

1.0 General Information

T.E.S. Filer City Station is a 60 MW plant that burns coal, tire derived fuel, wood bark waste and natural gas. The plant is also permitted to burn petroleum coke and construction demolition waste, but these fuels are not routinely utilized. Pursuant to an Administrative Consent Order with the US EPA, if the facility accepts any deliveries of petroleum coke, then ambient monitoring for particulate matter with a mean diameter of less than 10 microns (PM_{10}) must be conducted consistent with Appendix 3 of the Renewable Operating Permit (ROP).

The intent of this plan is to list the responsibilities of various personnel and provide procedures to be used by the employees to correct problems.

2.0 Responsibilities

2.1 Plant Manager

The Plant Manager is responsible for the compliance with all permit limits and conditions of ROP and with the content of this Maintenance Management Plan.

2.2 Operations Superintendent

The Operations Superintendent will control the daily operations of the plant in assuring that operators are following the procedures outlined in the ROP and the Maintenance Management Plan. This role also assures that the plant operators are properly trained and experienced in the handling of plant upsets.

2.3 Maintenance Supervisor

The Maintenance Supervisor will control the daily Maintenance and Instrument, Control & Electrician operations. This role ensures that maintenance will be performed in a timely manner and that appropriate spare parts are available at the plant per the manufacturer's recommendations and plant operating experience.

2.4 Environmental Coordinator

The Environmental Coordinator is a person, agent or contractor that is designated by the Plant Manager to have responsibility for reporting emission levels and plant operating data as required by the ROP. The Environmental Coordinator also notifies the Michigan Department of Environment, Great Lakes and Energy (EGLE) of any abnormal conditions, malfunctions or control equipment that results in an excess emission and suggests changes to the Maintenance Management Plan as necessary to ensure that the emission levels required by the ROP are achieved.

3.0 Definitions:

The following relevant definitions are from Part 1 of the EGLE Air Pollution Control Rules:

"Malfunction" means any sudden, infrequent and not reasonably preventable failure of a source, process, process equipment, or air pollution control equipment to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

"Responsible official" means the individual who is responsible for the purposes of signing and certifying the truth, accuracy, and completeness of permit applications, monitoring and other reports, and compliance certifications.

"Shutdown" means the cessation of operation of a source for any purpose.

"Start-up" means the setting in operation of a process or process equipment for any purpose.

Note that certain emission limits, including the Renewable Operating Permit (ROP) carbon monoxide (CO) lb/mmBTU emission limit and the sulfur dioxide (SO_2) lb/mmBTU emission limit under the Mercury and Air Toxics Standard (MATS), exclude periods of startup and shutdown. For purposes of these associated emissions data exclusions, startup and shutdown are more explicitly defined as follows:

"Shut-down" is defined as that period of time from the lowering of the boiler steam pressure to below 1,200 PSIG until the point at which the combustion process has stopped.

"Start-up" is defined as the period of time from when the combustion process starts until the boiler pressure reaches 1,200 PSIG.

4.0 EQUIPMENT

4.1 Boiler

Description

T.E.S. Filer City Station consists of two Foster Wheeler Boilers which utilize coal as the main fuel and additional fuels consisting of wood, tire derived fuel (TDF) and natural gas. The natural gas is used for purposes of startup, shutdown and at other times to support good combustion. While the boilers are allowed to fire petroleum coke and construction/demolition waste, these fuels are not routinely utilized. Each boiler is rated at 311,000 lbs/hr steam, and together they can generate a combined 60MW gross output and extraction steam of 50,000 lbs/hr.

Critical Criteria

Proper control and efficient operation of the boiler ensures that complete combustion will be achieved and emissions minimized. In order for the overall plant emissions to be in compliance with the ROP, the boiler will be operated to maintain the following critical criteria:

A. Particulate
   1. The particulate emission rate from each of the boilers shall not exceed 0.03 lb/mm/BTU heat input.
   2. The particulate emission rate from each boiler shall not exceed 11.5 lb/hr.
   3. Visible emissions from each of the boilers shall not exceed a 6-minute average of 10% opacity.

B. Sulfur Dioxide, (SO_2)
   1. The sulfur dioxide (SO_2) emission rate from each of the boilers shall not exceed 0.5 lb/mm/BTU heat input, based on a 30-day rolling average.
   2. The SO_2 emission rate from each of the boilers shall not exceed 0.7 lb/mmBTU heat input, based on a 24-hour daily average.
   3. The combined SO_2 emission rate from the boilers shall not exceed 6.45 tons per day.
   4. The combined SO_2 emission rate from the boilers shall not exceed 1,681.9 tons based on a 12 month rolling period as determined at the end of each calendar month.
   5. When firing solid fuels only, the SO_2 emission rate from each of the boilers shall not be in excess of 10% or 30% of the potential SO_2 emission rate, based on a 30-day rolling average emission rate, depending upon the actual outlet SO_2 emission rate. There are other applicable percentages based upon the proportion of solid and gaseous fuels, but the plant follows the 90% reduction requirement as a conservative measure (other required removal percentages are lower). Note that there are also percent reduction requirements for natural gas firing only, but the plant does not anticipate only firing natural gas during a 30-day rolling time period and those requirements are not discussed further.
   6. The sulfur dioxide (SO_2) emission rate from each of the boilers shall not exceed 0.200 lb/mm/BTU heat input, based on a 30-day rolling average, excluding periods of startup and shutdown.

C. Nitrogen Oxides, (NO_x)
   1. The nitrogen oxides, as nitrogen dioxide (NO_2) emission rate from each of the boilers shall not exceed a maximum of 0.60 lb/mmBTU heat input, based on a 30-day rolling average, with the actual limit dependent upon the fraction of heat input supplied by solid fuels and gaseous fuels. If only natural gas is fired during a given 30 day rolling period, the NO_x emission rate shall not exceed 0.20 lb/mmBTU.
   2. The combined NO_x emission rate from the boilers shall not exceed 2,018 tons based on a 12 month rolling period as determined at the end of each calendar month.

D. Carbon Monoxide, (CO)
   1. The carbon monoxide (CO) emission rate from each of the boilers shall not exceed 0.3 lb/mmBTU heat input, based on a 24 hour rolling time period determined each operation hour, excluding periods of start-up and shutdown.
   2. The carbon monoxide (CO) emission rate from each of the boilers shall not exceed 115.2 lbs/hr, based on a 24 hour rolling time period determined each operating hour.
   3. The combined CO emission rate from the boilers shall not exceed 1,009.2 tons based on a 12 month rolling period as determined at the end of each calendar month.

E. Total non-methane hydrocarbons (NMHC)
   1. The total non-methane hydrocarbon emission rate, measured as carbon, from each of the boilers shall not exceed 4.6 pounds per hour.

Inspections

A. Daily inspections will be performed on the boilers to ensure that the equipment is operating properly and to observe changes that may indicate potential malfunction.

B. Normal operation and operating parameters will be continuously observed in the control room.

C. Annual inspections will be performed on the boilers to ensure that the equipment is in proper operating condition.
   1. Stokers will be inspected visually for wear on all moving and stationary parts. Repairs are made based on inspection.
   2. Super heater, water-wall and generating tubes will be inspected ultrasonically.
   3. Tubular air heater, economizer, dust collector and all related ductwork from boiler to stack will be inspected visually and ultrasonically.

Operation

A. Start-up
   1. When firing the boiler, special attention must be taken to minimize the environmental impact caused by emissions in the flue gas.
   2. Place the baghouse in service. (TESFM387 step 19)

3. Start the boiler Induced Draft (ID) fan. (TESFM387 step 20)
4. Start the Natural Gas Warm Up Gun FD fan and the boiler Forced Draft Fan (TESFM387 step 23). Open the boiler FD damper until air flow is above 30% and begin a boiler purge.
5. Start the Overfire Fire Air (OFA) fan.
6. Place the Natural Gas Warm Up Gun in service (TESFM387 step 27).
7. The boiler should be fired as per manufacturer's recommended start-up rate (100 degrees per hour drum metal temp.
8. An atomizer should be installed and started up at approximately 150 deg. F scrubber inlet temperature. The baghouse temperature requirements drop to 145 deg. F when an atomizer is placed into operation.
9. Start the coal feeders and rotors (TESFM387 step 31).
10. When steam conditions allow, stop the burner warm up gun.
11. Experience has demonstrated that "Banking" the boilers has the potential to produce elevated excess CO emissions. The practice of "Banking" the boilers shall only be performed on rare occasions when return to service is imminent and the "Banking" duration is expected to be less than 1 hour.

B. Normal Shutdown
   1. During a boiler-controlled shutdown both SO_2 removal and baghouse operation must be maintained until the boiler flue gas cools to 145 deg F.
   2. At that time the coal should be run off the boiler grates and the boiler fans can be shut down to avoid excess opacity emissions.

C. Emergency Shutdown
   1. During an emergency boiler shutdown due to either a water or steam tube rupture, it will be necessary to bypass the baghouse immediately to prevent wetting and caking of the filter bags.
   2. The coal fire should be extinguished and run off the grate as soon as possible to help reduce stack opacity emissions.

Maintenance

Repairs will be performed based upon inspection and/or as a preventive measure. Record keeping is maintained within the computerized maintenance management system.

A. Preventive
   1. Overfire air fan bearings – oil changes every 6 months.
   2. Overfire air fan flow, pressure and temperature transmitters – calibration every 6 months.
   3. Forced draft fan bearings – oil changes every 6 months.
   4. Forced draft fan flow transmitters – calibration every 6 months.
   5. Stoker grate bar combustion air passages – clean passages every 6 months.
   6. During each boiler outage, TES shall perform a grate bar pin inspection provided that (1) an appropriate period of time has elapsed since the last pin inspection, and (2) that the outage duration will provide adequate time for a grate bar pin inspection.

7. Past experience has shown that a problem exhibited in one boiler may often occur in the other boiler as well. During outages of appropriate duration, TES shall take appropriate action to inspect and repair potential damage in one boiler that has already manifested itself in the other boiler.
8. Special care shall be taken in the event that new vendors are used by TES to perform critical maintenance activities on major boiler equipment components.

   Note: The above preventive maintenance procedures can only be performed when the associated boiler is shut down. Boiler shut downs generally occur at 6 month intervals but they may be extended to up to one year. Some of the preventive maintenance activities discussed above may also be performed on forced outages as well as planned outages.

B. Inspection Related Repairs
   1. The boilers are inspected one or two times a year to ensure that the boiler skin, ducts and their associated expansion joints and the tubular air heaters are free of holes which would leak air into the boiler.

Spare Parts
Spare parts will be purchased and stored in inventory based on the manufacturer's recommendations and plant operating experience (see tab #4).

Malfunction Abatement Measures
In the event that a malfunction should occur to the boiler(s) equipment that affects the controls of the plant emissions and causes the plant to exceed the permitted levels, a specific action will be taken to bring the plant back into compliance. This action will be either one or more of the following steps:

1. Continue to run with the failed equipment as long as the plant emissions are in compliance. This may or may not require the boiler(s) to run at a reduced load.
2. Correct the malfunctioning equipment by taking the equipment out of service for repairs. This may or may not require the boiler(s) to run at a reduced load.
3. Correct the malfunctioning equipment by shutting down the boiler(s) and repairing the equipment.

4.2 Spray Dryer Absorber System Operation

Theory of Operation
The spray absorption process utilizes an aqueous slurry of slaked lime to chemically capture sulfur dioxide present in flue gases via the formation of calcium sulfites and sulfates, which are ultimately reduced to dry particulates and removed from the gas stream along with the fly ash by a fabric filter. The primary element in the process is a spray dryer which contacts the flue gas stream with a fine spray of sorbent slurry droplets in a manner which promotes chemical absorption of sulfur dioxide by the droplets and results in a drying of the spent sorbent to a particulate suspended in the desulfurized gas stream. The other major elements in the process are the sorbent slurry generating system

and the fabric filter used to remove the suspended solids from the absorber discharge gas stream.

Spray Absorber

A. The spray absorber consists of a low-pressure drop gas dispenser, belt-driven atomizer, and absorbing chamber. The spray absorber is a solid drying device widely used in food processing, dye and chemical and mineral processing industries. The spray absorber must be carefully optimized so that the sorbent slurry is atomized, contacted with the flue gas, and dried in a manner that promotes maximum capture of SO_2, minimum sorbent consumption, and low-energy use, while maintaining stable and reliable plant operation. The absorber is intended for continuous service with automatic controls.

B. The absorber uses a centrifugal atomizer design to generate a uniform spray of fine (50-80 micron) droplets over a wide range of feed rates. The slurry is introduced to a central cavity in a high speed rotating disk called the atomizer wheel and is induced by inertial forces to flow outward through radial passages in the wheel and then breaks off to form a spherical droplet whose size is chiefly governed by the viscosity and surface tension of the liquid and the atomizer wheel tip speed. As the droplets move away from the wheel and disperse into the gas stream, exiting the gas disperser vanes, they form an umbrella shaped spray pattern that is symmetric about the chamber axis, and serves as the zone of inertial contact between the sorbent and flue gas.

C. Because of the abrasive character of the slurry atomized in the spray absorption process, a wheel design is used which features silicon carbide inserts in the slurry passages, which may be repositioned as local wear spots appear. A monorail and hoist is provided for maneuvering the atomizer.

D. The absorber gas disperser is designed for high SO_2 removal without high-pressure drop or fly ash abrasion problems. A top entry vaned scroll type gas disperser discharges an annular vortex flow of flue gas down into the chamber on all sides of the atomizer wheel. The gas disperser has two vertically separated gas passages, discharging in an annular pattern around the atomizer. The gas disperser is equipped with vanes to obtain optimum mixing of the spray and the flue gas.

E. The absorber chamber is sized in relation to the gas flow volume to assure that the slurry droplets will have adequate residence time in the chamber for the various stages of reaction with SO_2 and drying to occur. The chamber size also affects the degree of dropout in the absorber, which is maximized to reduce the particulate loading going to the fabric filter. The absorber is designed as an axial entry cyclone to achieve up to 50 percent dust dropout in the chamber. The hopper is not intended for solids storage and must be evacuated continuously.

Lime Slurry Generation

A. Lime handling storage and slaking equipment are contained in an independent plant. Similar plants are widely used in water treatment, process pH control and mineral processing.

B. Calcium oxide, CaO, a white caustic solid (also known as lime, burnt lime, quick lime or caustic lime) is the reactant used in the spray absorption process. The hydration of lime to form calcium hydroxide, also known as hydrated lime or slaked lime, in the presence of excess water by an exothermic reaction is called slaking. The following is the specific chemical reaction:

CaO (s) + H2O (1) = Ca (OH) 2 (s) + 27,500 BTU/lb-mole

When high calcium, soft burned pebble lime is slaked with clean water at a water/lime ratio of 2 to 1, the lime pebbles rapidly disintegrate in an explosive chain slaking reaction, producing a slurry of extremely fine (0.5-4 micron) slaked lime particles suspended in water which is ideal for use in the spray absorption process. The primary element of the slurry generator is the lime slaker, which performs the function of metering the flow of lime and water into a paste slaker to generate the slaked lime slurry, which is then diluted with more water and processed to remove inert impurities called grits. Grits generally consist of uncalcined limestone called "core", fragments of kiln brick, and impurities, which were present in the limestone from which the lime was calcined, mainly silica, alumina and ferric oxide. It is important to remove the grits from the lime slurry because they are highly abrasive and prone to settle out in the slurry piping. Slaking under non-optimum conditions, using hard burned or dolomitic lime, with too high a water/lime ratio, or with poor quality slaking water containing excessive dissolved solids will result in a less reactive slaked lime slurry, characterized by larger and less porous slaked lime particles, which will produce unsatisfactory results when used in the spray absorption process.

C. The lime used is high calcium (90 to 95 percent available CaO) soft burned pebble lime. This lime is slaked at a water/lime ratio of 2 to 1 using water of near potable quality (less than 500 mg/1 sulfates, less than 1000 mg/1 total dissolved solids). The slaking reaction produces a temperature rise of at least 40 degrees Celsius (72 deg. Fahrenheit) above the incoming water temperature within four minutes.

Two-Loop Control

A. In order to operate the spray absorption process in an optimum manner, two (2) key parameters must be controlled; the spray absorber outlet SO_2 concentration and the absorber outlet gas temperature. The former must be controlled in order to remain within the required emission standard without wasting sorbent via excessive removal and the latter must be controlled in order to remain within the required emission standard without wasting sorbent via excessive removal, and the latter must be controlled to a level as close as practical to the water dew point for maximum

performance, while maintaining a suitable safety margin against moisture carryover or condensation in the fabric filter, fan and stack.

B. To achieve such optimum spray absorber operation over a wide range of boiler operating conditions, the General Electric Environmental Services Inc. (GEESI) system incorporates a novel two loop control concept for regulating the quantity and concentration of sorbent slurry flow feeding into the spray absorber atomizer in such a manner that the two (2) key parameters are independently maintained at optimum values.

C. The lime slurry is prepared and stored at a reagent concentration substantially higher than would normally be required to achieve the required absorber SO_2 removal level. Thus, for an optimum outlet temperature to be reached, the lime slurry has to be diluted prior to injection to the process.

D. The first of the two (2) automatic loops regulates the flow of concentrated lime slurry to the absorbers, based on the SO_2 concentration signal transmitted to a flow controller, which controls the slurry flow to the process.

E. The second automatic loop regulates the flow of recycle slurry which is mixed with the concentrated lime slurry at the atomizers, based on a signal from the absorber outlet gas temperature thermocouples.

F. Since the lime slurry must always be diluted to some extent to obtain the desired outlet temperature, the outlet temperature may be raised by reducing the recycle slurry and lowered by increasing the recycle slurry, either of which is readily accomplished by modulating the recycle slurry control valve for the absorber.

G. By following this procedure, the spray absorbers operate at the optimum design point, so no condensation occurs in the system. If the system temperature drops below the predetermined safety margin due to failure of the temperature controller or if the I.D. fan or rotary atomizer fails, a PLC output automatically closes the recycle slurry and lime slurry valves to prevent any further decrease in temperature.

H. The separate automatic control of outlet temperature and SO_2 concentration makes possible rapid and highly efficient control of the spray absorption process and also provides an important safety feature such that the recycle slurry flow will automatically increase to maintain absorber outlet temperature in the event of interruption of slurry flow. The fabric filter is also protected from sudden low temperature extremes, such as might be caused by a boiler flameout, or by automatic shutoff features in the slurry control valves which are triggered by a signal from the absorber outlet low temperature thermocouple.

Recycle Slurry/Absorber Outlet Temperature Loop

A. The desired absorber outlet temperature is selected and inputted to a controller for the absorber. The outlet temperature at the absorber is measured by a thermocouple

located in the stub duct between the absorber and the absorber/baghouse manifold. The absorber outlet temperature is maintained by modulating the recycle slurry flow to the absorber.

Lime Slurry SO_2 Removal Control Loop

A. SO_2 removal may be controlled by one (1) of two (2) modes determined by the automatic or manual mode selector key on the lime slurry feed controller on the Air Quality Control Panel (AQCP).
   1. Fixed Slurry Flow – The position of the lime slurry control valve is selected from 0 to 100 percent open. This option is used during startup, shutdown, SO_2 monitor malfunction, and maintenance checkout. The outlet SO_2 signal from an absorber on fixed slurry flow is not included in the automatic lime slurry flow balancing.
   2. SO_2 – The desired stack outlet SO_2 (ppmv) is selected, input to a controller, and compared to the actual concentration determined by the flue gas analyzer. The position at the lime slurry control valve on automatic setting is modulated to maintain the desired removal.

Absorber Quench System – Control Concept

A. This system is used to maintain the absorber outlet (baghouse inlet) temperature in the range of 250 degrees Fahrenheit to 275 degrees Fahrenheit. This system utilizes plant water and is atomized into the absorber vessel using a set of three (3) two fluid nozzles. The two fluids (water and air) are automatically introduced into the absorber whenever the absorber outlet temperature reaches 265 degrees Fahrenheit. The programmable logic controller is used. This program must not be modified without GEESI project Manager approval.

B. This system is provided with a keyed switch, which enables the selection of "OFF" and "AUTOMATIC". The switch should only be turned to the "OFF" position when the boiler is not operating.

C. The baghouse is bypassed if the Quench System Malfunction alarm occurs and the absorber outlet temperature reaches 275 degrees Fahrenheit.

D. This system maintains the following critical alarms:
   1. Quench System Permissives Disabled
      a. Water supply pressure below LOW level or,
      b. Air supply pressure below LOW level or,
      c. System control switch is in OFF position
   2. Quench System Malfunction
      a. Absorber outlet temperature is above 175 degrees Fahrenheit and the quench system permissive disabled alarm is active.

E. The sequence of operation for the quenching system control is as follows:
   1. If the Quench System Permissives Disabled alarm is <u>not</u> active, the programmable logic controller (PLC) will release the control valve isolation override when the flue gas temperature reaches 175 degrees Fahrenheit.

2. The control valve is released to control the absorber outlet temperature when it reaches 265 degrees Fahrenheit. When the temperature controls are released, the system will atomize water and control the outlet temperature at 250 degrees Fahrenheit.
3. If load is reduced, or the atomizer liquid flows are established, the PLC output will eventually reduce the absorber outlet temperature to 175 degrees Fahrenheit. When this occurs, the quench system resets and will not atomize water until 265 degrees Fahrenheit is reached again.

Fabric Filter Description

A. The collector is a GEESI Model 2.4-14.0(6)-14.15-2.4P modular pulse jet type fabric filter. A walk in plenum for weather protection during bag replacement is provided.

B. The collector is intended for continuous service with automatic controls and consists of eight compartments, each containing 210 filter bags, 6 inches in diameter and 14 feet long.

C. Below each compartment is a single hopper used to collect fly ash. The hoppers are furnished with one door for maintenance and inspection.

D. Separating the compartment from the walk in plenum is a metal plate known as the tube sheet. This plate has a hole for mounting the bag and cage assembly. The upper open end of the bag is attached to this tube sheet and hangs downward.

E. Dust laden gas enters the fabric filter through the inlet manifold, which distributes the gas to the eight compartments through the upper sections of the hoppers. As the gas stream enters the hopper, there is a drop in the gas velocity and a portion of the entrained dust falls into the hopper. The remaining ash in the gas stream is carried upward and deposits on the outside of the bags. The clean, filtered gas passes through the bags and into the outlet manifold.

F. Each compartment is equipped with walk in plenum at the bag hanging level.

G. Each compartment has a pneumatic operated inlet butterfly damper, and one outlet poppet damper which has a pneumatic operator. In normal operation, the inlet and outlet dampers are open and allowing filtering. When a compartment is being cleaned, the outlet damper is closed. Each row of bags has an air header for injection of high pressure, instantaneous pulse air. Each row of bags receives a pulse of air to clean the bags which breaks up the filter cake and allows it to drop into the hopper.

H. The bypass system is used in the event of certain emergencies to divert the gas stream around the fabric filter compartments and directly to the induced draft fans. The system makes use of a poppet damper to interconnect the inlet and outlet manifold.

Operation Procedures

Following is a description of how the DFGD and Particulate Collection Systems are to be brought on and off line. Many of the functions are automatic and should be used accordingly. Several pieces of equipment have manual operation capability which should be used only during maintenance activities.

Even though some equipment has manual operation capability, interlocks still exist to prevent equipment damage.

References to switch positions, adjusting set-points, etc., are described as though hardware devices are used.

Pulse Jet Fabric Filter Precoat Instruction

Pre-coat Requirement

To facilitate proper operation of the particulate control equipment, GE requires that new filter bags be precoated prior to initial operation. The precoat will help to provide greater protection of the new filter bags during the initial startup should boiler upsets and/or acid condensation occur causing irreversible bag damage in the form of bag failures, high opacities and/or low bag/filter cake permeability. Precoating of second generation or replacement bags is normally not required; however, GE Environmental Systems should be consulted prior to any commissioning of the replacement bags.

Material Specification

A. The precoat material shall be dry fly ash obtained from a pulverized coal fired boiler, burning coal with a maximum sulfur content of 1%, sodium levels of less than 1%, moisture content less than 10%, and having a mass mean particle size distribution of greater than 8 microns with no more than 2% less than 1 micron.
B. An optional precoat material to the prescribed flyash is a 90% available limestone material, with a minimum of 80% passing 325 mesh or preferably a commercially available material used primarily for precoat called Nutralite.

Samples

A. Samples from any selected source of precoat material shall be obtained and submitted to GE Environmental Systems for analysis and approval prior to use. Samples should be sent to:

   GE Environmental Systems
   200 North Seventh Street
   Lebanon, PA 17042
   Attention: Mr. T. Lugar
   Mgr., Particulate Technology

B. Samples should be packaged in leak proof/moisture proof containers and be properly protected for shipment via mail. Samples should be clearly labeled as to the source and marked as part of the Filer City project.
C. Samples should preferably be collected from a fabric filter system. The compartment should be cleaned, and then isolated. The ash sample should be pulled from the hopper at this time to collect a more typical ash.

Quantity

A. The precoat protection is established by having the new filter bags coated with approximately 3.0 pounds of material per 10 square feet of cloth. Therefore, the fabric filter will require approximately 5.5 tons of precoat material.

Equipment Condition

A. Boiler Condition

Prior to applying the precoat material, the boiler should be checked out and demonstrated as being capable operating on coal. This is to ensure a minimum amount of time between the completion of precoat and admitting particulate laden flue gas into the compartments. The boiler should be pre-fired on natural gas only to bring it to as high a temperature as possible with the fabric filter on bypass, if needed, prior to actually precoating the bags. This will provide as hot a source of clean air as possible to facilitate precoating the filter bags. Use of the I.D. fans will be required for this procedure.

B. Baghouse Condition

Bags must be completely installed in all compartments to be precoated. All construction must be complete, including controls, hopper heaters, leak tests and insulation (casing and ductwork). The hopper heaters must be turned on at least 48 hours prior to initiation of the precoat process. The internal compartment should reach a minimum temperature of 140 degrees Fahrenheit prior to the introduction of the precoat material with the preheated air stream from the boiler. The pulsing system must <u>remain</u> <u>off</u> (disabled) during this process.

C. Environmental Conditions

The application of the precoat material must occur on a relatively low humidity day, with relative humidity of less than 50% to avoid moisture gain of the precoat.

Detailed Precoat Procedures

A. All fabric filter dampers, differential pressure instruments, temperature gauges and recorders, hopper heaters, fly ash evacuation system, etc. must be completely checked out and ball valves and door openings closed prior to proceeding with precoating.

B. The bypass damper on the fabric filter will be manually opened in order for a free flow path and to establish a known ACFM when starting the I.D. fans. When using the fans for this procedure, the fabric filter casing will be under a slight negative pressure which will more easily allow precoating through the inlet test ports.

C. After establishing the inlet fabric filter flow at approximately 19,800 ACFM per compartment to be precoated, individual compartments can manually be opened up (both inlet and outlet valves) and the bypass damper manually closed. A minimum of two compartments are to be precoated at any one time, since this represents a practical number to ensure high enough fabric filter inlet flow rates to minimize ductwork dropout of precoat material.

D. The best procedure is to start with the first two compartments (as gas flow enters the fabric filter) and end with the two compartments located closest to the I.D. fan.

E. Record the clean bag tube sheet pressure drops of all on line compartments prior to the introduction of the precoat material. The pressure drops across each of the compartments being precoated will be monitored during this process via local compartment Magnahelic gauges. When any compartment reaches a nominal 0.75-inch increase in pressure drop over its "clean bag pressure reading", that compartment will be isolated and another compartment opened. If no compartments remain to be precoated, then the airflow via the I.D. fan is to be terminated unless the system is to be immediately placed into service.

F. The hopper heaters will remain on with all hoppers emptied of dropout material from precoating.

G. The unit should be started up immediately after precoating has been completed, if at all possible. The time period between completion of precoat and start up of the baghouses must not exceed a 168-hour period. If the unit is not to be put into operation immediately after precoating, the inlet and outlet dampers must be closed. Also no personnel entries should be made into any compartment during this period, since this would cause precoat to be shaken from the bags.

H. Once the baghouse unit is put into operation, no personnel entry should be made into any of the compartments until after a bag seasoning period is completed (approximately 90 days) unless an emergency situation exists.

   Note: If Neutralite is used for precoat materials, special procedures are required to properly coat the filter bags. GEESI is to be notified if this material is used.

Cold Startup Operating Instructions for DFGD

This procedure is to be used to start the DFGD system following boiler outages which were longer than 48 hours and when starting with new bags.

A. Check the following:
   1. Fabric filter control air pressure low
   2. Lime Storage silo low-low alarm
   3. Absorber hopper level high alarm
   4. Fabric filter compartment hopper level high alarm
   5. Atomizer lube oil system malfunction alarm
   6. Lime and recycle system malfunction alarm

B. If any of the above alarm points are active, the alarm must be resolved prior to proceeding.

C. Make sure the atomizer is in the storage rack and that the atomizer holds cover is closed.

D. Check that all equipment is ready.

E. Start heat tracing for lime slurry and recycle slurry piping.

F. Start the ash removal equipment.

G. Start lime preparation as outlined by the manufacturer.

H. Start lime slurry pumping system by performing the following:
   1. Check to see that both slurry pumps suction valves are fully closed. Open both discharge valves, then both flush valves for thirty seconds. This is done to insure no solids are settled in the pumps. Close both flush valves. Close discharge valve on standby pump; leave discharge valve OPEN on pump to be started.

   2. Manually open the pump suction valve on the pump to be started.

   3. Turn pump control switch on the slaker control panel to AUTO.

   4. Check that the back pressure control valve is at 25 psig (on the back pressure control valve).

   5. Start the boiler (refer to the appropriate MMP section).

   6. Start the emission monitoring system.

   7. Lift atomizer into the absorber and connect power cable, instrument cables, lube oil hoses, dilution water hose, and lime slurry hose.

   8. Turn atomizer lubrication switch to START.

   9. After the lubrication system has been on for five (5) minutes, turn the atomizer switch to START.

WARNING
THE ATOMIZER CANNOT REMAIN IN THE ABSORBER IN HOT FLUE GAS FOR MORE THAN 15 MINUTES UNLESS THE ATOMIZER IS ROTATING.

   10. Insure that the lime slurry control valve is in MANUAL with zero output on the lime slurry feed controller.

   11. Select the modulate position of the isolation/modulate lime slurry and recycle slurry valve switches on the AQCP panel.

PROCEED ONLY AFTER THE FABRIC FILTER OUTLET TEMPERATURE HAS BEEN 250 DEGREES FAHRENHEIT OR MORE.

12. Turn all fabric filter compartment switches to AUTO.

CHECK THAT ALL COMPARTMENT INLET DAMPERS ARE FULLY OPEN

CAUTION

CHECK THAT THE BOILER GAS FLOW IS A MINIMUM OF 64,700 ACFM BEFORE CONTINUING. FAILURE TO ADHERE TO THIS CAUTION WILL RESULT IN THE PRODUCTION OF WET ASH. PROCEED ONLY AFTER THE ABSORBER OUTLET TEMPERATURE IS ABOVE 250 DEGREES FAHRENHEIT.

13. Simultaneously perform the following steps:
    a. Introduce solid fuel to the boiler. Begin to reduce supplemental start-up fuel.
    b. Check that the baghouse bypass permissive satisfied light is illuminated. If it is, select the bypass function switch to START. This is a momentary command.

    Note: The compartments should sequence on line by opening the outlet dampers automatically. When six compartments are acknowledged to be in the filtering mode (inlet and outlet dampers are fully open), the bypass damper will automatically close.

14. Do not manually initiate a cleaning cycle. Allow the automatic differential initiation to occur.

15. Gradually, manually open the lime slurry control valve to maintain an absorber outlet temperature of 200 degrees Fahrenheit.

16. Adjust the lime slurry valve controller automatic set point to desired ppm and switch to AUTO.

17. Allow absorber outlet temperature to stabilize.

18. Adjust Recycle Slurry Control Valve controller set point to 10 degrees Fahrenheit below temperature stabilized and place controller in AUTO. Then gradually reduce controller set point to 155 degrees Fahrenheit.

19. Turn all hopper heaters to AUTO.

THE SYSTEM SHOULD NOW MAINTAIN ITSELF IN STEADY STATE OPERATION.

Steady State Operation

A. The Dry Flue Gas Desulfurization System is designed to be self-sustaining when operating in a steady state mode (64,700 to 150,400 ACFM).

B. If the System inlet volume goes down below 64,700 ACFM, the operator, as a minimum, stops slurry flow to the absorber. This is done as follows:

1. Set the manual output of the recycle slurry controller to zero, adjust the automatic set point to full-scale temperature and turn the recycle slurry controller to MANUAL and the control switch to ISOLATE.

2. **IF THIS CONDITION IS GOING TO EXIST FOR MORE THAN TWO HOURS, SHUT THE SYSTEM DOWN AS DESCRIBED IN EITHER "LONG TERM SHUTDOWN" OR "SHORT TERM SHURDOWN" INSTRUCTIONS.**

3. The absorber gas distribution equipment is designed for controlling flows above 64,700 ACFM; internal inspections must be made to determine if wall buildup is occurring during low load operation.

4. If the boiler has been operating at a reduced load for a long period of time (e.g., overnight at a low load demand) the fabric filter should have a cleaning cycle manually initiated 30 minutes prior to ramping up in load. Depress the fabric filter cleaning – push to clear pushbutton.

5. On occasion, it will be necessary to switch lime slurry pumps during the steady state operation. This is done as follows:

   a. Turn pump to OFF. The operating pump will stop; then proceed through a manual pump flush sequence as follows:
      - Close the pump suction and discharge valves.
      - Open the pump suction drain and flush valves.
      - After 30 seconds, close the discharge flush and suction drain valves.

   b. Turn standby pump to AUTO.

Short Term Shutdown

This procedure is to be followed when a boiler outage is expected to be for a period less than 24 hours.

WHEN THE INLET GAS FLOW IS REDUCED TO 64,700 ACFM OR LESS, PROCEED WITH THE FOLLOWING:

A. Set the manual output of the recycle/temperature controller to zero, adjust the automatic set point to full-scale temperature and turn the recycle controller to MANUAL and the AQCS Panel Recycle Slurry Feed Valve Switch to ISOLATE.

B. Set the manual output of the lime slurry feed controller to zero, adjust the automatic set point to full scale, and turn the controller to MANUAL and the AQCS Panel Lime Slurry Feed Valve Switch to ISOLATE.

C. Begin to slowly reduce solid fuel feed. This should occur over a period of approximately 30 minutes.

D. Turn the atomizer switch to STOP.

E. Check that the atomizer lubrication system function switch is in the REMOTE position and after the atomizer has coasted to a stop, turn the lubrication system switch to OFF.

F. Lock out the atomizer power source at the MCC. Disconnect recycle slurry hose, lime slurry hose, lubrication supply and return hoses, atomizer power quick disconnect plug and atomizer and motor instrument disconnect plugs. Lift atomizer from the absorber. After the absorber clears the atomizer hole covers, close the hole cover.

G. Place the atomizer in its storage rack and plug in the space heater.

H. Remove atomizer wheel and liquid distributor, clean and replace.

WARNING

THE ATOMIZER CANNOT REMAIN IN THE ABSORBER IN HOT FLUE GAS FOR MORE THAN 15 MINUTES UNLESS THE ATOMIZER IS ROTATING.

I. Turn all hopper heater switches to ON.

J. The fabric filter should remain on line for a period following final burning of the fuel for a sufficient time to purge flue gas from the gas flues and fabric filter compartments. As the residual heat of the boiler and flue system reduces, the fabric filter inlet temperature decreases and the low inlet (240 degrees Fahrenheit) temperature alarm activates, turn the fabric filter bypass damper switch to MANUAL BYPASS.

K. Keep the ash removal system operating until the hoppers are completely empty, and then turn it off.

<u>Long Term Shutdown for DFGD</u>

This procedure is to be followed when a boiler outage is expected to be for a period of 24 hours or more.

CAUTION: INLET GAS FLOW MUST BE MAINTAINED ABOVE 64,700 ACFM.

A. Turn the recycle feed valve switch to ISOLATE, turn the recycle/temperature controller to MANUAL and change the set point to full scale (zero output).

B. Turn the lime slurry feed valve to ISOLATE, turn the lime slurry feed controller to MANUAL and adjust the output to the bottom end of the scale (zero output).

C. Turn the lime slurry pump OFF.

D. Close the suction valve of the lime slurry pump that was in operation.

E. Open the adjacent pump discharge valve. At this time, both discharge valves will open.

F. Open both lime slurry flush valves.

G. After 3 minutes, gradually open the lime slurry control valve while watching absorber outlet temperature. Allow the temperature to drop 40 degrees Fahrenheit. Note the percent output on the Controller. Set manual output to zero, then return to the above noted controller output. This is done to flex the valve. Repeat this several times and leave valve closed.

H. Close both lime slurry flush valves one minute after completing.

I. Begin to slowly reduce solids fuel feed. This should occur over a period of approximately 30 minutes.

J. Turn the atomizer switch to STOP.

K. Check that the atomizer lubrication system function switch is in the REMOTE position and after the atomizer has coasted to a stop, turn the lubrication system switch to OFF.

L. Lock out the atomizer power source. Disconnect process water hose, lime slurry hose, lubrication supply and return hoses, atomizer power quick disconnect plug and atomizer and motor instrument disconnect plugs. Lift atomizer from the absorber. After the atomizer clears the absorber, close the hole cover.

M. Place the atomizer in its storage rack and plug in the space heater.

N. Remove atomizer wheel and distributor, clean and replace wheel.

WARNING
THE ATOMIZER CANNOT REMAIN IN THE ABSORBER IN HOT FLUE GAS FOR MORE THAN 15 MINUTES UNLESS THE ATOMIZER IS ROTATING.

O. Turn all hopper heater switches to ON.

P. If the boiler is going to be off for more than 48 hours, shut down slaker system, including draining the slaker and slurry tank.

Q. Turn all compartment cleaning mode switches to OFF LINE.

R. Keep the ash removal system operating until the hoppers are completely empty, and then turn it off.

S. Stop the emission monitoring equipment.

Atomizer Removal

Periodically the operating atomizer needs to be cleaned and inspected. This procedure can be used to remove the operating atomizer.

A. Set the manual output of the recycle/temperature controller to zero, adjust the automatic set point to full-scale temperature and select the MANUAL control mode on the controller.

B. Set the recycle feed valve switch to the ISOLATE position.

C. Adjust the lime slurry feed controller manual output to zero and automatic set point to full scale.

D. Insure that the atomizer function switch is in the REMOTE position, and then turn the atomizer switch to STOP.

E. Check that the atomizer lubrication system function switch is in the REMOTE position and after the atomizer has coasted to a stop, turn the lubrication system switch to OFF.

F. Lock out the atomizer power source at the MCC. Disconnect recycle slurry hose, lime slurry hose, lubrication supply and return hoses, atomizer power quick disconnect plug and atomizer and motor instrument disconnect plugs. Lift atomizer from the absorber. After the absorber clears the atomizer hole cover, close the hole cover.

G. Place the atomizer in its storage rack and plug in the space heater.

H. Remove atomizer wheel, clean and replace.

Installation of Atomizer

A. Unplug space heater.

B. Lift atomizer from rack storage, remove atomizer hole cover and install atomizer.

C. Connect lubrication supply and return hoses.

D. Turn atomizer lubrication switch to ON.

E. Connect recycle slurry hose, lime slurry hose, atomizer power quick connect plug and atomizer and motor instrument plug, then unlock and CLOSE the atomizer power breaker at the MCC.

F. After the lubrication system has been on for five (5) minutes, turn the atomizer switch to START.

WARNING
THE ATOMIZER CANNOT REMAIN IN THE ABSORBER IN HOT GLUE GAS FOR MORE THAN 15 MINUTES UNLESS THE ATOMIZER IS ROTATING.

G. Gradually, manually open the Lime Slurry Control Valve via the Lime Slurry Feed Controller to maintain an outlet temperature of 200 degrees Fahrenheit.

H. Adjust the Lime Slurry Feed Controller automatic set point to desired PPM, and switch to AUTO.

I. Allow absorber outlet temperature to stabilize.

J. Adjust Recycle/Temperature Controller set point to 10 degrees Fahrenheit below temperature stabilized and place controller in AUTO. Then gradually reduce controller set point to 155 degrees Fahrenheit.

Startup Operating Instruction for Fabric Filter

The fabric filter is controlled for automatic operation by the use of Air quality Control System (AQCS) Panel furnished by GEESI. The permissive conditions which must exist before the fabric filter can be put on line are as follows:

A. Hopper heaters are ON 48 hours prior to startup.

B. Fabric filter bypass damper OPEN.

C. Compressed air pressure at above 80 psig.

D. Inlet temperature below high set point of 275 degrees Fahrenheit.

E. Inlet temperature above low set point of 240 degrees Fahrenheit when the fabric filter is ON and spray absorber is OFF.

F. Fabric filter BYPASS FUNCTION in AUTO position.

G. A minimum of six (6) compartment cleaning mode switches in AUTO position and their corresponding six (6) inlet dampers opened.

H. Control power exists to the system programmable logic controller.

I. Ash handling system OPERATING.

J. High ash level detectors ON.

Startup Procedure

When the above permissives are met, the fabric filter can be placed into service. This is accomplished by the following procedure:

A. Ensure that the baghouse has been manually put into service before introducing solid fuel.

B. Place all compartment cleaning mode switches in the AUTO position.

C. After the fabric filter inlet temperature has reached a required minimum operating temperature of 240 degrees Fahrenheit, sequence the compartments on line by selecting the START position of the Bypass Function Switch, automatically opening the compartment outlet dampers. When a minimum of six (6) compartments are acknowledged to be in the filtering mode (inlet and outlet dampers open), the bypass damper will automatically close.

D. The automatic cleaning system will be activated to allow the cleaning of the filter bags should the appropriate pressure drop (5.5 inches w.c.), timer override and/or operator initiated cleaning signal be received.

E. The fabric filter is now in its normal operating mode. During startup, the boiler operator must avoid any ramping (quick load changes) of the boiler to allow the fabric filter to be started up as smooth as possible to avoid damage to the filter bags in the first compartments brought on line.

F. As there is a short time delay between the AQCS panel receiving its signal to open up the appropriate compartments and the time that the compartments are actually placed in full filtration mode, any ramping of the boiler load and/or air flow could cause the fabric filter to initiate an automatic bypass caused by a high pressure drop signal thereby allowing uncontrolled emissions to escape into the atmosphere.

G. A high fabric filter pressure drop will be alarmed at 8.0 inches w.c., prior to bypassing at 8.5 inches w.c., to allow the operator ample time to make any appropriate changes as required to reduce the pressure drops below the actual bypass set points.
Note: To meet emission requirements there is a 250 switch that is used to override the temperature limits. This allows the fabric filter to be placed into service when flue gas temperatures are out of range. Putting the 250 switch into override can also be used to prevent an auto bypass function on the fabric filter system.

System Bypass

Bypass Conditions
The fabric filter will automatically bypass for any of the following conditions:

- High inlet temperature.
- Low inlet temperature. Spray absorber OFF.
- Low-low inlet temperature. Spray absorber ON.
- High fabric filter pressure drop.
- More than six (6) compartments off line.
- The fabric filter can also be put into the bypass mode manually by the operator from the main control panel. (See bypass function switch.)

Bypass Sequence
When a bypass takes place, the following sequence occurs:

- Bypass poppet OPENS fully.
- All outlet poppets CLOSE after the interlock permissive signal indicates the bypass damper is OPEN.
- Automatic fabric filter cleaning sequence is TERMINATED.
- The cleaning of individual compartments can be conducted manually, one compartment at a time during bypass by the operator from the AQCS panel.

<u>Warm Restart</u>

Once a bypass condition has been cleared and all required permissives are met, the unit can be placed back in service by the operator from the main control panel in the following sequence:

- Set all compartment cleaning modes switches in the AUTO mode.
- Select the START position on the bypass function switch.

- This switch will spring return to the AUTO position. This will OPEN the outlet poppets, and when confirmed open, the bypass damper will CLOSE.

Compartment Cleaning Mode

A. During NORMAL operation of the fabric filter, all systems will be in the automatic mode. Cleaning will be OFF LINE and will be normally initiated by either a flange-to-flange pressure drop signal or timer initiated signal after eight (8) hours of continuous filtration.

B. The AQCS will automatically switch to an ON LINE (outlet dampers remain open) cleaning mode when one-compartment mode switches are in the OFF LINE position. This switch can be locked in off line position with the key removed by the operator. All automatic cleaning modes can still initiate cleaning under normal operation.

C. Manual compartment cleaning can be accomplished when a compartment is OFF LINE via the compartment cleaning mode switches. However, only one compartment can be cleaned at any one time. If a total of two (2) compartments are off line at any one time, manual cleaning of a third compartment is prohibited since the AQCS will detect three compartments off line which is an automatic BYPASS condition.

Shutdown Procedures

Shutdown of the fabric filter is controlled from the Air Quality Control System (AQCS) panel. These detailed procedures are as follows:

Long Term (Cold) Shutdown
The following procedure shall be utilized when the fabric filter is expected to be off line for more than 48 hours.

A. Approximately 20 minutes after coal firing in the boiler has stopped (to allow sufficient time for purging the fabric filter of acid laden flue gas with hot clean air), manually initiate a bypass of the fabric filter system by turning the bypass function switch to BYPASS position.

B. Immediately upon bypass, the unit is to have each compartment manually cleaned at least twice to remove as much ash off the bags as possible.

C. The ash system is to remain in operation until all hoppers are completely empty.

D. Upon the completion of ash removal from the hoppers, the hopper heater controls can be switched off at the MCC until 48 hours prior to the next startup, but it is

highly recommended that they remain on to minimize the chances of condensation from occurring on the filter cake.

E. The unit is to remain sealed to ambient conditions except for necessary maintenance. Any unnecessary entries into the compartments can cause long-term bag damage.

Hot Shutdown

The following procedure shall be utilized when the unit is expected to remain off line 48 hours or less:

A. Follow the LONG TERM SHUTDOWN procedure up to the shutdown of the ash removal system.

B. Upon shutdown of the ash removal system, the hopper heaters are to remain ON with the temperature set for 210 degrees Fahrenheit.

C. The unit is to remain SEALED with only emergency maintenance requiring main entry to the compartments allowed.

WARNING

ON ANY MAN ENTRY INTO THE COMPARTMENTS AND/OR UNIT HOPPERS, STRICT ADHERENCE TO SAFETY IS NECESSARY. INJURY OR DEATH CAN RESULT FROM NEGLIGENCE.

Fabric Filter Compartment Isolation

A. Operator isolates compartment from the AQCS control panel by turning the compartment cleaning mode selector switch to OFF LINE.

WARNING

BEFORE ANY ENTRANCE TO A COMPARTMENT IS ALLOWED, THE COMPARTMENT CLEANING MODE MUST BE LOCKED IN THE OFF POSITON. ALL MECHANICAL STOPS AND PADLOCKS, IF SUPPLIED, MUST BE UTILIZED ON ISOLATION DAMPERS.

B. The isolated compartment is to be cleaned at least twice by selecting the MANUAL position of the compartment cleaning mode switch before any entrance is made.

C. Should an extended outage be anticipated for the compartment, the hopper shall be emptied, and the hopper heaters switched OFF.

D. For short outages of one (1) hour or less, the hopper heaters should remain ON.

Ventilation of Compartments

To ventilate the compartments, two (2) methods can be used. These are as follows:

A. Primary Method – Open the hopper access door and clean air plenum access door. Allow natural ventilation to cool the compartment. To speed up the process, a ventilation fan can be placed at the upper access door to draw flow through the compartment.

B. Alternate Method – Open the clean air plenum access door and crack open the butterfly inlet damper. (These dampers are pneumatically closed by operation of the OFF LINE switch.) This will induce flow in through the access door and into the inlet manifold.

WARNING

FULL CAUTION NEEDS TO BE EXERCISED WHEN OPENING ANY ACCESS DOORS. REVIEW ACCESS DOOR SAFETY RULES BEFORE ATTEMPTING TO ENTER THE FABRIC FILTER COLLECTION SYSTEM.

Compartment Restart

To place an isolated compartment back on line, the following procedure must be followed:

A. Follow all safety procedures to ensure that all personnel are out of the compartment.

B. Close the access doors and check that the doors are properly latched.

C. Turn ON hopper heaters, if OFF.

D. Manually remove any padlocks and stops if supplied on the inlet damper.

E. The operator unlocks the compartment cleaning mode switch and places it in the AUTO position. This will automatically open the inlet and outlet damper and place the compartment back on line.

4.3 FLUE GAS DRY SCRUBBERS

Description

The Flue Gas Dry Scrubber controls the SO_2 emissions as required by the ROP. This system includes atomizers, slurry and recycle control valves, pumps, etc. The slurry is pumped to the atomizer, which contacts the flue gas stream with a fine spray of sorbent slurry droplets in a manner which promotes chemical absorption of sulfur dioxide by the droplets.

Critical Criteria

The system will be operated in a manner that will control the plant's SO_2 emissions in compliance with the ROP.

Inspections

A. Daily visual inspections of the scrubbers will be performed by the operations department. This is accomplished by routine rounds made during each shift. Work orders will be generated when concerns arise.
B. Weekly preventive maintenance will be performed on the scrubber atomizer wheels. Atomizers will be maintained according to the manufacturers recommended guidelines.
C. Scrubber vessels will be inspected annually during routine outages. Vessels will be inspected visually and ultrasonic thickness testing will be performed to determine vessel condition. Repairs will be performed based on these inspections.

Component Operating Descriptions

Flue Gas Dry Scrubbers - Atomizer Assembly

A. Components – Atomizer Body
    1. Location – Center of gas distributor cone.
    2. Quantity – One.
    3. Description – Steel body with insulated jacket, stainless steel external jacket and base plate. Flat belt drive. Stainless steel spindle supported by two preloaded ball bearings and designed for operating at high speed. Two stainless steel feed pipes with quick disconnect couplings. 400 mm diameter stainless steel wheel with replaceable silicon carbide inserts. An internal distributor is used to evenly introduce the slurry into the rotating wheel. An oil collection sump is located below the lower bearing. Instrumentation is provided for monitoring bearing temperature and vibration on both bearings.
    4. Normal Control Mode – Manual by switch (see motor).
    5. Fault Control Mode – High-high bearing vibration or high-high bearing temperature will automatically trip atomizer motor.

B. Atomizer Motor
    1. Location – Bolted to special base frame mounted on top of atomizer base plate.
    2. Quantity – One.
    3. Description – Self ventilated, vertical, 150 HP, 460 VAC, 3 phase, 60 Hz power. Anti-friction type bearings, grease lubricated. Space heater for condensation protection of starter windings. Insulation is Class F. Instrumentation is installed for measuring the winding temperatures.

4. Function – Drive atomizer.
5. Normal Control Mode – Manual by switch, on AQCS Panel automatically tripped by atomizer instrumentation to prevent mechanical damage. Interlocked to prevent operation without atomizer lubrication system functioning.
6. Fault Control Mode – High-high bearing vibration, high-high bearing temperature on atomizer, loss of atomizer speeds will trip the motor.

C. Lubrication System
1. Location – Air distribution cone upper level.
2. Quantity – One.
3. Description – Skid mounted, volumetric, once-through oil lubrication, powered by air driven supply pump and air driven return pump. Oil supply and return reservoirs. Control for supply pressure, air pressure, and reservoir level. Connected to atomizer by quick-disconnect couplings.
4. Function – Lubricate atomizer spindle bearings.
5. Normal Control Mode – local/remote manual switch.
6. Fault Control Mode – Malfunction will trip atomizer motor.

Function
Mix the recycle slurry and lime slurry and atomize the slurry to approximately 40 microns. Introduce the atomized slurry into the absorber chamber to mix with the flue gas.

Means of Control
Manual via AQCS Panel or local atomizer panel switch. Automatic shutdown by atomizer instrumentation to prevent mechanical damage.

Internal Fault Modes
Mechanical failure of atomizer, electrical or mechanical failure of motor.

Countermeasures – Remove and repair.
Consequences – No sulfur dioxide removal until system is repaired. Exposure to hot gas stream which may damage the atomizer bearing assemblies.
Lubrication System Failure – Automatically trips the atomizer.
Countermeasure – None.
Consequences – Faults automatically show on AQCS annunciator.

D. Gas Inlet Flow Control
1. Louver Damper
- Location – Gas distributor lower section.
- Description – Louver damper with air operated actuators.
- Function - Direct flue gas into appropriate cone section to maintain minimum gas velocity.
- Normal Control Mode – Open/closed based on gas flow signal. Set point to open lower louver (increasing flow) 90,000 ACFM, set point to close lower louver (decreasing flow) 85,000 ACFM.
- Fault Control Mode – Close on loss of signal.

2. Function
   Introduce flue gas into the absorber chamber concurrent with the slurry spray and maintain gas-to-liquid contact for volumes in excess of 64,700 ACFM.

3. Means of Control
   Open/closed operation based on flue gas volume.

4. Internal Fault Modes
   Fails closed on loss of signal, power or air.

Lime Slurry Generator

1. Truck Loading System
   - Location – Side of silo.
   - Quantity – One.
   - Description – Fill pipe, 4" diameter, with inlet cap and discharge target box. Unloading control panel with cap limit switch. Silo ventilation filter with discharge fan.
2. Function – Provide attachment to pneumatic truck for conveying pebble lime to silo. Remove dust from conveying air.
3. Normal Control Mode – Connection of the feed pipe from the truck to the lime fill pipe actuates the silo vent fan.

Slaker

1. Location – Second level of lime slurry preparation building (on tank).
2. Description – Wallace and Tierman Series A-758 welded steel construction, replaceable steel inner liner and inspection cover. Lime rate and emergency dilution controls.
3. Function – Mix metered quantities of water and lime together to form a calcium hydroxide slurry with a minimum possible particle size and prescribed fluid density.
4. Normal Control Mode – Automatic on-off in response to slurry tank level. Feed rate of water is adjustable manually by operator. The slaker system control is entirely automatic (with manual overrides) and ensures a constant availability of slurry. The slaker system also utilizes a "cascade" interlock control concept which prevents the starting of any dynamic component (mixer, pump, screw conveyor, vibrator) unless the downstream component is operating satisfactorily.

5. Operation of the slaker system is initiated by the slurry transfer tank low level and is stopped by the high level. Operations so controlled are:

   - Silo discharge vibrator
   - Lime feeder
   - Slaker mixer
   - Slaking water valve
   - Dilution water valve
   - Vibrating screen

- Vapor remover
- All slaker emergency functions

6. Fault Control Mode – Mechanical failure of the slaker mixer will trip the slaker agitator low-speed switch, stopping the lime feeder.

Grit Removal (see Volume 3)

1. Location – Second level of lime slurry preparation building (on tank).
2. Description – Circular grit removal screen with dilution jets and overflow spout. Vibrating screen with replacement steel screen. Conveyor to disposal.
3. Function – Separate grits from slurry and transfer grits to storage.
4. Normal Control Mode – Automatic.
5. Fault Control Mode – None.

Slurry Storage and Transfer (see Volume 3)

1. Location – Bottom level of lime slurry preparation building.
2. Description – Slurry tank with one turbine agitator and level control. Two slurry pumps with manual water flushing. Valves and piping.
3. Function – Store slurry from slaker/grit removal overflow and from absorber return. Agitate slurry to prevent settling of solids. Feed slurry to absorber.
4. Normal Control Mode – Agitator and pumps manually operated. Manual flush.
5. Fault Control Mode – A lime slurry tank low-low level trips lime slurry pump to prevent pump cavitations. A lime slurry tank high level stops the lime feeder and slaker water to prevent tank overflow.

Slurry Feed Control Components

Lime Slurry Control Valve

1. Location – Inside absorber penthouse.
2. Description – 1” ceramic ball valve, positioner. Air to open.
3. Function – Control flow of lime slurry to atomizer.
4. Normal Control Mode – Automatic by system, or manual by operator.
5. Fault Control Mode – Fail-safe closed.

Recycle Slurry Control Valve

1. Location – Inside absorber penthouse.
2. Description – 1” ceramic ball valve, positioner. Air to open.
3. Function – Control flow of process water to atomizer.
4. Normal Control Mode – Automatic by system or manual by operator.
5. Fault Control Mode – Fail-safe closed.

Slurry Back Pressure Regulator Valves

1. Description – Pinch valve, 3” with air pressure regulator.
2. Function – Regulate slurry pressure into slurry control valve at constant value to avoid valve seeking.
3. Normal Control Mode – Automatic.
4. Fault Control Mode – Fail open.

Slurry Pump Suction Valves

1. Location – Upstream of lime slurry pump.
2. Quantity – One each pump; two total.
3. Description – 3" straight through diaphragm valve. Manually operated.
4. Function – Pump isolation.
5. Normal Control Mode – Manually opened by operator on pump start and closed on pump stop.

Slurry Pump Discharge Valve

1. Location – Downstream of lime slurry pump.
2. Quantity – One each pump; two total.
3. Description – 3" straight-through diaphragm valve. Manually operated.
4. Function – Pump isolation.
5. Normal Control Mode – Manually opened by operator on pump start and closed on pump stop.
6. Function - Control the slurry flow rate to the atomizer to achieve optimum SO_2 removal. Stop flows to avoid formation of wet powder in absorber.

Lime Slurry / SO_2 Removal

The degree of SO_2 reduction achieved in the spray dryer absorber and fabric filter is directly related to the rate of lime feed to the atomizer. The lime slurry feed rate to the atomizer is regulated by a control valve which is modulated by a signal from an analog control system utilizing the signal from the SO_2 analyzer, located in the stack. An analog control system will automatically control the SO_2 concentration leaving the system at a level set on the slurry feed controller on the AQCS Panel.

Recycle Slurry / Absorber Outlet Temperature

The desired absorber outlet temperature is normally selected to be 155 degrees Fahrenheit. The absorber outlet temperature is maintained at this temperature by modulating the recycle slurry valve.

Internal Fault Modes

Mechanical Failure

Countermeasure – Control valves are provided with manual isolation valves upstream.
Consequences – Failure to recycle slurry valve may indirectly cause slurry trip via absorber outlet low temperature. A failed slurry valve may cause high SO_2 alarm. Failure of isolation valve will not affect normal system operation.

Loss of Control Air or Control Power

Countermeasure – Fail-safe.
Consequences – Valves fail closed and stop slurry flow and recycle slurry flow to atomizer.

The separate automatic control of outlet temperature and SO_2 concentration makes possible rapid and highly efficient control of the spray absorption process.

Hopper Heaters
Hopper heaters are modular (blanket) design. The bottom one-third of the hopper will be heated. Heating will be sufficient to maintain internal skin temperature above 160 degrees Fahrenheit. Hopper heaters are controlled automatically by thermostats.

Operation
Start-up
A. When starting up the flue gas scrubbers, special attention must be taken to minimize the environmental impact caused by SO_2 emissions in the flue gas. This includes starting up on natural gas only such that an atomizer is started up before coal is introduced to the boiler.
B. When the flue gas temperature leaving the scrubber vessel reaches approx. 145 deg. F. an atomizer should be installed and started up.

Note: When firing solid fuel only, the baghouse temperature requirements drop to 145 deg. F when an atomizer is placed into operation. Once the atomizer is started when firing solid fuel only, the baghouse can then be placed into operation. When starting up on natural gas only, the atomizer should be installed and started up before the introduction of coal.

C. Lime slurry should be admitted to the scrubber as soon as practical, (slowly at first) so as not to decrease the flue gas temperature below 145 deg. F. where the baghouse will bypass. SO_2 emissions control (90% removal of all SO_2 admitted to the scrubber from the boiler) should begin at the earliest stages of start-up.
D. As the boiler load increases, it will become necessary to add recycle water spray to the vessel along with the lime slurry to control scrubber outlet temperature. Maintain160 – 165 deg. F at the scrubber outlet.

Normal Shutdown
A. During a boiler controlled shutdown, SO_2 removal operation must be maintained until the boiler flue gas cools to 145 deg F.
B. At that time the coal should be run off the boiler grates and the boiler fans can be shut down to avoid excess SO_2 emissions.
C. Reduce the recycle and lime slurry flows to zero.
D. Stop the atomizer and remove the atomizer from the scrubber vessel for cleaning.

Emergency Shutdown
A. Should the scrubber have to be shut down due to an emergency, compliance with all SO_2 emissions limits is still required and Data Acquisition and Handling System (DAHS) Reports should be routinely consulted to understand if compliance with any SO_2 emissions limits is in jeopardy.
B. Should the scrubber not be able to be placed back into service and/or the SO_2 emissions limits are in imminent danger of being exceeded, then the boiler must be removed from operation and the coal removed from the grate.

The Effects of Boiler on Flue Gas Dry Scrubbers

The essential operating characteristic of the spray absorber is to maintain an absorber outlet temperature above 160 degrees Fahrenheit. Boiler changes which have an immediate effect on the absorber must be recognized by the control system and appropriate action taken. Longer-term changes can be counteracted by operator actions.

Boiler Tube Leak

A. Absorber Response: 10 to 60 seconds.
B. Severity:
    1. In the event that a massive boiler tube leak occurs, the majority of the water, steam, and muddy dust in the boiler gas stream will be intercepted by the economizer during boiler tube leak.

    2. The absorber will perform like a cyclone collector. Inertial forces will centrifuge the larger and denser mud particles and agglomerated ash toward the vessel wall and into the absorber hopper. It is unlikely that any wet particles over 50 microns would pass through the absorber.

    3. Possible wet deposits may be formed in the absorber in the event of boiler tube pinhole leaks or superheater tube.
C. Predictability: None.
D. Countermeasures: Massive rupture may initiate boiler main fuel trip, causing reduction in flue gas temperature. Operator should immediately trip absorber (slurry valves will close). If the operator does not intervene, the flue gas temperature will eventually drop below the low absorber outlet temperature set point, thereby automatically tripping absorber.

Boiler Trip

A Absorber Response: Immediate.
B. Severity: Partial saturation of gas and powder in absorber.
C. Predictability: None
D. Countermeasures: Operator should immediately trip absorber (slurry valves will close). If operator does not intervene, the flue gas temperature will eventually drop below the low absorber outlet temperature set point, thereby automatically tripping absorber.

Load Reduction

A. Absorber Response: Immediate repositioning of inlet louver dampers in response to flow change.
B. Severity: None for gradual reduction. Rapid reduction may form wet powder in absorber.
C. Predictability: Operator initiated for manual boiler load control. Fair to poor for automatic load control.
D. Countermeasures: Adjust rate of boiler load reduction to be compatible with absorber control lag time. Rapid load reduction may reduce absorber outlet

temperature below the low set point and automatically stop slurry flow to the atomizer.

Steam Soot Blowers

A. Absorber Response: 15 – 60 seconds.
B. Severity: Operation of soot blowers at lower loads will increase dew point which will cause wet powder to form in the absorber.
C. Predictability: Operator initiated.
D. Countermeasures: Restrict soot blower operation.

Wet Fuel

A. Absorber Response: 1 – 24 hours, depending on fuel storage capacity.
B. Severity: Wet fuel may increase the gas dew point up to 10 degrees Fahrenheit.
C. Predictability: Fair, depending on coordination between boiler operator and fuel handling. Time of occurrence and effect of flue gas dewpoint cannot be accurately predicted.
D. Countermeasures: Increase absorber outlet temperature control point by 10 degrees Fahrenheit when wet fuel is burned. (Actual value may be adjusted after sufficient operating experience is gained).

Air Heater Failure

A. Absorber Response: 1 – 15 minutes.
B. Severity: Absorber inlet temperature will rise dramatically. The absorber controls will tend to react by increasing flow of recycle slurry.
C. Predictability: None.
D. Countermeasures: Operator will stop all slurry flow to absorber. If temperature to the fabric filter exceeds 275 degrees Fahrenheit, control system will automatically place the fabric filter in the emergency bypass mode, which, in turn, will automatically stop slurry flow.

Induced Draft Fan Trip

A. Absorber Response: Immediate.
B. Severity: Complete saturation of gas and powder in the absorber.
C. Predictability: None.
D. Countermeasures: The boiler main fuel trip should occur which will automatically stop slurry flow to the atomizer.

System Power Failure

A. Absorber Failure: Immediate.
B. Severity: If a power failure was to occur and slurry valves remained open, temperature control would be lost and the gas and powder in the absorber could become saturated.
C. Predictability: None.
D. Countermeasure: The recycle slurry and lime slurry are designed to fail closed on loss of a control signal. Loss of control signal will cause lime slurry pump to trip.

Also, the control system fails to isolate mode on power failure preventing premature injection of liquids to the system.

Maintenance

Repairs will be performed based upon inspection and/or as a preventive measure. Record keeping is maintained within the computerized maintenance management system.

A. Preventive
   1. Atomizers - cleaned weekly with a clean spare available at all times
   2. Atomizer motors - greased every 6 months
   3. Atomizers are rebuilt – after 60,000 hours
   4. Quench spray nozzles - cleaned every 6 months
   5. Scrubber instrumentation (flows, temperatures, etc.) – calibrated every 6 months
   6. Scrubber vessel integrity - measure wall thickness annually
   7. Lime and recycle slurry pumps (4) – change oil every 6 months.

B. Inspection Related Repairs
   1. Diaphragm valves are rebuilt as needed.
   2. Atomizer electrical plugs are inspected and repaired as needed.

Troubleshooting

Corrective Action: Flue Gas Dry Scrubbers

This section describes the possible causes of serious absorber fault conditions, means of detection and corrective action to be taken to recover from the fault condition.

High Differential Pressure

A. Possible Causes
   1. Blockage of outlet duct by high dust level in hopper or accumulated buildup.
   2. Blockage of gas distributor wing inserts.
   3. Wing inserts in fully closed or partially closed position.
   4. Inlet dampers closed or partially closed.

B. Means of Detection
   1. Normal operating range for differential pressure is 4 to 6” W.C.
   2. Normal operating range for the absorber inlet temperature is 310 deg. F and the outlet temperature is 164 deg. F.
   3. Normal operating range for the lime slurry flows is 10 to 20 gallons per minute.
   4. Normal operating range for the recycle flows is 10 to 20 gallons per minute.
   5. Hopper high-level alarm.
   6. High absorber pressure drop.

C. Remedial Action
   1. Check the level of ash in the hopper. Remove ash if required.
   2. Check wing inserts actuator, which should not have moved from setting during original commissioning. Readjust to proper position.

3. Bring absorber and boiler off line and remove dust buildup on internal gas distributor parts, including vanes, wing inserts, and inlet dampers.

Low SO_2 Removal

B. Possible Causes
   1. Failure of lime slurry control loop.
   2. Operating of absorber at too high an exit temperature.
   3. Plugged lime slurry pipe valve failed.
   4. Improper slaking.
   5. SO_2 monitor failure.
   6. Atomizer malfunction.
   7. Too much dilution of lime slurry.

C. Means of Detection
   1. SO_2 indication recorder or alarm (by others).
   2. Absorber outlet temperature indicator.
   3. Atomizer low-speed alarm.
   4. Check lime slurry density.

D. Remedial Action
   1. Recalibrate SO_2 monitor.
   2. Measure absorber exit gas water dew point.
   3. Switch lime slurry feed control switch to manual. Gradually open the lime slurry control valve.
      a. If lime slurry flow does not increase and there is no reduction in SO_2 emissions, valve has failed or valve control has failed or lime slurry line has plugged. Repair actuator or controller or unplug line.
      b. If lime slurry flow increases, but absorber exit sulfur dioxide does not decrease substantially, lime slurry is of poor quality or is too dilute. Adjust slaker operation or change lime source.
      c. If lime slurry flow increases and absorber exit sulfur dioxide decreases substantially, sulfur dioxide control loop failed. Repair controls.
   4. Repair Atomizer.

High Absorber Outlet Temperature

A. Possible Causes
   1. High boiler outlet temperature due to unusual combustion conditions, excessive slag-up or low feed water flow.
   2. Fire in ductwork.
   3. Failure of recycle/temperature control loop and/or quench system loop.
   4. Rapid change in boiler operation.

B. Means of Detection
   1. Absorber outlet temperature thermocouples as indicated on AQCS panel or alarm.

C. Remedial Action
   1. To avoid potential condensation, slurry valves will trip automatically (absorber trip).
   2. Increase absorber outlet temperature controller set point.
   3. Repair or replace thermocouples as required.
   4. Repair absorber outlet temperature controls.
   5. Observe readings of lime slurry flow and recycle slurry flow rates. If lime slurry flow is unusually high or if recycle slurry flow is at or near zero, proceed with remedial action listed in Low SO_2 Removal.
   6. Switch recycle temperature controller to manual mode. Gradually open control valve.
      a. If recycle slurry flow rate does not respond, valve has failed or valve control has failed. Repair valve, actuator, controller or plugged pipe.
      b. If recycle slurry flow increases and absorber exit temperature decreases substantially, temperature control loop failed. Repair controls.

Wet Ash or Plugged Hopper

A. Possible Causes
   1. Saturation due to low absorber outlet temperature.
   2. Failure of atomizer.
   3. Failure of absorber hopper heaters.
   4. High flue gas moisture content due to wet fuel or boiler tube leak.

B. Means of Detection
   1. Absorber hopper level indicator and alarm.
   2. Absorber outlet temperature thermocouples as indicated on AQCS or alarm.
   3. Atomizer low-speed alarm.

C. Remedial Action
   1. If caused by low absorber outlet temperature, slurry water valves will trip automatically.
   2. Shut off slurry flow and atomizer.
   3. Repair atomizer.
   4. Rod out hopper to dislodge and remove all ash from hopper.
   5. Repair absorber hopper heaters.
   6. Repair boiler.

Spare Parts

Spare parts will be purchased and stored in inventory based on the manufacturer's recommendations and plant operating experience (see tab #4).

Malfunction Abatement Measures

In the event that a malfunction should occur to the flue gas dry scrubber that affects the plant emissions and causes the plant to exceed the permitted levels, specific action will be taken to bring the plant back into compliance. This action will be one or more of the following steps:

1. Continue to run with the failed equipment as long as the plant emissions are in compliance. This may or may not require the boiler(s) to run at a reduced load.
2. Correct the malfunctioned equipment by taking the equipment out of service for repairs. This may or may not require the boiler(s) to run at a reduced load.
3. Correct the malfunctioned equipment by shutting down the boiler(s) and repairing the equipment.

4.4 LIME SLURRY PREPARATION

Description

The lime preparation system serves two atomizers. The lime preparation system is provided with all the equipment for receiving, storing, feeding, slaking (pebble quicklime) and pumping the lime to the atomizers.

Critical Criteria

The lime slurry system is critical to the operation of the atomizers in the Flue Gas Dry Scrubbers.

Inspections

Daily inspections will be performed on the lime slurry preparation system to insure proper operation of the system. The slaker grits screen is changed based upon these inspections.

The plant generally experiences two planned outages each year. Outages usually occur in April and September or October. During the planned outages the lime slaker receives a thorough inspection, which includes power washing the internals.

Operation

A. The lime slurry preparation system is generally operated automatically and it is controlled by a locally mounted PLC (programmable logic controller). The system starts up when the slurry storage tank level falls to 12.5 feet. The system shuts off at 14 feet in the slurry storage tank. In this manner the plant will maintain no less than 25,000 gallons of lime slurry.
B. Prior to boiler start-up, the lime slurry system shall be placed into operation. The slurry storage tank will normally contain at least 10 feet of slurry before the boiler(s) are placed into operation.
C. Operators will make rounds each shift, checking the system for proper operation.
    1. Verify the lake makeup water supply strainer is not plugged.
    2. Verify the secondary water strainer is not plugged (located behind the slaker unit).
    3. Verify the following equipment control switches are in the auto position:
        a. Lime volumetric feed screw.
        b. Slaker paddle shaft.
        c. Slaker supply water booster pump.
        d. Lime silo hopper vibrator
D. Check the slurry (visually) for proper lime/water mixture and slaking.

E. Verify the lime volumetric feed screw housing is not plugged and that lime is flowing freely.
F. Check that the lime silo hopper vibrator cycles on and off at the desired intervals.
G. Verify the slaker water spray nozzles are not plugged.
H. Record the lime storage silo level and report any low levels that may be encountered so that the lime supplier can be notified.
I. Operators will also perform weekly cleaning of the slaker to keep it in optimum operating condition:
    1. Shut down slaker, open the tub hatches and remove the screens.
    2. Scrape excess lime from the paddle shaft in the paste area.
    3. Poke out the weir spray nozzles (3).
    4. Scrape excess lime off the de-lumper portion of the slaker shaft and ensure that the distributor downspout is clear.
    5. Clean out the vapor removal tube and remove the 4" plug and clean out the tube drain line.
    6. Clean out the slaker slurry overflow chamber and ensure that the drain to the slurry tank is clear.
    7. Replace the tub screens.
    8. Start the slaker and check that all three-spray nozzles are not plugged.
    9. Replace the slaker tub covers.

Maintenance

Preventive maintenance is performed on all equipment related to the slaker at scheduled intervals. Repairs are based upon inspections. Record keeping is maintained within the computerized maintenance management system.

A. Preventive
    1. Grease motors monthly
    2. Gearboxes – change oil every 6 months
    3. Grit screen - clean biweekly
    4. Check belt tension on torque valve and grit screw – replace belts if worn
    5. Replace lime volumetric feed screw every 2 years or as needed.
    6. Calibrate the water pressure regulator - annually

B. Inspection
    1. Check operation of water pressure regulators, shutdown solenoid, etc. Repair or replace defective items.

Spare Parts

Spare parts will be purchased and stored in inventory based on the manufacturer's recommendations and plant operating experience (see tab #4).

Malfunction Abatement Measures

1. Continue to run with the failed equipment as long as the plant emissions are in compliance. This may or may not require the boiler(s) to run at a reduced load.

2. Correct the malfunctioned equipment by taking the equipment out of service for repairs. This may or may not require the boiler(s) to run at a reduced load.
3. Correct the malfunctioned equipment by shutting down the boiler(s) and repairing the equipment.

4.5 BAGHOUSES

Description

The baghouses are made up of fabric filter unit(s) that use Pulse Jet cleaning design to ensure removal of the collected particulates. Each fabric filter unit is composed of eight modules, which can be individually isolated from the gas flow. The unit is designed for full-load operation with one module off-line for cleaning. Each module contains 210 bags, which are 6" in diameter and 14' total length.

Critical Criteria

The operation of the baghouses will control the final particulate emissions from the plant. The baghouses will be operated in a manner to satisfy the following critical criteria:

A. Particulate
   1. The particulate emission rate from each of the boilers shall not exceed 0.03 lb/mmBTU heat input.
   2. The particulate emission rate from each boiler shall not exceed 11.5 lbs/hr.
   3. Visible emissions from each of the boilers shall not exceed a 6-minute average of 10% opacity.

Inspections

A. Daily visual inspections of both baghouses will be performed by the operations department. This is accomplished by routine rounds made during the shift. Work orders will be generated when concerns arise.
B. Annual inspections will be performed to determine the condition of all baghouse compartments and ducts. Wall thickness readings will be taken, and bags and cages will be inspected. Inlet, outlet and bypass valves will also be inspected
C. Bags and cages will be replaced approximately on a four-year rotating schedule.

Component Operating Description: Baghouses
Fabric Filter Bypass

A. Components – One pneumatically actuated poppet damper located between the fabric filter inlet and outlet plenums.
B. Function – Means of causing the flue gas stream to bypass the fabric filter, as required by various normal and fault modes of the emission control system.
C. Means of Control – Opening of damper initiated by signal from operator or automatic control system.
D. Internal Fault Modes – Mechanical failure of damper.
   1. Countermeasures – High quality damper and actuator.
   2. Consequences – Fabric filter failure to bypass will result in high-pressure drop which may cause boiler flameout. Possible damage to bags due to high or low

temperatures, high pressure drop or undesirable deposits or condensation in the event of failure of the outlet damper in the open position.

E. Loss of control power or control air pressure.
   1. Countermeasures – None.
   2. Consequences – Damper fails open by gravity.

F. Leakage of damper due to poor blade/seat fit.
   1. Countermeasures – Double-blade damper design.
   2. Consequences – Increased outlet grain loading due to leakage of dirty gas across damper into outlet manifold.

Fabric Filter Bypass Damper

A. Location – At outlet end of fabric filter.
B. Quantity – One
C. Description – 63" diameter double plate poppet type with purged chamber to prevent leakage of dirty gas to outlet manifold, pneumatic positioner actuated by control signal.
D. Function – Closed during normal operation. Opened to provide a path for diverting the flue gas stream directly from the inlet plenum to the outlet plenum, bypassing the fabric filtration subsystem.
E. Normal Control Mode – Command to open given manually by operator or bypass control. Once opened, bypass valve "close" command can only be made by the boiler operator by resetting control system.
F. Fault Control Mode – Open during most system fault modes. Will fail open on loss of power or air.

Fabric Filtration

A. Components – Fabric filter compartments and their inlet and outlet manifolds, compartment inlet dampers, tube sheet, filter bags, cages and compartment outlet dampers.
B. Function – Direction and distribution of contaminated flue gas to fabric filter compartments, admission of flow to each compartment, distribution of flow to filter bags where particulates are trapped and admission of cleaned flue gas to outlet manifold, which directs it to the induced draft fan inlet ducts.
C. Means of Control – Fabric filtration is initiated by opening the compartment pneumatic inlet butterfly and compartment pneumatic outlet poppet dampers while the induced draft system is operating and the fabric filter is in bypass mode. The outlet poppet dampers are actuated pneumatically, as commanded by the control system.
D. Internal Fault Modes – Mechanical failure of poppet damper.
   1. Countermeasures – Use of one outlet damper per compartment.
   2. Consequences – If failed closed, reduction in compartment flow will occur, tending to back pressure inlet manifold and increase flow and pressure drop in other compartments. If failed open, bag cleaning and/or compartment maintenance may be prevented until condition is corrected. Also, there may be

some compartment flow when the fabric filter is in bypass (possible bag damage).

E. Loss of individual damper service compressed air pressure or control power.
    1. Countermeasures – Fail-safe design. Outlet dampers will close.
    2. Consequences – Fabric filter bypass mode initiated, with no component damage.
F. Rupture of filter bags, leakage through tube sheet separating "clean side" and "dirty side".
    1. Countermeasures – Periodic inspection.
    2. Consequences – Increased outlet grain loading due to leakage of dirty gas from the inlet to the outlet manifold.
G. Blinding of bags.
    1. Countermeasures – Specification of fabric filter operating procedures designed to avoid situations where blinding might occur, particularly during fabric filter startup and shutdown.
    2. Consequences – Increase of differential pressure following clean down above normal levels. In severe cases, inability to maintain acceptable fabric filter differential pressure.

Compartment Inlet Dampers

A. Location – Lower portion of compartment just above the hopper.
B. Quantity – One per compartment.
C. Description – Butterfly type, vertically mounted damper equipped with pneumatic operator.
D. Function – Open during normal operation in order to admit dirty gas to fabric filtration subsystem for cleaning. Closed for compartment isolation during maintenance.
E. Normal Control Mode – Compartment cleaning mode switch.
F. Fault Control Mode – Close on loss of electrical power.

Compartment Outlet Dampers

A. Location – Roof of fabric filter outlet plenum.
B. Quantity – One per compartment.
C. Description – 37" diameter poppet type, vertically mounted damper with horizontal metal-to-metal seat. Operated by 24" stroke double-acting pneumatic cylinder equipped with directional and flow control solenoid valves actuated by control signal or by manual override. Has mechanical lock for closed position.
D. Function – Open during normal operation and on-line cleaning to admit clean gas from fabric filtration subsystem to outlet manifold. Closed during off-line cleaning, compartment maintenance and when fabric filter is in bypass mode.
E. Normal Control Mode – Control power from 120 VAC system, control signal generated by AQCS.
F. Failure Control Mode – If control electric power fails, solenoid valves will return them to closed position. In event of low compressed air pressure, will close by gravity. Not fail safe in event of internal mechanical failure.

Filter Bags

A. Location – Attached to tube sheet by snap bands. Suspended in compartment by spring and hanger.
B. Quantity – 210 per compartment.
C. Description – 6" diameter x 14 ft. long. Filter material 16 minimum oz./sq. yd. Weight (nominal) acrylic (Draylon T) felt.
D. Function – Remove particulate from gas stream.

Compartment Cleaning

This operation can only take place if the bypass damper is completely closed.

Compartments are cleaned sequentially, starting nearest the boiler and proceeding toward the stack. If any compartments are in the off-line condition, the controller will proceed to the next "on-line" compartment.

A. Sequence – The cleaning operation is performed by opening and closing compartment dampers and sequencing pulse air through each row of bags, one row at a time with high-pressure instantaneous bursts.
    1. Close compartment outlet damper (off-line cleaning only).
    2. After a delay, begin pulsing bag rows (15 rows total).
    3. Upon completion of pulsing, a period of time is permitted for dust to settle to the hopper.
    4. Open compartment outlet damper (off-line cleaning only).
    5. Begin cleaning next compartment.
B. Differential Pressure Cleaning – This method of cleaning is initiated only when a high differential pressure condition exists and is the normal method of operation. If the differential pressure should drop below the initiation point, the fabric filter will be completely cleaned through the last compartment. At this point, the cleaning will stop and wait for a high differential pressure condition before commencing another cleaning cycle. If the high differential condition exists after the last compartment has been cleaned, the cycle will automatically repeat itself.
C. Manual Initiation Cleaning – The cleaning sequence can be initiated from the AQCS by the operator. Upon initiation, the entire fabric filter will clean one time and stop.
D. Time Interval Cleaning – For periods of low loads where dust buildup is low, a timed interval of eight (8) hours will initiate one cleaning cycle if neither differential pressure nor manual initiated cleaning has occurred.

Hopper Heaters

Hopper heaters are modular (blanket design). Each fabric filter hopper will have 4.1 KW heater. The bottom one-fourth of the area of each hopper will be heated. Heating will be sufficient to maintain the internal skin temperature at the gas temperature.

Hopper heaters are controlled automatically by thermostats at each hopper.

Operation

Start-up

A. When firing the boiler, special attention must be taken to minimize the environmental impact caused by emissions in the flue gas.
B. The boiler should be fired with natural gas as the manufacturers recommended startup rates would allow.
C. To avoid having to wait until the baghouse inlet temperature is 250 deg. F., place the baghouse override 250 switch into override and place baghouse in service. An atomizer should be installed and started up at approximately 150 deg. F scrubber inlet temperature. The baghouse temperature requirements drop to 145 deg. F when an atomizer is placed into operation. Now you can put the override 250 switch back normal.

Normal Shutdown

A. During a boiler controlled shutdown, baghouse operation must be maintained until the boiler flue gas cools to 145 deg F.
B. At that time the coal should be run off the boiler grates and the boiler fans can be shut down to avoid excess opacity emissions.

Emergency Shutdown

A. During an emergency boiler shutdown due to either a water or steam tube rupture, it will be necessary to bypass the baghouse immediately to prevent wetting and caking of the filter bags.
B. The coal fire should be extinguished and run off the grate as soon as possible to help reduce stack opacity emissions.

Effects of Boiler Operation on the Fabric Filter

Boiler Tube Leaks Effect Upon Fabric Filter Operation

Continued operation with boiler tube leaks may require manual cleaning of the bags to remove the deposits. If operation still continues, permanent high-pressure drop and permanent bag damage will result.

If a tube leak should occur (especially with the atomizer off line), the following procedures must be followed:

A. If the tube leak is massive (i.e., one which will cause the boiler to be taken off line immediately), perform the following:
    1. Bypass fabric filter immediately, if possible.
    2. Baghouse should remain in bypass mode until boiler fires are out.
    3. After boiler fires are out, fabric filter should be placed back in the filtering mode and initiate cleaning.
    4. The fabric filter should remain in the filtering mode for at least one complete cleaning cycle. When one cleaning cycle is finished, the fabric filter may be bypassed or remain on line until the low temperature bypass set point is reached. Drying out the filter cake after a massive tube leak by purging with hot boiler purge air in the filtering direction is an important part of fabric filter recovery.

B. If the tube leak is small, the boiler will most likely stay on line. In this case, the fabric filter differential pressure will increase due to the increased moisture content which will cause a denser filter cake.
   1. Manual cleaning initiation should continue on a continuous basis.
   2. Baghouse should clean continuously until boiler is shut down and boiler fires are out.
   3. After boiler fires are out, fabric filter should remain in the filtering mode.
   4. The fabric filter should remain in the filtering mode for at least one complete cleaning cycle. When one cleaning cycle is finished, the fabric filter may be bypassed or remain on line until the low temperature bypass set point is reached. Drying out the filter cake by purging with hot boiler purge air in the filtering direction is an important part of fabric filter recovery after operation with a tube leak.

Baghouse Routine Inspection

It is necessary, as with any mechanical equipment, to establish an effective maintenance program for the fabric filter if continuous, efficient operation is to be achieved. The program should be supervised by a plant engineer, maintenance engineer or supervisor.

An accurate log of all inspections and maintenance work should be maintained. A periodic review of the log will disclose whether the equipment is functioning in accordance with the manufacturer's warranty.

WARNING

WHENEVER INSPECTION OR MAINTENANCE IS BEING PERFORMED WITHIN THE SYSTEM COMPARTMENTS OR FLUE DUCTWORK, SAFETY INSTRUCTIONS MUST BE FOLLOWED. PROPER VENTILATION SHOULD BE FOLLOWED PRIOR TO PERSONNEL ENTRY.

Checklist (I = Initial; M = Monthly; A = Annual; W = Weekly)

A. Check bolt tightness on all bolted parts, especially around poppet and louver dampers and expansion joints. The actuators must be mounted securely with all bolts being wrench tight. The shaft jam nut and packing retainer nut must also be wrench tight on the poppets.
B. Inspect each compartment for bag failure.
C. Manually check all dampers to assure that they are operating properly. Actuate the dampers by turning the manual override on the solenoids and check to be sure that the dampers are seated properly in the closed position and also that they are open to approximately the dimensions shown on the drawings. Check the limit switches by operating the damper to be sure they are functioning. All poppet dampers are either fully open or fully closed and must be maintained accordingly. Under no circumstances should the poppets be adjusted for partial flows. Set the damper stroke speeds as follows (actuate to +0/-2 seconds):

Outlet Poppets	Open – 10 seconds
	Close – 10 seconds
Bypass Poppet	Open – 10 seconds
	Close – 10 seconds

D. Manually check the butterfly dampers at each compartment inlet to assure that they are operating properly. Check the damper seating in the closed position and return to the full, open position. Check the limit switches to assure that they are functioning. The bolts for the bearing must be secure.
E. Check the manual and automatic damper controls from control room AQCS by operating the switches, checking the status indication to assure the operation of the equipment in the field.
F. Follow all compressed air piping per the P & ID's. Blow down piping system prior to connection to final devices to remove any debris which may be in the piping.
G. Inspect the compressed air piping. Blow down all drip legs. Calibrate all pressure regulators. Inspect filters, lubricators and valves. Check entire system for leaks. Calibrate the low-pressure switch. Fill the lubricators and set on lowest dosage rate.
H. Check the AQCS Panel by having it run through at least one complete cleaning cycle, confirming that all equipment is activated properly during the cycle. The AQCS Panel indicators should be viewed during this cycle, along with the actual equipment in the field.
I. Check the operation of all alarm points by inducing alarm conditions at the field instrument.
J. Check the operation of all switches located on the AQCS Panel.
K. Check the operation and calibration of all temperature loops by applying a millivolt signal to the thermocouple lead wire at the head of each thermocouple.
L. Check the operation and calibration of all pressure loops by applying a pressure or differential pressure at each transmitter.
M. Check the operation and calibration of all indicators and set the operating alarm points as specified.
N. Check the operation of the fabric filter bypass controls by simulating a bypass. The dampers should close in the proper sequence. Check the operation of the dampers both in the field and at the control panel.
O. Check the preset values of all timers and counters in the programmable logic controller.
P. Check all bags to see if they are torn, worn, blinded, twisted (should be a straight seam), contain any moisture, or are loose on the cage.
Q. Check all expansion joints for holes or worn areas.
R. Check all internal surfaces for cracks, presence of moisture, corrosion, erosion, or build-up of fly ash.
S. Inspect the blowpipe above each row of bags to ensure that it is centered above the row. An adjustment slot is provided at the downstream end of the pipe to adjust the traverse location of the pipe. If the pipe is not aligned, loosen the mounting bolt and nut, center the pipe and retighten the bolt and nut.
T. Check the plant air dryer to ensure proper operation. A dryer malfunction can cause condensation on bags during cleaning and blind bags. Also, air pipes and equipment can freeze up in cold weather.

U. Check all lubricators or pneumatic lines and refill if necessary.
V. Check door and flange gaskets for leaks. A hissing sound indicates air in leakage, thus identifying a problem with the gasket. Replace gasket immediately.
W. Check pressure drop across each compartment using a manometer.

Absorber Routine Inspection

Vessels and Flues

This category encompasses all ductwork, tanks, absorbers, sumps and silos. These items will be checked for appropriate mechanical construction in compliance with erection prints. Every pipeline must be traced to ensure continuity and agreement with flow prints.

Expansion Joints

A. Fabric expansion joints must be properly bolted to flue work and damper frames. Check that these erection bolts do not extend far enough to tear the fabric. Expansion joints must be aligned within tolerance to the ductwork section in which they are installed.
B. Pipeline expansion joints must be aligned within tolerance to the section of piping in which they are installed.

Centrifugal Pumps

A. The suction and discharge pipeline to each pump should be independently supported to prevent strain on the pump casing. The inlet end of the suction line should be installed below the minimum liquid level of the tank or sump, to eliminate cavitations. The base plate must be level in all directions after all anchor bolts are secured.
B. All pumps are supplied fully assembled, but should be checked for proper impeller clearance by manual rotation. Check the alignment of the motor sheave with the pump sheave on slurry pump. Check to assure that the pump shaft is concentric with the inner packing gland housing.
C. Bearing condition must be satisfactory. Check corroded or pitted surfaces, obtaining specified tolerance and providing the proper amount and type of grease lubricant. See the vendor's manual for alignment and lubrication procedures. Flush the oil reservoir with mineral oil and fill to the specified level on pumps supplied with oil reservoirs.
D. All motor wiring must be rung out to ensure correct connections. The grounding circuitry must be inspected for compliance with electrical drawings to ensure safe operation. Make sure that the pump starter overload heaters are correctly sized for motor trip current. All motor terminals should be meggered to ascertain proper insulation. Space heaters should be operational from the time of initial inspection through motor startup. Use portable heating elements on smaller motors to dry wiring for 48 hours prior to motor startup. No motors should be energized with less than specified resistance to ground. If moisture cannot be readily eliminated with the heaters, apply 110V to the primary pump motor windings (one phase at a time),

with the load unbelted from the motor. (NOTE: 110V to be applied to only those motors rated at 480V or more.)

E. Check for fan inclusion on totally enclosed, fan-cooled motors. Ensure sufficient lubrication of motor bearings as per vendor's manuals.
F. Determine correct motor drive rotation by "bumping" the motor unbelted from the pump. Certain pumps are interlocked to prevent operation under abnormal process conditions or for process control. See the specific starting sequence before "bumping" any pumps. Heat run each slurry pump motor unbelted to the pump for approximately four hours. During this period, monitor no load current and voltage at the MCC. Excessive bearing temperature or vibration should be acknowledged as an indication of abnormality.
G. Before the pump is operated, the impeller eye must be submerged and the suction line filled with water. Never operate a pump with a restricted discharge line. Failure to prime a pump may cause the lantern ring to seize or scoring of the shaft at the packing box. With the motor breakers racked out, install the belts, obtaining correct V-belt tension. Proper tension is obtained by employing the following formula:

D_B = 1/64 X Sheave Span

Where D_B = deflection of belt (measured in inches) when 30 psi force is applied to the belt.

Sheave Span = distance between centerline of sheaves (measured in inches)

H. Note: When new belts are installed, they should be initially tightened 30 percent tighter than the formula indicates. This compensates for initial belt stretching.
I. After coupling of the motor and pump, rotate the shafts by hand to ensure that all moving parts are free of foreign objects and to check for possible binding. "Bump" the motor before starting the pump. Once running, check the packing box and suction line for leaks. Check that the thrust bearing and bearing journals are cool and sufficiently supplied with oil.
J. On slurry pump, retightening of the gland will be required during the first hours of operation. During the first eight hours of operation, monitor the voltage and current (phase balance) of the motor. Check bearing temperature and vibration. Visually check sheave alignment.
K. Observe pump vibration and possible cavitations. Existence of either of these conditions to a significant degree will require immediate correction. Vibration without cavitation implies improper impeller balance or alignment. Cavitation can be prevented by increasing the pump's suction head.
L. Prime the standby pump in the same manner as previously described and continue with checkout procedures for the standby pump.

Agitators

A. Agitator supports must be attached securely and installed for correct agitator location. Ascertain that motor grounding is installed as per the electrical drawings

for safe operation. Meggar all motor terminals to ensure proper insulation from ground. If dampness has impaired the insulation, apply 110V across one motor winding at a time to evaporate moisture (note: only on motors rated at 480V or More). Check that overload heaters are properly sized for the agitator motors.

B. Check the gear reducer bearing condition. Make sure the bearings are free of corrosion, pitting and galling. Ascertain that the proper amount and type of grease has been applied to the bearings (see respective vendor manual). Flush the gear case oil reservoir with mineral oil and fill to the specified level with approved oil. Make sure the gearbox pressure equalization breather is undamaged and unobstructed. Where applicable, check the winding cooling fan for obstruction and determine proper fan operation.
C. "Bump" the agitator motor to verify correct rotation as per the nameplate directional arrows. Run the motor and gearbox uncoupled from the impeller for four hours. During this period, monitor no load motor current (phase balance) and voltage, bearing temperature and vibration. Rated motor current and voltage and the maximum allowable bearing temperature are printed on the nameplate.
D. Now the agitator can be coupled to the impeller shaft. The coupling should be aligned so as to maintain shaft run out as specified by the manufacturer. The sleeve bearing must be aligned properly to avoid binding. Grease the bearings and couplings where applicable. The impeller shaft must be installed at the proper angle. The static and dynamic forces exerted on the shaft are accommodated by the agitator support for the design installation angle only. Hand rotate the impeller to ascertain the manufacturer's recommended clearance from baffles or other obstructions.
E. Fill the vessel to the expected normal level above the impeller, in conjunction with vessel leak testing. The agitator should never be operated with fluid drag on the impeller blades. Start up the agitator. Observe the concentricity of the shaft coupling, the sleeve bearings and the stuffing box. Monitor bearing temperature and vibration, motor current (phase balance) and voltage and shaft RPM.

Valves

A. Check each valve for freedom of movement, proper clearance and seating and absence of obstruction. Ascertain the sufficiency of the packing material or Teflon seal around the valve stem. On rubber-lined valves, check that the lining has not been damaged.
B. Ensure that the local and remote (where applicable) position indication corresponds with the actual valve position and that the indicator is unobstructed from full travel.
C. When the pumps are hydrostatically tested, check for leakage around valve flags and valve stems. Solenoid controlled, air operated valves and control valves require supplemental commissioning.
    1. Solenoid-Controlled, Air-Operated Valves (two position) - Ensure that electrical wiring connections to the solenoid and instrument air supply connections to the operator are correctly made up. Energize and de-energize the solenoid several times and determine proper valve operation.
    2. Control Valves – In conjunction with density, level or flow-control loop commissioning, provide the control signal (contact closure on 110V supply,

4-20 MA or 3-15 PSIG) to the control valve and observe the response. Determine correct drive rotation to satisfy the logic of the control loop. Ensure full travel of the valve.

Hoists

A. Be sure that the trolley wheel spacing is correct with respect to the beam on which the wheels travel.
B. All motor wiring must be rung out to ensure correct connections. The grounding circuitry must be inspected for compliance with electrical drawings to ensure safe operation. Make sure that the hoist circuit breaker is properly sized for motor trip current. All motor terminals should be meggered to ascertain proper insulation. The motor should not be energized with less than specified resistance to ground. If moisture cannot be eliminated with a portable, wrap-around heating element, apply 110V to the primary motor windings (one phase at a time) with no load on the hoist hook. Proper direction of rotation must be verified. Using the pushbutton control, push the "UP" button. While the hoist is operating "UP", raise the limit switch lever. This will open the "UP" circuit and shop the hoist. If it does not stop the hoist, the direction of rotation is reversed. Reverse any one of the incoming phases to reverse the rotation of the motor.
C. Once proper rotation has been established, operate the hoist up and down using the pushbutton station. During this period, monitor current and voltage and ascertain that the motor is operating within its nameplate ratings.

Atomizer

A. Atomizer inspection should be performed per the vendor information.

Bag Failure Identification and Repair

A. A properly maintained and operated fabric filter should yield filtering efficiency of 99+%, in which case the outlet gases may have visible hue due to emissions. Do not confuse water vapor condensation with particulate emissions.
B. Opacity readings should be checked daily. A change in the opacity may indicate broken bags. Observe opacity during the cleaning cycle. When a compartment is being cleaned, it does not participate in the particulate removal. If opacity is notably lower during a part of the cleaning cycle, the compartment being cleaned at this time likely has broken bags.
C. Low compartment pressure may also indicate broken bags. If any one compartment has a tube sheet differential pressure which is consistently lower than the other compartments, and the stack opacity is poor, chances are very good that the low reading compartment has broken bags. This can be determined using a manometer and connecting it to the tube sheet pressure taps.
D. Damage to the filter cloth must be located at the earliest possible time and the punctured bag replaced. There are two basic inspection techniques:
    1. First, visual inspection of all bags. The first indication of a bag failure is often an accumulation of dust in the bottom of the failed bag. This is particularly true if the bag failure occurs near the bottom; however, those failures near the top of

the bags are unlikely to provide any tell-tale dust accumulation, and in this case it will be necessary to inspect the full length and circumferences of each bag looking for the failures. Dust patterns, even when they cannot specifically locate the failed bag, can be of assistance in at least locating the general area.

2. A second technique is the use of a tracer powder and ultraviolet light (visolite). In this instance a black-light sensitive powder is fed into the compartment while the system is on line. The compartment is then brought off line and is scanned with an ultraviolet light. The light-sensitive material will glow and immediately identify the location of leaks. It will probably be necessary to search the full area of each bag.

Inspection and Replacement of Filter Bags

A. Shut down the system, as per shutdown procedure.
B. Open the clean-air plenum access door and inspect them for dust deposit, which would indicate the area containing the damaged bag.
C. Locate the damaged bag by inspection with the air of a standard extension light. The light may be suspended inside the bag and dropped until it strikes the bottom of the bag. Any accumulation of dust at the bottom of the bag indicates the dust was released from the inside of the bag by the shock of the falling light and the bag is, in fact, damaged.
D. To remove the filter bag and cage assembly:
    1. Lift the cages out of the bag far enough to clear the bag cuff. Temporarily store the cages in clean air plenum or on access platform.
    2. Pull the bags out by pinching in bag cuff (by firmly applying both thumbs at one point) to a kidney shape and lift the bag out far enough to clear the tube sheet (which is the floor of the walk in plenum).

WARNING: Clean air plenum must be totally free of dust before the unit is put back on line. Any free dust can be aspirated into pulse blowpipe and can cause bag damage during subsequent cleanings.

3. To replace filter bag and cage assembly, reverse the above procedure. Take care not to damage any part of the assembly during this operation.

Troubleshooting

Corrective Action – Baghouses

This section describes the possible causes of serious fabric filter fault conditions, means of detection and corrective action to be taken to recover from the fault condition.

High Differential Pressure

A. Possible Causes
    1. Unusual rate of filter cake buildup due to high grain loading.
    2. Blockage of flow into compartment due to high dust in hoppers. Blockage of ductwork due to dust buildup.
    3. Blinding of bags, probably caused by excessive boiler tube leaks or operation at temperatures close to dew point.
    4. Loss of cleaning function due to cleaning sequence failure.
    5. Failure of compartment outlet dampers in fully or partially closed position.
    6. Plugging of differential pressure sensor lines.
    7. More than one compartment off line.
    8. Boiler load increase. A thicker filter cake is obtained under sustained operation at low load to maintain the same maximum pressure drop across the fabric filter. When load is increased, the pressure drop may exceed the maximum allowable. This can be avoided by initiating a cleaning cycle approximately one hour prior to a load increase.
B. Means of Detection
    1. Normal operating range for differential pressure is 4" to 6" WC.
    2. Baghouse controls by-pass the baghouse at 8 to 9" WC.
    3. Normal temperature operating range for the baghouse is 164 degrees F.
    4. Baghouse controls by-pass the baghouse at 150 deg. F. on low temperature and 270 degrees F. on high temperature.
C. Remedial Action
    1. Manually initiate the cleaning mode.
    2. Purge the differential pressure lines with compressed air.
    3. If the damper position indicators on the AQCS Panel indicate closed inlet or outlet dampers on compartments which should be operating, attempt to open them manually.
    4. Check the level of ash in the hopper. Remove ash if required.
    5. Inspect bags for blinding. (See Maintenance Procedures).
    6. Analyze ash for size and loss on ignition.
    7. Analyze flue gas for change in oxygen or carbon monoxide content. A change in boiler operation or fuel source may cause incomplete combustion, whose products can blind bags.
    8. Check that proper startup procedures are followed.
    9. If the differential pressure does not drop below the alarm point after two complete cleaning cycles, consult GEESI on the cleaning period.

High Fabric Filter Temperature

A. Possible Causes

1. Fire in compartment or ductwork.
2. Thermocouple failure.

B. Means of Detection
   1. Fabric filter outlet temperature indication on AQCS or alarm.

C. Remedial Action
   1. Manually initiate bypass. Enter affected compartment with appropriate fire extinguishing equipment to verify that the fire is out.
   2. Following normal off-line maintenance procedure, inspect compartment to determine extent of equipment damage, if any.
   3. Analyze ash for loss on ignition and flue gas for carbon monoxide content. An increase in either shows incomplete combustion in the boiler. Adjust boiler operation to prevent future fires.

High Opacity

A. Possible Causes
   1. Bag failures.
   2. Over cleaning the bags.
   3. Failure of bypass damper to seat properly.
   4. Leakage across bypass damper.

B. Means of Detection
   1. Normal operating range for differential pressure is 4" to 6" WC.
   2. Baghouse controls by-pass the baghouse at 8 to 9" WC.
   3. Normal temperature operating range for the baghouse is 164 deg. F.
   4. Baghouse controls by-pass the baghouse at 150 deg. F. on low temperature and 270 deg. F. on high temperature.

C. Remedial Action
   1. Check compartment differential pressures. An abnormally low differential pressure may indicate an inadequate filter cake or broken bag.
   2. Identify and replace broken bags (see Maintenance Procedures). If broken bags exist in only one or two compartments, the compartment(s) can be located by monitoring the stack during a cleaning cycle. At the time that a compartment with failed bags is brought off-line, the opacity will be reduced. When it returns on-line, the opacity will increase.
   3. Check for other potential causes of leakage if there are no apparent bag failures. Welds in the wall separating the inlet and outlet manifolds, around the thimbles or in the tube sheets can be a source of leaks.
   4. Adjust bypass damper linkage or damper actuator to seat damper in closed position.

High Fabric Filter Inlet Temperature

A. Possible Causes
   1. High boiler outlet temperature due to unusual combustion conditions, excessive slag-up or low feed water flow.
   2. Boiler air pre-heater failure.

3. Fire in ductwork between absorber and fabric filter.
4. Excessive flue gas reheat.

B. Means of Detection
1. Fabric filter inlet temperature thermocouple, as indicated on AQCS Panel.
2. High inlet temperature alarm.

C. Remedial Action
1. The fabric filter will automatically be put into bypass mode by the control system, if temperature exceeds 275 degrees Fahrenheit.
2. The operator will take appropriate action relating to the boiler, air pre-heater or fire once the cause of the over-temperature condition has been determined.

Low Fabric Filter Outlet Temperature

A. Possible Causes
1. Low absorber outlet temperature.
2. Cracks in ductwork or casing, causing substantial in leakage of outside air.
3. Failure of the fabric filter outlet thermocouple.
4. Failure of inlet, outlet or reverse air dampers to seat properly when a compartment is isolated for maintenance, allowing in leakage of outside air.
5. Access doors left open or not adequately closed.
6. Rupture of expansion joints.
7. Failure of insulation.
8. Substantial in leakage through failed door gaskets.

B. Means of Detection
1. Baghouse outlet temperature thermocouple, as indicated on AQCS Panel.

C. Remedial Action
1. To avoid potential condensation, fabric filter should be put into bypass mode.
2. Increase absorber outlet temperature, if applicable.
3. Repair or replace thermocouples as required.
4. Repair absorber outlet temperature control.
5. Repair poppet dampers for compartment currently off-line to achieve less leakage.
6. Replace door gaskets.
7. Repair or replace expansion joints.
8. Check for hot spots around exterior of casing, hoppers, ducts and reverse air system. Repair or replace insulation.
9. Check for in leakage. (See Maintenance Procedures). Repair cracks.

Spare Parts

Spare parts will be purchased and stored in inventory based on the manufacturer's recommendations and plant operating experience (see tab #4).

Malfunction Abatement Measures

In the event that a malfunction should occur to the baghouse system that affects the plant emissions and causes the plant to exceed the permitted levels, specific action will be taken to bring the plant back into compliance. This action will be one or more of the following steps:

1. Continue to run with the failed equipment as long as the plant emissions are in compliance. This may or may not require the boiler(s) to run at a reduced load.
2. Correct the malfunctioned equipment by taking the equipment out of service for repairs. This may or may not require the boiler(s) to run at a reduced load.
3. Correct the malfunctioned equipment by shutting down the boiler(s) and repairing the equipment.

4.6 Continuous Emissions Monitoring Systems (CEMS)

Description

Continuous emissions monitoring systems (CEMS) are used to provide monitoring and recording of the emissions as required by the ROP or other applicable air quality requirements not yet incorporated into the ROP. Each system is a complete emissions monitoring, data gathering, and reporting system used to provide information for reports submitted to EGLE and EPA. The CEMS monitor the Inlet CO_2 and SO_2 and Stack CO_2, SO_2, NO_X, CO, Flow and Opacity for each of the individual units.

CEMS and opacity monitor data are collected and recorded using a data acquisition and handling system (DAHS). The CEMS is housed in a common environmentally-controlled shelter located at the base of the Units 1 and 2 stacks. Comprehensive descriptions of the CEMS, opacity monitors and DAHS are contained in the vendor O&M manuals, maintained on file at the facility. A detailed description of the individual CEMS, opacity monitors and DAHS (e.g., monitor component serial numbers and date of installation) can be found in the Monitoring Plan. The Monitoring Plan and the system O&M manuals are available for examination by the applicable regulatory agencies.

Out-of-stack dilution probes are mounted in the exhaust gas ducts upstream of the spray dryer absorbers and in the stack flues for each of the boilers. The dilution probes remove a small sample of the boiler effluent, dilute the sample with conditioned air, and then transport the sample through an umbilical to the remote CEMS analyzers. The sample probes are installed in a manner that ensures the collection of a representative effluent sample. The designed dilution ratio for the CEMS is 100:1.

A PLC is used to control the interface between the probes, instrument air supply, calibration gases and analyzers. The PLC controls the proper valve sequencing for automatic sampling and calibration. The sample umbilical connects the probe to the analyzer extraction manifold. A sample-conditioner controller is used to control the interface between the probe, purge air supply, calibration gases and the CEMS analyzers. The sample-conditioning controller contains the pressure regulators, manifolds and solenoids needed to coordinate the distribution of the instrument air, calibration gases and diluted gas samples.

Operation

The CEMS will be operated properly by trained and experienced operators at all times when the boiler(s) are in operation. Specifically, the opacity monitors will be in service whenever the induced draft (ID) fans are in operation, while the gaseous CEMS and Flow CEMS will be in operation whenever fuel is being combusted in the boilers (i.e., when flame is detected in the boiler). The equipment will be operated in accordance with the manufacturer's recommendations and operating procedures.

Critical Criteria

A. Opacity

Each opacity monitor is designed to accurately monitor and record the individual flue gas opacity. Visible emissions from the boilers shall not exceed a six minute average of 10% opacity.

B. NO_X

Each NO_X analyzer is designed to accurately monitor and record the NO_X concentration levels from the boilers. This data is used in conjunction with the diluent gas levels to calculate NO_X lb/mmBtu emissions rates, and is also used in conjunction with the Flow CEMS data to calculate NO_X mass emissions. The NO_X emission rate from the boilers shall not exceed 0.60 pound per million Btu heat input; based on a 30-day rolling average, or 2,018 tons per 12-month rolling time period (for both boilers combined). Note that the NO_x lb/mmBTU emission limit varies based upon the relative heat input fraction from solid and gaseous fuels.

C. CO

Each CO analyzer is designed to accurately monitor and record the CO concentration levels from the boilers. This data is used in conjunction with the diluent gas levels to calculate CO lb/mmBtu emissions rates, and is also used in conjunction with the Flow CEMS data to calculate CO mass emissions. The CO emission rates from the boilers shall not exceed 0.3 pound per million Btu heat input or 115.2 pounds per hour, based on a 24-operating hour average, or 1,009.2 tons per 12-month rolling time period (for both boilers combined). The CO lb/mmBTU emission limit does not apply during periods of startup and shutdown.

D. SO_2

Each SO_2 analyzer is designed to accurately monitor and record the SO_2 concentration levels from the boilers. For each boiler, an SO_2 analyzer is installed both upstream of the spray dryer absorber control device and in the stack flue. The inlet and stack SO_2 concentration data is used in conjunction with the diluent gas levels to calculate SO_2 lb/mmBtu emissions rates, while the stack data is also used in conjunction with the Flow CEMS data to calculate SO_2 mass emissions. The SO_2 emission rates from the boilers shall not exceed the following:

1. 0.5 pound per million Btu heat input, based on a 30-day rolling average.
2. 10 percent of the potential SO_2 emission rate, based on a 30-day rolling average rate. Note that there are varying percent reduction requirements depending upon outlet SO_2 emission rates and the relative heat input fraction from solid and gaseous fuels.
3. 0.7 pounds per million Btu heat input, based on a 24-hour daily average.
4. 6.45 tons per day for both boilers combined.
5. 1,681.9 tons per 12-month rolling time (for both boilers combined).

6. 0.200 pound per million Btu heat input, based on a 30-day rolling average, excluding periods of startup and shutdown.

E. CO_2

Each CO_2 analyzer is designed to accurately monitor and record the CO_2 concentration levels from the boilers. For each boiler, a CO_2 analyzer is installed both upstream of the spray dryer absorber control device and in the stack flue. This data is used for purposes of calculating lb/mmBtu emission rates and allowing the calculation of heat input when used in conjunction with the Flow CEMS and appropriate fuel factors.

F. Flow

Each Flow analyzer is designed to accurately monitor and record the wet standard cubic feet per minute exhaust flow rate in the stack flue. This data is used for purposes of calculating mass emission rates and allowing the calculation of heat input when used in conjunction with the stack CO_2 CEMS and appropriate fuel factors.

It should be noted that Particulate, Total non-methane hydrocarbons (NMHC) and Mercury are not monitored by CEMS. Periodic stack testing for these pollutants is conducted for purposes of demonstrating compliance with the ROP and other emission limits.

Inspections

Daily, weekly, monthly and quarterly inspections will be performed on the CEM equipment to ensure that the equipment is operating properly and to observe various changes that may indicate potential malfunction. In accordance with the manufacturer's recommendations, a preventive maintenance program will be followed for the emissions monitoring equipment. The maintenance is listed below for each analyzer type as well as general maintenance.

SO_2 Analyzers

- Clean fan filter on rear panel quarterly
- Rebuild pump once per year

NO_X Analyzer

- Clean photomultiplier tube cooler fins every 6 months
- Clean fan filter on rear panel quarterly
- Rebuild pump yearly

CO Analyzer

- Replace IR source as needed
- Clean fan filter on rear panel quarterly
- Rebuild pump yearly
- Blow dust off wheel yearly
- Change Purafil, charcoal and molecular filter media yearly

CO_2 Analyzers

- Clean fan filter quarterly
- Rebuild pump yearly

Flow Analyzers

- Leak test impulse lines quarterly
- Check for liquid in lines

Opacity Monitors
- Change air filters quarterly
- Clean optical windows and reflector quarterly
- Check alignment quarterly
- Test output with optical filters quarterly and calibrate if necessary.

Sampling System
- Flush lines with acetone as needed
- Replace heated filters as needed

General Checks
- Change air supply filter yearly
- Change air dryer columns every 5 years
- Daily checks of the system (M-F):
    1. Check printouts for indication of problems
    2. Check visual indicators on analyzers
    3. Check calibration drift
    4. Check instrument air pressure
    5. Check printer paper supply
    6. Check computer operation
    7. Check pressure of calibration gas cylinders

Checks performed once per week:
- Perform Weekly Diagnostic Checklist

Maintenance
Maintenance on the CEMS and opacity equipment will be performed to the manufacturer's recommendations and past practices. Normal maintenance of the equipment will be performed during the spring and fall plant outages with replacement of worn or defective parts. Other maintenance will be performed to either replace or rebuild various pieces of equipment should a malfunction occur.

Spare Parts
Spare parts will be purchased and stored in inventory based on MSI's recommendations and plant operating experience (see tab #4).The spare parts inventory list is stored in the Computerized Maintenance Management System.

Malfunction Abatement Measures
In the event that a malfunction should occur to CEMS or opacity equipment that affects monitoring, recording and reporting of the plant emissions, specific action will be taken to correct the equipment malfunction. This action, in cooperation with EGLE, will be either one or more of the following steps:

1. Based on a stable operation of the boiler and being in compliance with the required emission levels at the time of the malfunction, continue to run the boiler at steady state operation and repair the CEMS or opacity failure immediately.
2. Should it be determined that equipment replacement is required in lieu of repairs, continue to run the boiler at a steady state of operation and replace the equipment immediately.
3. Should it be determined that replacement of the equipment is going to take an excessive length of time, continue to run the boiler at a steady state of operation and arrange for rental of CEMS or opacity equipment or the use of other acceptable test / measurement methods in the interim period.
4. Should all of the above efforts not be acceptable, as a last resort, shutdown the boiler until the CEMS or opacity equipment can be repaired and placed into service.

5.0 REPORTING

Operating reports including T.E.S. Filer City Station emission levels and plant operating data are submitted quarterly by written report to the EGLE district supervisor within 30 days following the end of the quarter. The quarterly report includes a detailed analysis of all recording, reporting and record keeping requirements in compliance with the current Renewable Operating Permit (ROP).

In addition to the quarterly reports, notifications will be provided to the EGLE district supervisor of any abnormal conditions or malfunctions of the process or control equipment that results in emissions in excess of the ROP limits for more than two hours. This notice will be made as soon as reasonably possible, but no later than two (2) business days following the day of the incident. Also, within 10 calendar days, a written detailed report including probable causes, duration of violation, remedial action taken, and the steps which are being taken to prevent a reoccurrence will be submitted to the EGLE district supervisor. Further, all monitoring data for T.E.S. Filer City Station will be kept on file at the plant for a period of five years and made available to the EGLE district supervisor upon request.

6.0. OPERATING PHILOSOPHY

The operating philosophy implemented at T.E.S. Filer City Station is to operate the plant within the emission levels required by the Renewable Operating Permit (ROP). To achieve these goals, the boilers are operated in the most efficient manner possible, which in turn, provides for complete combustion. The operation of the plant is maintained by utilizing properly trained and experienced operators. In addition to proper operation, it is equally important to establish inspection and maintenance procedures that allow the plant to continue running in an optimum operating condition. These procedures include regular scheduled inspections. Properly trained and experienced plant operators and maintenance personnel perform the inspections. To ensure that maintenance is performed in a timely manner, an inventory of appropriate spare parts is available at the plant for normal scheduled maintenance. The quantity and type of spare parts selected for inventory is based on the manufacturer’s recommendations and plant operating experience.

C/D WASTE WOOD MONITORING PLAN

SRN: N1685

September 20, 2012

Amended September 25, 2019

1. SCOPE

The sampling methods and specifications herein have been established and will be implemented to ensure that only high quality construction demolition waste wood is received and that it complies with the non-wood debris limitations.

2. SIGNIFICANCE AND USE

The sampling and inspection procedure described are used to determine if construction and demolition waste wood meets the criteria established for TES Filer City and to ensure compliance with the ROP conditions for emission group FGFUELSTORAGE.

3. APPARATUS

3.1 Test Bin, constructed of rigid materials with measurements 30” long x 30” wide x 6” high with an open top.

3.2 Inspection Grid, consisting of a square rigid frame designed to closely fit over Test Bin; with wires attached to said frame in a manner resulting in 100 – 3’ x 3” observation grids.

3.3 Gross Sample Container with a volume of at least 5 cubic feet.

4. PROCEDURE

4.1 Sampling

4.1.1 Collection of the Sample - Once unloaded, samples will be taken from a minimum of 4 random locations in the pile and combined until at least 3 cubic feet have been sampled.

4.1.2 Preparation of Sample - The individual samples are deposited into the gross sample container and mixed thoroughly. Fill the test bin to within 1/2” of the top lip with sample material and then place the inspection grid on top of the test bin.

4.2 Inspection

4.2.1 For the purposes of this protocol:

"Painted Wood" includes wood material which has any trace of paint upon it. **"Incidental Non-wood Material"** includes, but is not limited to metals, paper, cardboard, vinyl, textiles, linoleum, fiberglass, plastic, plaster and dry wall, masonry materials, non- wood yard waste, roofing materials, electrical wiring, and wood impregnated with preservatives.

4.2.2 Visual Observations of Painted Wood and Painted Wood and Incidental Non-wood Material - The inspector will observe and estimate the percentage of surface area occupied by painted wood in each of the 100 - 3" x 3" grid squares. <u>If there is any trace of paint on a piece of wood, the entire surface of that piece of wood shall be counted as painted wood.</u>

The inspector will then estimate the percentage of surface area of each grid square occupied by painted wood and incidental non-wood material.

Visual observations of painted wood and painted wood and incidental non- wood material amounts in each grid square shall be rounded off to the nearest five *(5)* percentile.

4.2.3 Recording Results - Record the two types of observations on the **WASTE WOOD SAMPLING & INSPECTION FORM** (attached). If no painted wood or painted wood and incidental non-wood material is observed in a grid, a zero *(0)* shall be entered at the corresponding location on the data sheet.

4.3 Calculations

4.3.1 Calculation of the Percentage of Painted Wood and Painted Wood and Incidental Non- wood Material for the Entire Sample - Calculate the average grid square observation percentages for painted wood and painted wood and incidental non-wood material observations and record on the **WASTE WOOD SAMPLING & INSPECTION FORM**. The average grid square observation percentages for painted wood and painted wood and incidental non-wood material are also recorded on the **INSPECTION LOG** (attached).

4.4 Frequency of Sampling and Inspection

4.4.1 TES Filer City will sample and inspect every fourth shipment of C/D waste wood received from the Mid-Michigan Recycling processing facility in Flint and all shipments from other suppliers.

4.4.2 A supplier may request a reduction in the frequency of sampling and inspection if they have demonstrated superior and consistent quality control levels. The requested sampling reduction will require approval from the Department of Environment, Great Lakes, and Energy (EGLE) approval.

4.4.3 The 12 month rolling average value of painted wood must not exceed one and one-half percent *(1-1/2%);* and for painted wood and incidental non-wood material, the 12-month rolling average must not exceed two and one-half percent *(2-1/2%).* If during any month these limits are exceeded, TES Filer City will notify EGLE. TES Filer City will provide the EGLE with the percentage value of painted wood or painted wood and incidental non-wood material derived, corrective action taken to improve the quality of waste wood being processed at a supplier and its plans for a follow-up inspection of the waste wood exceeding the quality limits.

4.4.4 EGLE representatives may enter TES Filer City at any time during normal operating hours to sample and inspect in accordance with the protocol contained herein. TES Filer City will provide apparatus and collection tools to EGLE personnel for conducting the sampling and inspection protocol.

4.5 Processed Waste Wood Load Rejection Criteria

4.5.1 TES Filer City will not accept any load which exceeds 3% for painted wood or 4.5% for painted wood and incidental non-wood material, as determined by these sampling and inspection procedures. TES Filer City will verbally notify the supplier immediately and follow up in writing no more than 5 days subsequent to any load rejected at TES Filer City. The supplier will follow up with diagnostic and corrective action to improve the quality of waste wood at the source responsible for the rejected load.

4.6 Re-inspection

4.6.1 If there is a disagreement between parties with respect to the visual observations of painted wood or painted wood and incidental non-wood material recorded by an inspector, there will be an opportunity for re- inspection by a panel of representatives from EGLE, TES Filer City and the supplier. When a re-inspection has been requested, subject sample will be placed in a sealed container and retained for re-inspection by the panel of representatives.

4.7 Records

4.7.1 The **WASTE WOOD SAMPLING & INSPECTION FORM** and **INSPECTION LOG** will be maintained at TES Filer City. These records will be made available for EGLE inspection upon request.

4.7.2 During any calendar quarter that TES Flier City receives C/D wood waste, a quarterly report detailing quantities and sampling results will be submitted to EGLE.

INSPECTION LOG

SHEET# _____

DATE	TIME	INSPECTOR	% PAINTED WOOD	% PAINTED WOOD & INCIDENTAL NON-WOOD MATERIAL	COMMENTS

Compliance Assurance Monitoring (CAM) Plan
TES Filer City Station EUBOILER01 and EUBOILER02

I. BACKGROUND

Emission Unit

Description: Two Foster Wheeler nominal 384 million Btu/hour coal, wood, tire-derived-fuel (TDF) and natural gas fired boilers. Although the boilers are allowed to fire petroleum coke and construction/demolition waste, such fuels have not been fired in the past few years or longer and are not anticipated in the future. The boilers are of a spreader-stoker design. Each boiler is equipped with a lime spray dryer (or dry scrubber) to control sulfur dioxide and acid gas emissions and a baghouse to control particulate matter.

Identification: EUBOILER01
EUBOILER02

Facility: TES Filer City Station
700 Mee Street
Filer City, Michigan 49634

Applicable Regulation, Emission Limit, Monitoring Requirements

Renewable Operating Permit No: MI-ROP-N1685-2015b

Emission Limits:

Particulate Matter ------ 0.03 lbs per MM Btu heat input. Basis: R 336.2810, 40 CFR 60.42Da(a)

11.5 lbs per hour. Basis: R 336.2810

Monitoring Requirements:

Particulate Matter ------ Compliance with the particulate matter emission limits is verified by conducting periodic stack testing to demonstrate compliance with the lb/mm Btu emission limit and establish PM emission factors. These emission factors are then used in conjunction with monitored heat input to calculate lbs/hr emissions and demonstrate compliance.

Visible emissions (i.e., opacity) are used as a surrogate for ensuring ongoing compliance with the particulate matter emission limit. Opacity monitoring is conducted using a certified Continuous Opacity Monitoring System (COMS).

Control Technology (PM)

Each boiler has an individual pulse jet fabric filter to control particulate emissions from the boiler, and a lime slurry spray dryer absorber (used for flue gas desulfurization), or SDA, that follows each boiler. While the boilers exhaust through a common stack after passing through their individual control systems, each boiler exhaust is separated by individual stack flues. According to US EPA's AP-42 emissions factor document, the control efficiencies of baghouses range between 80% and 99.9% by weight.

At the rated capacity of the boilers, the typical exhaust flow rates and controlled PM emission rates are as follows (based upon 2018 stack test data): EUBOILER01 = Flow Rate ≈ 142,000 actual cubic feet per minute (acfm); Controlled PM Emission Rate ≈ 0.0041 lb/mmBtu and 0.25 to 5.68 lbs/hour; EUBOILER02 = Flow Rate ≈ 145,600 actual cubic feet per minute (acfm); Controlled PM Emission Rate ≈ 0.0027 lb/mmBtu and 0.41 to 1.79 lbs/hour.

CAM Applicability (PM and SO_2)

The pollutant specific emission limits potentially subject to CAM include those for particulate matter (PM) and sulfur dioxide, as compliance with these emission limits relies upon the use of control devices and potential uncontrolled emissions of these pollutants are greater than 100 tons per year, as described below.

The potential pre-control PM and SO_2 emission rates from each of the boilers has been estimated based upon the use of the EPA's AP-42 document. Table 1.1-4 indicates that a coal-fired spreader stoker boiler, without any particulate matter controls, would emit PM at a rate of 66 lbs/ton of coal fired. Assuming that the boilers exclusively fire coal with a heating value of 12,000 Btu/lb, the preceding emission factor yields a potential particulate matter emission rate of 1,056 lbs/hr per boiler at each boiler's nominal rate heat input rate of 384 mmBtu/hr. Assuming the boilers operate continuously (i.e. 8,760 hrs/yr) at rated capacity, the potential pre-control PM emission rate is approximately 4,625 tons per year for each boiler. Similarly, Table 1.1-3 suggests an SO_2 emission factor (lb/ton) of 38*S (where S is the percent sulfur in the coal) for bituminous coal-fired spreader-stoker boilers. The ROP limits the sulfur content of the coal to 3% by weight, and this equates to a potential uncontrolled SO_2 emission rate of 1,824 lbs/hr per boiler at an assumed coal heating value of 12,000 Btu/lb, or 7,989 tons/yr per boiler based on continuous operation at rated capacity. Thus, potential pre-control PM and SO_2 emissions are well above the major source threshold of 100 tons per year.

It should be noted that the boilers are subject to the Cross State Air Pollution Rule (CSAPR) and related monitoring requirements in 40 CFR Part 75 for SO_2, NO_x, diluent and flow. As such, the facility has installed and operates Continuous Emissions Monitoring Systems (CEMS) for the preceding parameters, and the ROP specifies use of these CEMS in relation to demonstrating compliance with the various SO_2 emission limits. Therefore, the SO_2 emission limits are exempt from the CAM requirements pursuant to 40 CFR 64.2(b)(1)(vi).

Lastly, the boilers are also subject to 40 CFR Part 63, Subpart UUUUU – National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-fired Electric Utility Steam Generating Units, also known as the Mercury and Air Toxics (MATS) rule. Under MATS, each unit is complying with a PM emission limit of 0.030 lb/mmBtu and an SO_2 emission limit of 0.20 lb/mmBtu. These PM and SO_2 emission limits reflect emission limitations or standards proposed by the Administrator after November 15, 1990 pursuant to Section 112 of the Clean Air Act. Therefore, these emission limits are exempt from the CAM requirements pursuant to 40 CFR 64.2(b)(1)(i).

In regards to potential post-control PM emission rates, the ROP limits the PM emission rate to no more than 0.03 lb/mm Btu heat input and 11.50 lbs/hr. Therefore, the potential post-control PM emission rate from each boiler (50.4 tons/year assuming continuous operation at rated capacity) is less than the major source threshold of 100 tons per year, and neither boiler is defined as a "Large" pollutant specific emission unit.

II. MONITORING APPROACH

The key elements of the monitoring approach for PM are presented in Table 1. Opacity, as measured by the existing Continuous Opacity Monitoring System (COMS), will be used as the performance indicator for demonstrating compliance with the PM mass emission limit.

Table 1 - Proposed Monitoring Approach

	COMS Opacity
A. Indicator	Opacity of the baghouse exhaust gases – monitored by COMS located in the baghouse exhaust (i.e., each individual unit stack flue).
B. Indicator Range	An opacity indicator range of less than or equal to 7%, based upon on a 1-hour block average, has been selected. An excursion is defined as two (2) or more consecutive 1-hour block periods during which the COMS measured opacity exceeds 7%. Excursions trigger an inspection, corrective actions (if warranted), and CAM reporting requirements.

III. PERFORMANCE CRITERIA

Each boiler is subject to 40 CFR 60, Subpart Da – Standards of Performance for Electric Utility Steam Generating Units. Therefore, a COMS has been installed for each boiler as required in §60.49Da(a). The performance criteria for the COMS are summarized in Table 2.

Table 2 - Performance Criteria

	Visible Emissions (Opacity)
A. Data Representativeness	The COMS has been installed downstream of the baghouse exhaust in accordance with the requirements of Performance Specification 1 (PS-1) of 40 CFR 60, Appendix B.
B. Verification of Operational Status	Proper operation of the COMS was verified through the initial performance evaluation conducted in accordance with PS-1 of 40 CFR 60, Appendix B.
C. QA/QC Practices and Criteria	QA/QC practices are based upon the requirements of 40 CFR Part 60, Appendix F, Procedure 3 – Quality Assurance Requirements for Continuous Opacity Monitoring Systems at Stationary Sources. The practices include daily zero and upscale drift and status indicator checks, quarterly optical alignment, calibration error and zero compensation checks and annual zero alignment.
D. Monitoring Frequency	The opacity of the baghouse exhaust gases will be monitored on a continuous basis (i.e. one data point will be collected every 10 seconds).
E. Data Collection Procedures	The data acquisition and handling system (DAHS) has been set up to retain all 6-minute average opacity data, and the DAHS also retains hourly average opacity data. This data will be maintained for a period of at least five (5) years.
F. Averaging Period	The 10-second opacity values will be used to calculate 6-minute averages. The 6-minute averages will then be used to calculate the hourly block average opacity values.

IV. JUSTIFICATION

Rationale for Selection of Performance Indicator

Visible emission was selected as a performance indicator because it is indicative of good operation and maintenance of a baghouse. When a baghouse is operating properly, there will be minimal opacity. Any increase in visible emissions indicates reduced performance of a particular control device and will initiate implementation of the Maintenance Management Plan. Therefore, the presence of visible emissions is used as a performance indicator.

Rationale for Selection of Indicator Range

The selected indicator range is two (2) or more consecutive 1-hour block periods during which the average opacity is in excess of 7%. Historic stack testing demonstrated a greater than 10% compliance margin with the short term PM emission limits (0.03 lb/mmBtu and 11.5 lbs/hr) at opacity levels that are 5% and less.

The averaging period (two consecutive 1-hour block averages) has been selected in order to prevent temporary process fluctuations from triggering reportable CAM excursions. Furthermore, the associated PM emission limits are based upon the average of three test runs, with each run between 1 and 2 hours in duration (i.e. results of three 1-hour or 2-hour average US EPA Method 5 type stack tests), and a shorter averaging period would therefore not be representative of the associated particulate matter emission limits.

Performance Test Data

Starting in late 2015, the facility began conducting particulate matter testing on a quarterly basis under the MATS rule (previously, the facility had been performing PM tests once per ROP term). The emissions testing consisted of MATS Method 5 testing from two sampling ports for each stack flue, with each test including three 2-hour test runs. The tests were conducted with the boilers operating at 90% of the full load capacity or greater while firing a representative mixture of coal, wood, TDF and/or natural gas. Results of this testing is summarized below in Table 3.

Table 3 – Historic PM Test Results and Concurrent Opacity Data

Test Date(s)	Unit 1 Test Results			Unit 2 Test Results		
	lb/mmBtu	lbs/hr	Opacity (%)	lb/mmBtu	lbs/hr	Opacity (%)
October 20-21, 2015	0.0007	0.28	1.3	0.0013	0.51	1.7
March 7-9, 2016	0.0084	3.56	1.4	0.0046	1.97	2.0
May 9-11, 2016	0.0039	1.53	1.7	0.0016	0.72	2.2
July 26-28, 2016	0.0216	7.81	3.6	0.0223	8.27	3.8
October 3-5, 2016	0.0049	1.70	1.8	0.0030	1.11	1.8
March 6-7, 2017	0.0023	0.91	1.8	0.0077	3.25	2.4
May 15-17, 2017	0.0033	1.23	1.6	0.0045	1.73	1.7
July 24-26, 2017	0.0019	0.68	2.0	0.0005	0.19	2.0
November 28-30, 2017	0.0027	1.06	2.3	0.0019	0.78	2.4
March 5-7, 2018	0.0141	5.68	2.4	0.0035	1.47	1.7
May 7-9, 2018	0.0010	0.42	2.2	0.0010	0.41	0.3

Test Date(s)	Unit 1 Test Results			Unit 2 Test Results		
	lb/mmBtu	lbs/hr	Opacity (%)	lb/mmBtu	lbs/hr	Opacity (%)
July 30 – August 1, 2018	0.0008	0.33	0.9	0.0017	0.70	0.9
November 12-14, 2018	0.0006	0.25	1.6	0.0045	1.79	1.6
February 26-27, 2019	0.0007	0.26	1.2	0.0113	4.49	1.6
April 29-30, 2019	0.0010	0.38	1.5	0.0009	0.35	0.9
July 29-31, 2019	0.0005	0.20	1.0	0.0042	1.85	0.6

As shown in Table 3, over three years of quarterly stack testing has consistently demonstrated compliance with the PM lb/mmBtu and lbs/hr emission limits. While the maximum observed opacity during such testing was approximately 4%, the compliance margins during said testing was between 35% and 47%, depending upon the emission unit and specific emission limit. Thus, setting the excursion level at 7% opacity is reasonable in terms of ensuring that the opacity is high enough such that it would actually equate to an exceedance of the PM emission limits.

Note that each of Units 1 and 2 are also subject to opacity limits of 10%, based upon a 6-minute average. As such, opacity levels above the 6-minute average limit are investigated, with the plant taking appropriate corrective actions. Thus, a CAM excursion based on 1-hour average opacity exceeding 7% for two or more consecutive hours is not the sole determinant for when an investigation and corrective actions are triggered in relation to the baghouse controls.

Additional particulate matter testing will be conducted as required by the Renewable Operating Permit (i.e., at least once every five years). Further, PM stack tests will be conducted every three years under MATS, as Units 1 and 2 have demonstrated Low Emitting EGU (LEE) eligibility. If any MATS testing shows an average PM emission rate that is greater than 0.015 lb/mmBtu, then three years of quarterly PM testing must once again be conducted in order to reestablish LEE status and the once per every three year PM test schedule.